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Extending residential care through telephone counseling: Initial results from the Betty Ford Center Focused Continuing Care protocol

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Abstract

There is increasing evidence that a chronic care model may be effective when treating substance use disorders. In 1996, the Betty Ford Center (BFC) began implementing a telephone-based continuing care intervention now called Focused Continuing Care (FCC) to assist and support patients in their transition from residential treatment to longer-term recovery in the “real world”. This article reports on patient utilization and outcomes of FCC. FCC staff placed clinically directed telephone calls to patients ($N=4094$) throughout the first year after discharge. During each call, a short survey was administered to gauge patient recovery and guide the session. Patients completed an average of 5.5 (40%) of 14 scheduled calls, 58% completed 5 or more calls, and 85% were participating in FCC two months post-discharge or later. There was preliminary evidence that greater participation in FCC yielded more positive outcomes and that early post-discharge behaviors predict subsequent outcomes. FCC appears to be a feasible therapeutic option. Efforts to revise FCC to enhance its clinical and administrative value are described.

Keywords

Continuing care; Substance abuse; Treatment

1. Introduction

Empirical evidence indicates that substance dependence disorders, while generally evaluated and treated as acute care problems, may better be considered chronic problems that warrant ongoing monitoring and care (McKay, 2005; McLellan, Lewis, O'Brien, & Kleber, 2000; McLellan, McKay, Forman, Cacciola, & Kemp, 2005). Addictions often develop insidiously over time, and heavy substance use and associated functional impairment often recur for many years after criteria for dependence had been met (Vaillant, 2003). Episodes often alternate with periods of less problematic use (Anglin, Hser, & Grella, 1997; McKay & Weiss, 2001; Vaillant,

2003). This alternating pattern is similar in other chronic medical illnesses (e.g., asthma, depression diabetes).

The case for conceptualizing substance dependence as a chronic medical disorder becomes more compelling when one considers vulnerability to relapse after treatment. Regardless of discharge status, patient characteristics, or substance(s) of abuse, most patients relapse within 6 months of treatment termination (Anglin et al., 1997; Finney, Hahn, & Moos, 1996; Hubbard et al., 1989; Hunt, Barnett, & Branch, 1971; Institute of Medicine, 1998; McKay et al., 1999; McKay et al., 2004; Simpson, Joe, & Brown, 1997). Moreover, evidence suggests that vulnerability to relapse remains high for significant periods of time even after treatment interventions of 3–6 months (Dennis, Scott, & Funk, 2003; McLellan et al., 2000). Thus, some have suggested that substance dependence for many patients constitutes a chronic, recurrent disorder requiring treatment conforming to an extended care model (McLellan et al., 2000). Such a model includes a full continuum of care, regular monitoring of progress during all phases of care, and needs-based movement throughout the continuum until long-term stable recovery is achieved (McKay, 2005).

Although treatment protocols for chronic illnesses such as asthma, cardiac disease, diabetes, and some psychiatric disorders already reflect an extended or continuing care model emphasizing monitoring and treatment during, between, and after acute episodes, treatment for substance dependence is just beginning to move in this direction (Bodenheimer, Wagner, & Grumbach, 2002; Jarrett et al., 2001; Look Ahead Research Group, 2003; McKay, 2001; McLellan et al., 2000; Whelton et al., 1998). Longer periods of continued therapeutic contact with patients with substance dependence are necessary to prevent relapse by: 1) dealing with issues such as decreased motivation and increased craving, 2) addressing compliance with pro-recovery lifestyle changes including self/mutual help participation, and 3) providing coping skills to deal with an ongoing vulnerability and the various other problems that arise after the more intensive phase of treatment ends (McKay, 2005; McLellan, Weinstein, Shen, Kendig, & Levine, 2005; Simpson, 2004). Unfortunately, few treatment programs are designed to provide this type of care (McLellan, McKay et al., 2005).

1.1. History of Focused Continuing Care (FCC)

Out of concern for the challenges patients experienced after discharge, the Betty Ford Center (BFC) made a decision to implement an economical form of continuing case management with in their standard provision of services. An extended, telephone-based continuing care intervention originally referred to as “Focused Aftercare” or FAC, was adopted to assist and support patients in their transition from residential treatment to “recovery in the real world.” FAC was first implemented in March 1996 with 50% of BFC patients. Its popularity was evident immediately as many patients not selected for FAC complained to their counselors about not receiving this new, extra service. At this time, the FAC calls were made by the patient's continuing care counselor. Based on patient and staff feedback, FAC was modestly redesigned several times in its early years. Subsequently, BFC enhanced the visibility, responsibilities and goals for FAC by developing a specific program within BFC and hiring staff dedicated to conduct FAC as it was made available to all patients. The program was renamed “Focused Continuing Care” (FCC) to reflect that FCC is a level of treatment, and “aftercare” was a misnomer that downplays the importance of this phase.

Thus, FCC is an innovative, clinically distinct, and patient-focused level of care designed to: 1) sustain patient recovery and progress initiated during residential care, and 2) address the needs of patients once they re-enter their communities and are at heightened risk for relapse. In general, it is designed to provide an extended period of therapeutic contact with patients via a flexible, “user-friendly” format. Specifically, FCC assists patients who have successfully completed residential treatment at BFC with the transition home. To that end, FCC promotes

involvement with AA/NA and other continuing care services including formal outpatient treatment, provides encouragement during the first year of recovery, and assists patients if relapse occurs. The primary purpose of FCC is clinical, to support patients in continued sobriety and recovery. This is accomplished by trained counselors querying patients in a semi-structured fashion about their status and, with this assessment as a guide, providing support and motivation, engaging in problem-solving, and assisting with service referral. In addition, the FCC counselor contacts provide information to BFC on how patients are doing after discharge, thereby facilitating ongoing quality improvement efforts.

The telephone has been used as a medium for therapeutic interventions in general medicine and psychiatry (Baer et al., 1995; Greist et al., 1998; Jerant, Azari, & Nesbitt, 2001; Ries, Kaplan, Myers, & Prewitt, 2003; Roter et al., 1998; Wasson et al., 1992). Telephone counseling has also been effective as a smoking cessation intervention (Lichtenstein, Glasgow, Lando, Ossip-Klein, & Boles, 1996; Wadland, Soffelmayr, & Ives, 2001). Few studies, however, have examined the use of telephone counseling for patients with alcohol or other drug use disorders. Thus, telephone-based continuing care such as FCC is still relatively novel, although there is mounting evidence for its effectiveness (McKay, Lynch, Shepard, & Pettinati, 2005), and it is a relatively low cost method to provide continuing care at a distance. Additionally, there is evidence of feasibility and efficacy in a more recent study of Telephone Enhancement of Long-term Engagement (TELE); (Hubbard et al., 2007), a 12-week intervention, modeled on FCC, designed to support compliance with the continuing care plan following short-term residential/inpatient substance abuse treatment.

1.2. Goals of the study

As an independent research organization, the Treatment Research Institute (TRI) was asked to evaluate the FCC program and to suggest ways of improving it. This article reports data on utilization of the FCC protocol in a large sample of BFC patients who received FCC services between 1998 and 2005. Levels of patient involvement/compliance with FCC are described, as are patient outcomes, at various time points using the information from the surveys administered as part of the intervention. The relationship of patient involvement with FCC to outcomes is also examined. Finally, within the 1-year period when patients participate in FCC, analyses explore the relationships between early post-discharge recovery related activities and later outcomes.

2. Methods

2.1. Participants

Between 1998 and 2005, 4094 Betty Ford Center (BFC) patients participated in Focused Continuing Care (FCC). Participation in FCC was defined as at least one completed FCC phone session. Additionally, all patients had successfully completed residential treatment at BFC (approximately 90% of BFC admissions), a condition of eligibility to FCC. Patients signed a "Consent to Participate in Focused Continuing Care Program" that included allowing their data to be used for program evaluation and research purposes.

The total sample was 52% female and 48% male, with an average age of 43 years ($SD=13$). Alcohol was the primary drug of choice for 74% of the patients, while 6% and 4% reported cocaine and opiates, respectively. The remaining 16% of the patients reported poly-substance abuse (5%), amphetamine (4%), cannabis (2%), or another substance (5%) as their primary drug problem. In total, the final database contained the records of 22457 FCC calls from the 4094 patients.

2.2. The FCC protocol

FCC counselors met with patients both individually and in groups prior to their discharge from BFC to introduce themselves and the FCC program, encourage participation, and obtain consent and contact information. FCC, as a standard clinical activity, was available to all patients completing residential treatment, but was not required. Nonetheless, refusal was documented in the chart and discussed with the patient as a treatment issue to reinforce that recovery and treatment is a continuing process. Following discharge, FCC staff placed clinically directed telephone calls to patients twice monthly for the first 3 months following discharge, and once monthly thereafter for a period of nearly 1 year (14 calls total; see Table 1). Clinicians were provided guidelines for administering FCC and were supervised in its delivery. However, there was not a detailed telephone protocol. During each call, a short survey was administered to gauge the patient's status; the survey information was in turn used to guide the appropriate clinical responses to the patient.

2.3. Measures

The items from the FCC Form administered during the 1st call covered the time since discharge from BFC. For the remaining calls, the time period was "since your last call", a variable interval from the previously completed FCC call to each subsequent call. Recovery status was evaluated on several dimensions, including substance use, engagement in continuing care and self-help, and participation in other pro-recovery activities. The FCC form consisted of 26 items, including contingent items. Response format varied and included dichotomous "Yes"/"No" items, as well as Likert-scale ratings of frequency (e.g., "Never" to "Very Frequently") and severity (e.g., "Not At All" to "Totally"). Probing was expected as clinically indicated. Examples of items include:

- Have you been able to maintain sobriety since our last call? (Yes/No)
If No, how often did you drink or use? (Daily, Weekly, Monthly)
- Have you communicated with an alumni contact since our last call? (Yes/No)
- Have you obtained a sponsor since our last call or do you still have a sponsor? (Yes/No)
If yes, how often have you communicated with your sponsor since our last call? (Never, Rarely, Sometimes, Often, Very Frequently)
- Have you attended any 12-Step meetings since our last call? (Yes/No)
If yes, how often have you attended? (Never to Very Frequently)

2.4. Data analysis

The first set of analyses was conducted to evaluate the nature, frequency and patterns of participation in FCC. Contact rates were calculated overall and at each time point. Specifically, the mean (SD) and frequency distribution of completed calls were calculated. Additionally, the proportions of patients completing each specific FCC call and each combination of calls (to determine the most frequent participation patterns) were calculated. The next set of analyses was conducted to evaluate patient self-report of recovery status. At each time point, the proportions of patients that reported being abstinent, attending 12-Step meetings, having an alumni contact, and having a sponsor (all measured since the patient's last completed FCC call) were calculated. Due to the large number of analyses conducted, a significance level of $p < .01$ was used for all analyses.

Chi-square analyses were used to examine the relationship between measures of participation in FCC, and indicators of self-reported recovery at each time point. In order to conduct these

analyses all of the variables were dichotomized. A variable was created to indicate whether patients completed less than 5 of the 14 possible FCC calls or completed 5 or more calls (i.e., minimal versus more extensive involvement in FCC). Additionally, for each time point, variables were created to indicate whether or not the patient was abstinent, attended 12-Step meetings 3 or more times per week, had contact with alumni, and had a sponsor since their previous FCC call. Finally, to examine the relationship of abstinence to subsequent proximal participation in FCC, chi-square analyses were conducted using data across adjacent scheduled calls. In these analyses, one variable was self-reported abstinence and the other variable was completion of the next scheduled FCC call.

Finally, logistic regression analyses were performed to determine baseline predictors of outcomes. Predictive models were generated to determine relationships between early FCC status and later status (outcomes), both as reported during FCC calls. These models examine to what degree descriptive variables (e.g., gender, substance of abuse), early status variables (e.g., initial sobriety, having a sponsor, 12-Step attendance), and engagement variables (e.g., # of completed calls) predict important outcomes (e.g., sustained sobriety).

A subset of the patient sample was available for the logistic regression analyses as it was necessary to include only patients who had completed calls during a “baseline” and a later FCC time period (i.e., 6–12 months post-discharge) which was designated the “follow-up” period. Patients were considered to have adequate baseline data if at least their 2nd and/or 3rd scheduled FCC calls were completed. This baseline reflected status during the first 3 to 6 weeks post-discharge. To be included in the analyses, patients with baseline data also needed to have at least 1 call completed between FCC time points 8 and 14 (i.e., 6–12 months post-discharge).

Using these criteria, 52% ($n=2124$) of the patients from the larger sample were potentially eligible for inclusion in the regression analyses. The subsample was 53% female, with an average age of 45 ($SD=12$) years. Alcohol was reported as the primary substance of abuse by 77% of the sample, while 6% and 5% reported “opiates” and cocaine respectively. The remaining 12% reported poly-substance abuse (5%), amphetamine (3%), cannabis (2%), or another drug (2%) as their primary problem. Additionally, 45% stated alcohol was their only substance of abuse. These characteristics are very similar in the full sample. On average, the subsample had their last FCC contact at call 12 ($SD=2$), about 10 months post-discharge, and completed a total of 8 ($SD=3$) calls.

Control variables in the logistic regression represented personal characteristics about a patient; gender and substance of abuse (alcohol only or not alcohol only). Summary measures of participation in FCC were constructed, these were: a) time period of the last completed FCC call in order to represent duration; and b) total number of FCC calls completed to represent intensity.

Patient responses to the first 3 FCC calls (covering the first 6 weeks post-discharge) were used to create additional baseline independent variables; “frequent 12-Step attendance”, “having a sponsor”, “contact with alumni”, and “maintaining sobriety”. The 2nd and/or 3rd FCC call was completed in all cases, so that at a minimum each variable represented the first 3 weeks post-discharge and at a maximum the first 6 weeks. These variables are operationally defined and the base rates (%) provided as follows. To have “frequent 12-Step attendance”, patients reported attending meetings ≥ 3 times per week at every completed call in the defined baseline period (77%). “Having a sponsor” indicated that the patient reported having a sponsor during at least one baseline call (61%). Similarly, “contact with alumni” indicated that the patient reported contact with an alumnus during at least one baseline call (41%). “Maintaining sobriety” indicated that patients reported abstinence at every completed call in the first 3 FCC time periods (90%).

Finally, a corresponding set of dependent variables was created representing recovery outcomes. These follow-up variables; “frequent 12-Step attendance”, “having a sponsor”, “contact with alumni”, and “maintaining sobriety” were constructed from responses during FCC calls completed 8 weeks post-discharge and later (i.e., calls 4 through 14). The follow-up period varied depending on when patients completed their last call, but in all cases extended to at least 6 months post-discharge. Each follow-up variable was operationalized similarly to its corresponding baseline variable.

3. Results

3.1. Participation in FCC

A basic yet detailed view of participation can be gleaned by examining the frequencies of completion for each FCC call. As displayed in Table 1, 71% of the sample completed the 1st call, 58% completed the 2nd call, and a range of 30% to 46% completed calls 3 through 7. By 6 months post-discharge (i.e., call 8), and at each point thereafter, less than 40% of the sample completed any given call. There is diminishing participation over time with the lowest rates at calls 13 and 14, the final two calls, 22% and 28%, respectively. In part, this reflects counselors discontinuing contact attempts after patients did not complete phone sessions for several consecutive call periods.

Another measure of patient participation in FCC is the number of calls completed. Of the total sample (4094 patients), 550 (13%) completed only one call; in nearly half of these cases ($n=237$) the one call completed was the first call at 1-week post-discharge. At the other end of the continuum, less than 1% of the sample ($n=31$) completed all 14 FCC calls. The mean number of calls was 5.5 ($SD=3.3$) and the median was 5. Arguably the number of calls completed can be categorized to represent minimal, moderate and substantial participation in FCC, respectively: 1–4 calls (42% of the sample); 5–8 calls (37%); and ≥ 9 calls (21%).

The pattern and duration of patient contact following discharge from BFC can clarify the nature of involvement in FCC beyond that provided solely by the number of calls completed. The most frequent patterns of FCC participation were “1st call only” ($n=237$, 6%), “1st and 2nd calls only” ($n=126$, 3%), and “2nd call only” ($n=89$, 2%). Furthermore, 13% ($n=529$) of the sample completed only calls scheduled during the first 6 weeks (i.e., calls 1, 2, and/or 3). Conversely, 87% ($n=3565$) completed at least one call 8 or more weeks post-discharge (i.e., calls 4 through 14).

3.2. Recovery status and behaviors

Patients' recovery status, including 12-Step meeting attendance, contact with a sponsor, contact with BFC alumni, and maintaining sobriety, was measured at each FCC call for the period of time since the last completed call. Thus, the measurement interval for a call varied with the time between completed calls. Since data are available only for those patients who completed a call at the time point under consideration, the sample size varied at each point (refer to Table 1).

Of all recovery activities measured, patients most frequently reported attending 12-Step meetings. Calls completed during the first 2 months post-discharge (i.e., calls 1 through 4) indicated that greater than 90% (range 91–92%) of the patients had attended at least one 12-Step meeting. Furthermore, during this early period of FCC, greater than 80% attended 12-Step meetings regularly (i.e., ≥ 3 times per week). For the remainder of FCC, attendance gradually decreased slightly from 89% (i.e., call 5) to 78% (i.e., call 14); similarly regular attendance gradually decreased from 78% to 62%. Overall, 95% of the patients reported attending 12-Step meetings at some point during their course of FCC.

Within the first week post-discharge (i.e., call 1) 29% of the patients made contact with a sponsor; contact increased to 58% by call 4, at eight weeks post-discharge. From that point forward contact was within a tight range of 62% to 65%. Regular contact (i.e., ≥ 3 times per week) with a sponsor was reported by 21% and 35% of patients at calls 1 and 2, respectively. After this initial post-discharge period, regular contact with a sponsor ranged from 40% to 47%. Overall, 73% of the patients reported contact with a sponsor at some point during the course of FCC.

In the first week post-discharge nearly a third (30%) of the patients reported having been in contact with BFC alumni. After the first week this contact rate gradually decreased to 10% at 5 months post-discharge (i.e., call 7) and remained at this plateau. Overall, 42% of patients reported having contact with alumni during at least one FCC call.

Very high rates of sobriety were reported at each FCC call [$\geq 88\%$, range 96% (at call 1) to 88% (at call 14)]. Moreover, 73% of patients reported being abstinent since discharge (i.e., at every completed FCC call).

3.3. Participation and recovery status

Chi-square analyses were conducted comparing patients with minimal versus more extensive involvement in FCC. Accordingly, the analyses compared those patients who completed 4 or fewer FCC calls to those who completed 5 or more calls.

At 10 of the 14 time points, significantly higher rates of regular (i.e., ≥ 3 times per week) 12-Step meeting attendance were reported by patients completing 5 or more FCC calls as compared to those completing 4 or fewer calls. For patients with at least 5 calls, rates of regular attendance were greatest (86%) at the first three time points and fell to 63% at the last one. Attendance for patients with fewer calls ranged from 80% at the first two points to 49% at the final scheduled call.

Patients completing 5 or more FCC calls as compared to patients completing fewer calls were more likely to report contact with a sponsor at 8 of the 14 call points. For the more extensively involved patients, contact ranged from 33% at the first call, to almost 69% at call 14. For patients completing 4 or fewer FCC calls, contact with a sponsor ranged from 24% to 58%, between the first and last calls. For both groups, the percentage of patients having contact with a sponsor increased during the first 2 months (i.e., through call 4) and then leveled off. From the 5th call forward, the patients with more extensive FCC involvement maintained contact with a sponsor at higher rates (62% to 69%) than did patients with minimal FCC involvement (53% to 58%).

At 5 of the 14 call points, significantly higher rates of alumni contact were reported for patients completing 5 or more FCC calls as compared to patients completing 4 or fewer calls. For patients completing 5 or more calls, the rate of alumni contact was highest (34%) at the first call and eventually fell to the lowest level (7%) at call 13. Patients completing fewer calls, reported rates of alumni contact ranging from a high of 25% at the first call to only 4% at call 10.

At all but one time point, patients completing 5 or more FCC calls as compared to patients completing fewer calls were significantly more likely to report maintaining sobriety. Specifically, $\geq 89\%$ of the patients completing 5 or more calls reported abstinence at each call (range, 97% at call 1 to 89% at call 13). Conversely, reports of abstinence by patients completing fewer calls ranged from a high of 94% (at call 1) to a low of 74% (at call 13). The relationship between abstinence and subsequent proximal participation in FCC was examined. For all time points, patients who reported being abstinent were also more likely to complete

their next scheduled call. At five points (i.e., calls 1, 5, 7, 9, 11), the relationship was statistically significant. The median next call completion rate for abstinent patients was 55%; the median for those who reported using was 46%. Thus, there was some evidence that self-reported abstinence was associated with subsequent FCC participation.

3.4. Logistic regression analysis

Although 52% ($n=2124$) of the patients from the full sample were potentially eligible for the logistic regression analyses, due to missing data on individual items, the actual sample was comprised of 49% ($n=2024$) of the dataset. These analyses were used to identify early clinical indicators for a variety of outcomes such as 12-Step attendance, having a sponsor, contact with alumni, and maintaining sobriety.

When asked about 12-Step attendance, 878 of the 2024 patients (43%) reported regularly attending 12-Step meetings (i.e., ≥ 3 times per week) at every FCC call completed during the follow-up period. Patients who reported frequently attending 12-Step meetings ($OR=3.54$) and having a sponsor ($OR=2.31$) at baseline were significantly more likely to report frequent attendance during the follow-up period (bold in Table 2). No other predictors reached statistical significance.

Regarding having a sponsor, 1672 (83%) patients reported contacting a sponsor in at least one FCC call completed during the follow-up period. Patients who were male ($OR=1.54$), completed their last FCC call closer to 1 year post-discharge ($OR=1.14$), and completed more FCC calls ($OR=1.12$) were significantly more likely to contact a sponsor during the follow-up period (Table 3). Also, patients who at baseline reported having a sponsor ($OR=10.21$) and regularly attending 12-Step meetings ($OR=2.71$) were significantly more likely to contact a sponsor during the follow-up.

One third of the patients (33%, $n=666$) reported being in contact with a BFC alumni in at least one FCC call completed during the follow-up period. Patients who were male ($OR=1.51$) and completed more total FCC calls ($OR=1.15$) were significantly more likely to have contact with an alumni during the follow-up period (Table 4). Additionally, patients who reported alumni contact ($OR=3.86$), frequent 12-Step attendance ($OR=1.58$), and maintaining sobriety ($OR=1.71$) at baseline were significantly more likely to report having contact with an alumni during follow-up.

Of the 2024 patients, 1466 (72%) reported maintaining sobriety at all completed FCC calls during the follow-up period. Patients who were male ($OR=1.56$) and those who reported maintaining sobriety during the baseline period ($OR=4.03$) were significantly more likely to report maintaining sobriety during the follow-up period (Table 5).

4. Discussion

Though analogies to other chronic illnesses have suggested the potential value of treating addiction in a continuing care fashion, there have been few attempts to modify traditional residential care toward such a model. The present study reports BFC efforts to use a telephone intervention (FCC) during the first year post-discharge, to support patients in their transition from residential care to “recovery in the real world” and to assist patients in getting back on track if relapse occurs.

A noteworthy example of the use of telephone counseling for substance use disorders is the work of McKay et al. (2004, 2005). Weekly telephone counseling for 12 weeks was paired with limited group counseling in a continuing care intervention for patients who had successfully completed IOP. Patients completed an average of 6 (50%) of the 12 scheduled

phone sessions. Results showed that the telephone-based care was more effective than standard group counseling on most measures examined over a 2 year follow-up, and more effective than individual relapse prevention on a number of measures, including cocaine urine toxicology results. The one group of patients who did not respond well to telephone continuing care had made poor progress in achieving the goals of the initial IOP (e.g., achieving abstinence, attending self-help, developing social supports). More recently, the TELE study, which examined the feasibility and efficacy of a 12-week telephone intervention following residential/inpatient treatment, found that patients receiving TELE had greater likelihood of attending outpatient treatment compared to patients who had a discharge interview only (Hubbard et al., 2007). Additionally, 92% of TELE patients completed at least one call, in turn; those patients made 4.15 (59%) of the 7 scheduled calls. Finally, data from both studies indicate that participation diminished over time.

In the present evaluation, patients in the total sample completed an average of 5.5 (40%) of the 14 scheduled calls. This compares favorably with the results of the controlled clinical trial of McKay et al. (2005) and somewhat less favorably with the TELE study, rigorously implemented within the Clinical Trials Network. Since FCC consisted of less frequent calls for a longer period of time, and was a standard clinical practice, as opposed to an experimental intervention in a clinical trial, that lower levels of the intervention are delivered is not surprising. It is noteworthy that the majority of patients (58%) in FCC demonstrated more than minimal engagement as indicated by completing 5 or more calls. Also, 85% of the patients completed a call at or beyond 8 weeks post-discharge from residential treatment. Nonetheless, participation in FCC was far from ideal and diminished over time. Also, the study included only patients who completed at least one FCC call, thus, the actual contact rates are no doubt lower. Increasing sustained contact over time is clearly one of the important challenges for FCC, as it is for any type of continuing care.

The results of the outcomes analyses showed that at each FCC call the large majority of BFC patients reported maintaining sobriety since their previously completed call. However, for 12 of 14 calls (i.e., data points) information was available for less than half of the sample. Thus, the results support the rather specific conclusion that, if a patient completes a call, s/he is very likely to report sobriety since the previous call. Likewise, at each call, patients report substantial involvement in other recovery-oriented behaviors but the same caveat concerning the sample applies.

With regard to participation in FCC as measured by the number of completed calls, patients who were more involved (i.e., ≥ 5 calls) typically reported greater rates of recovery-oriented behaviors (i.e., frequent 12-Step attendance, having a sponsor, contact with alumni, and abstinence) than those who were less involved. These findings are consistent with benefits accruing as involvement in FCC increases. The results also support fostering maximal patient participation in FCC, especially for the less involved patients as they seem to be more in need of the help that FCC might provide.

The logistic regressions provide more fine-grained results and further clinical guidance. For each specific outcome, the strongest predictor was the corresponding baseline variable, a common finding in behavioral research of all kinds. The consistency and strength of this finding across all recovery behaviors is noteworthy. Follow-up status with regards to; frequent 12-Step meeting attendance, having a sponsor, alumni contact, and maintaining sobriety were each most strongly predicted by their corresponding baseline variable. One example of the strength of such associations is that patients who maintained sobriety during the baseline period were 4 times more likely to maintain sobriety during the remainder of their FCC involvement than were patients who did not achieve initial abstinence. Furthermore, early recovery activities, other than the baseline version of the follow-up variable, in many cases also improved the

likelihood of positive outcomes. Both findings may have direct clinical relevance. Low rates of a particular recovery behavior early on in FCC may make a patient vulnerable to continued low rates of that behavior later on, and early high rates of recovery behaviors in general support recovery. Efforts to understand and rectify early problems, and support the maintenance of positive, recovery-oriented behaviors seem warranted.

Engagement and participation variables were not as consistently related to good outcomes in the multivariate analyses as they were in the bivariate analyses. The number of completed FCC calls was a significant predictor of two outcomes, alumni contact and having a sponsor. Thus, a unique and positive effect of FCC “dose” was demonstrated for some outcomes.

4.1. Limitations

A limitation in all of the analyses was missing data due to attrition during the FCC intervention. In the chi-square analyses, the number of patients varied across time points and therefore for the individual chi-squares. In general the more distal time points had the fewest participants. With regard to the logistic regressions, the analyses were conducted on about half (49%) of the sample, patients with both baseline and follow-up data. The sample issues require that the results be viewed with caution as patients less involved in FCC were underrepresented. Also, as previously mentioned, the dataset had information available only for those eligible patients who participated in FCC to at least a minimum extent (i.e., 1 call). Additionally, all data were based on patients' self-reports. Because the FCC paradigm was (and is) considered an extension of treatment and not a follow-up evaluation, there are no external measures of substance use and other traditional outcomes. Clearly collateral data such as significant other's reports on the patient's status, and urine toxicology results would be valuable and inform the validity of our findings. Finally, since FCC was standard clinical practice and available to all successfully discharged patients at BFC, there was no comparison group that did not receive FCC.

4.2. Future directions

The results suggest that FCC is a feasible therapeutic option. Nonetheless, FCC could benefit from modifications geared to increase patient participation and the clinical and administrative utility of the survey information. To this end, in 2005 BFC and TRI began a collaboration to revise the FCC protocol. These analyses were a first step in that process. Additionally, a series of focus groups were held by BFC to obtain patient feedback on FCC as well as suggestions for improving it. Feedback was also obtained from an intent-to-treat sample of patients via an individual telephone survey conducted by TRI after patients' first 3 months of scheduled participation in FCC.

The information gained from these and other activities led to considerable changes in the practice of FCC. The intervention has been manualized in greater detail than previously. Documentation procedures were developed for all patients for whom FCC is planned. Procedures for contacting patients to complete FCC calls, including the use of a patient Locator Form, have been standardized to facilitate and increase ongoing patient contact. These procedures also include specifying a minimum number of call attempts and for increasing the intensity/frequency of contact attempts following missed phone sessions. The expectation of patient participation in FCC following discharge from BFC is now more regularly and clearly communicated to patients. FCC is explained to and discussed with patients by FCC staff several times during their residential stay, beginning at the first week of treatment. To the extent that these modifications designed to increase patient participation in FCC are successful, the sample limitations of the present evaluation will be resolved resulting in both increased clinical and administrative value of FCC.

Finally, the FCC survey form has been revised to include more items to assess patients' multidimensional status. For example, the receipt of formal substance abuse treatment post-discharge is now well-documented, emotional problems and psychiatric medications are recorded, and in general more risk and pro-recovery factors are queried. Items were adapted from existing instruments with demonstrated reliability and validity, and cognitive testing of these revised and additional items was conducted with BFC patients. Also, the clinical guidance in obtaining and using the information collected during the calls is more specified.

A next step is to link FCC data to other BFC clinical records. Thus, the relationship between patient admission and during treatment variables to subsequent FCC participation and status can be examined. Discernable relationships may lead to FCC being practiced somewhat differently with different patients. A longer-term objective is to develop empirically based algorithms that can guide the application of adaptive clinical strategies by FCC counselors.

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Table 1

Proportion of sample completing each FCC call

Call#	Time frame	%	<i>n</i>
1	Month 1, Week 1	71%	2891
2	Month 1, Week 3	58%	2389
3	Month 2, Week 2	37%	1512
4	Month 2, Week 4	46%	1897
5	Month 3, Week 2	30%	1242
6	Month 3, Week 4	44%	1791
7	Month 4, Week 4	43%	1749
8	Month 5, Week 4	39%	1604
9	Month 6, Week 4	36%	1459
10	Month 7, Week 4	34%	1383
11	Month 8, Week 4	31%	1279
12	Month 9, Week 4	30%	1220
13	Month 10, Week 4	22%	909
14	Month 11, Week 4	28%	1132

Table 2

Predictors for frequency of 12-Step attendance at follow-up

Baseline variables	<i>B</i>	S.E.	Wald	<i>p</i>	Exp(<i>B</i>)
Gender	−0.239	0.099	5.864	0.015	0.787
Drug of abuse (Alc. only or not)	−0.043	0.096	0.202	0.653	0.958
Time period of last call	−0.065	0.032	4.288	0.038	0.937
Total # of calls completed	0.016	0.022	0.511	0.475	1.016
Maintaining sobriety	0.161	0.179	0.808	0.369	1.174
Contact with an alumni	0.027	0.098	0.079	0.779	1.028
Having a sponsor	0.836	0.104	64.962	0.000	2.306
Frequency of 12-Step attendance	1.265	0.138	83.965	0.000	3.542

Table 3

Predictors for having a sponsor at follow-up

Baseline variables	<i>B</i>	S.E.	Wald	<i>p</i>	Exp(<i>B</i>)
Gender	0.428	0.143	9.029	0.003	1.535
Drug of abuse (Alc. only or not)	−0.313	0.137	5.210	0.022	0.731
Time period of last call	0.128	0.043	9.039	0.003	1.137
Total # of calls completed	0.110	0.034	10.285	0.001	1.116
Maintaining sobriety	0.162	0.215	0.567	0.452	1.176
Frequency of 12-Step attendance	0.998	0.150	44.365	0.000	2.712
Contact with an alumni	0.134	0.144	0.866	0.352	1.143
Having a sponsor	2.324	0.163	203.201	0.000	10.213

Table 4
Predictors for having contact with an alumni at follow-up

Baseline variables	<i>B</i>	S.E.	Wald	<i>p</i>	Exp(<i>B</i>)
Gender	0.409	0.107	14.681	0.000	1.505
Drug of abuse (Alc. only or not)	0.040	0.104	0.147	0.701	1.041
Time period of last call	0.041	0.036	1.311	0.252	1.042
Total # of calls completed	0.140	0.024	33.975	0.000	1.151
Maintaining sobriety	0.535	0.214	6.244	0.012	1.707
Frequency of 12-Step attendance	0.455	0.140	10.641	0.001	1.577
Having a sponsor	0.101	0.112	0.825	0.364	1.107
Contact with an alumni	1.350	0.104	167.252	0.000	3.859

Table 5

Predictors for maintaining sobriety at follow-up

Baseline variables	<i>B</i>	S.E.	Wald	<i>p</i>	Exp(<i>B</i>)
Gender	0.446	0.107	17.365	0.000	1.562
Drug of abuse (Alc. only or not)	0.210	0.104	4.042	0.044	1.233
Time period of last call	-0.037	0.034	1.211	0.271	0.963
Total # of calls completed	0.030	0.024	1.570	0.210	1.031
Frequency of 12-Step attendance	0.241	0.128	3.555	0.059	1.273
Contact with an alumni	0.144	0.107	1.812	0.178	1.155
Having a sponsor	0.008	0.110	0.005	0.942	1.008
Maintaining sobriety	1.393	0.163	72.648	0.000	4.026