

Increasing Social Support for Individuals with Serious Mental Illness: Evaluating the Compeer Model of Intentional Friendship

Brian H. McCorkle · E. Sally Rogers ·
Erin C. Dunn · Asya Lyass · Yu Mui Wan

Received: 24 January 2007 / Accepted: 8 April 2008
© Springer Science+Business Media, LLC 2008

Abstract We conducted a quasi-experimental study of Compeer, which matches community volunteers and people with SMI to increase social support. Seventy-five adults with SMI received community psychiatric treatments-usual (TAU) while 79 adults received Compeer services plus TAU. Compeer clients reported significant improvements in social support and a trend towards improved subjective well-being. After 6 months, social support increased >1 SD for 13%, increasing to 23% at 12 months, supporting qualitative research suggesting the “active ingredient” in intentional friendships often takes more than 1 year to develop. This subgroup of responders showed significant gains in subjective well-being and reductions in psychiatric symptoms.

At the time of data collection Dr. McCorkle, Erin C. Dunn and Dr. Won were at Center for Psychiatric Rehabilitation, Boston University, 940 Commonwealth Avenue, West Boston, MA 02215, USA.

B. H. McCorkle
The Albert & Jessie Danielsen Institute at Boston University,
Boston, MA, USA

E. S. Rogers (✉) · A. Lyass
Center for Psychiatric Rehabilitation, Boston University, 940
Commonwealth Avenue, West Boston, MA 02215, USA
e-mail: erogers@bu.edu

A. Lyass
e-mail: asya@bu.edu

Y. M. Wan
Elementary and Secondary Education, Massachusetts
Department of Education, 350 Main Street, Malden,
MA 02148, USA
e-mail: ywan@doe.mass.edu

E. C. Dunn
Center for College Health and Safety, Education Development
Center, Inc, Newton, MA, USA

Keywords Community support programs · Social support · Social skills training · Psychiatric rehabilitation · Compeer

Introduction

People with serious mental illness (SMI) often experience difficulty in developing and maintaining social relationships (Davidson et al. 2004; Mueser and Tarrier 1998). Outside of the contact they have with professionals and family members, their interactions with others can be quite limited: they often have smaller social networks than people without SMI (Baker et al. 1993; Harris et al. 1999; Tolsdorf 1976; Walsh and Connelly 1996) and their networks are often largely comprised of mental health or social service professionals, family members, and peers with psychiatric conditions (Angell 2003; Borge et al. 1999; Dailey et al. 2000; Meeks and Murrell 1994). As a result, many report spending the majority of time alone (Davidson et al. 1998), and experiencing feelings of social isolation or loneliness (Davidson and Stayner 1997; Green et al. 2002), overall dissatisfaction with the social support they receive (Bengtsson-Tops and Hansson 2001; Caron et al. 1998; Furukawa et al. 1999), and lack of community integration (Crotty and Kulys 1985; Davidson et al. 2004; Goldberg et al. 2003; Leavy 1983; Rogers et al. 2004). Since each of these may ultimately serve as a barrier to recovery (Deegan 1990; Spaniol et al. 1999), finding opportunities to increase social support for this population is especially important.

The relationship between social support and health, functioning, and quality of life is well established in the literature (Cohen et al. 1985; Holahan et al. 1997; Schwarzer and Lepin 1989). In the general population, social support buffers against stressful life events, increases adherence to medical

treatments, and improves recovery from medical illness, among other health-promoting effects (Cohen and Hoberman 1983; Cohen et al. 1985; DiMatteo 2004; Heaney and Israel 1997; Sarason et al. 1997). For people with SMI, perceptions of adequate social support are associated with several psychological benefits, including increased self-esteem, feelings of empowerment, functioning, quality of life, and recovery, while the absence of social support appears related to greater psychiatric symptoms, poorer perceptions of overall health, and reduced potential for full community integration (Buchanan 1995; Caron et al. 1998; Corrigan and Phelan 2004; Goldberg et al. 2003; Strauss and Carpenter 1977).

Several recently developed psychosocial programs directly or indirectly foster social relationships for people with psychiatric conditions (Harris and Bergman 1985; McGrew and 1995; Thornicroft and Breakey 1991; Wilson et al. 1999). Like many programs intended for other vulnerable populations, these programs are often non-traditional in that support is provided by non-professionals such as by community volunteers or by members of self-help, mutual support, or consumer-run programs (Corrigan et al. 2002; Lieberman et al. 1991; Mowbray and Tan 1993; Skirboll 1994; Skirboll et al. 2006; Skirboll and Pavelsky 1984). Articles reviewing evaluations of these community-based support programs (Davidson et al. 1999; Solomon 2004) suggest an association with improvements in several aspects of psychological health and functioning.

We theorize that support provided by volunteers from the community may be beneficial in several ways. Interactions with community members may provide the opportunity for individuals to diversify their social network by interacting with individuals outside of the treatment context, thereby increasing community integration. Informal social skills training and modeling social behaviors in community settings by volunteers may promote improved social functioning. Use of these natural supports may also be more mutual and normalizing, less expensive, and lead to greater community integration than social skills programs provided by rehabilitation professionals. The Compeer model of intentional friendship, described below in the Methods section and in several publications (Dunn et al. 2006; McCorkle et al. 2006; Skirboll 1994; Skirboll et al. 2006; Skirboll and Pavelsky 1984; Sousa and Frizzell 2005) provides these benefits through regularly scheduled meetings between clients with SMI and community volunteers for social and recreational activities.

Several intentional friendship programs have been evaluated in recent years, although the results of these studies vary. Prior to the current study, the only large-scale randomized clinical trial (RCT) (Davidson et al. 2004) yielded a series of complex statistical interactions that are difficult to interpret and seem to contradict the qualitative results reported from that same study (Davidson et al. 2001). However, three factors may have mitigated their results. Their study treatment period of

9 months may not have allowed sufficient time for the intentional friendships first to develop depth and then to effect change. Second, all participants received \$28 monthly stipends to spend on social activities, and the control participants indicated that this allowed them to engage in social activities they would not have otherwise, so even the control condition experienced increased socialization. Third, it is also possible that their quantitative instrumentation did not adequately measure the specific benefits of the program; that is, the flexibility of their qualitative study (Davidson et al. 2001) may have detected benefits that did not fit the predetermined nature of quantitative measures used in their randomized clinical trial (Davidson et al. 2004).

In a similar study of chronically depressed women, those who were randomly assigned to a befriending intervention were more likely than controls to experience symptom remission at follow-up (Harris et al. 1999). However, neither this study nor the befriending RCT mentioned above examined changes in perceived social support over time. This omission appears significant in light of several studies that have identified social support as a key ingredient in these types of programs, (Davidson et al. 2001; McCorkle et al. under review) and may have contributed to ambiguous findings.

Although the studies described above examined outcomes, only one study has examined the components of intentional friendship interventions that clients and volunteers believe contribute to success (McCorkle et al. under review). In that qualitative study of the benefits and drawbacks of the Compeer model of intentional friendship, both clients and volunteers described matches that deepened over several years from “helper/helpee” relationships into rich, mutually beneficial friendships. Many clients became more outgoing, sociable, and active, with increased self-esteem, self-worth, and self-confidence. Volunteers also reported that they gained a good friend themselves. No significant drawbacks were reported by either clients or volunteers.

The present study used a quasi-experimental design to follow new recipients of Compeer services for 1 year in order to explore whether Compeer services successfully increased social support for a large diverse sample of people with SMI living in the community. Several domains were assessed to examine whether increases in social support were related to quantifiable improvements in subjective well-being and psychiatric symptoms, and multiple interviews were used to examine change over time.

Methods

The Intervention

Compeer Services, Inc. is a non-profit organization that recruits adult volunteers from the community and matches

them in intentional friendships with people in treatment for SMI. Compeer services are considered an adjunct to traditional mental health services and consist primarily of planned one-to-one relationships between “clients” and “volunteers” (Skirboll 1994; Skirboll et al. 2006; Skirboll and Pavelsky 1984). Clients are referred to Compeer by their professional mental health providers, and ongoing psychotherapy is a requirement for Compeer services. Volunteers are recruited, interviewed, and trained by Compeer staff on an ongoing basis. Pairs of volunteers and clients commit to meet for 4 h monthly for 1 year, during which they will engage in social, recreational, and supportive activities together. Additional information about the intervention can be found in related publications (Dunn et al. 2006; McCorkle et al. 2006; Skirboll 1994; Skirboll et al. 2006; Skirboll and Pavelsky 1984).

Research Design

Adult participants with SMI living in the community were recruited from the waiting lists of three Compeer offices in upstate New York. Participants in both the treatment and wait-list comparison conditions continued to receive outpatient treatment as usual. Participants in the treatment condition were also matched with a Compeer volunteer as an adjunctive treatment.

We employed a quasi-experimental research design to create a wait-list comparison group with equivalent demographic and clinical characteristics because random assignment was not feasible in this fully operational services program (Campbell and Stanley 1963). Compeer, Inc., use client “profiles” to match clients and volunteers, including basic demographic characteristics such as age, gender, race and ethnicity, along with information about the client interests, reasons for wanting a Compeer volunteer, and psychiatric condition. Concerned that this matching process might introduce social desirability bias if participants selected for the treatment condition were more “matchable” than those remaining in the wait-list comparison condition, we developed procedures to counter this concern while preserving the basic operational procedures of the organization. First, Compeer staff chose 6–8 clients from their waiting list whom they thought might be a good match for that specific volunteer. The volunteer then selected three clients with whom they were willing to work, with the understanding that they might work with their second or third choice depending on current client availability. The first-ranked client was invited to be matched with a volunteer and join the study, with the second and third-ranked clients available as replacements. For each volunteer, one of their preferred clients who was not actually matched was invited to join the wait-list comparison group, thus insuring that everyone in the comparison

condition had been selected by a volunteer. Because of a shortage of volunteers at the time of the study (apparently due to the influences of market fluctuations and temporary post-9/11 changes in volunteer patterns), average time on the wait list was considerably longer than the 1-year period of the study. Therefore, only a few comparison participants dropped out of the study due to being successfully matched before their final interview.

Sample

Participants were enrolled into the study from 2001 until 2004. Entrance criteria were: (1) age of 18 or over; (2) presence of SMI per the referring mental health professional; (3) expressed interest in receiving Compeer volunteer services; (4) willingness to participate in data collection; and (5) ability to give full and knowing consent.

Of the 154 adults in the study, 79 were randomly assigned to the treatment group and 75 to the wait-list comparison group. Of those entering the study, 87% ($n = 134$) completed the 12-month follow-up assessment. Participants were predominantly female (81%, $n = 125$) and Caucasian (84%, $n = 130$). Ages ranged from 20's to 70's (mean = 45, SD = 12). Regarding marital status, 54% ($n = 83$) were single, 9% ($n = 14$) married, and 32% ($n = 50$) divorced or separated; 45% ($n = 70$) had children. Approximately 81% ($n = 125$) lived in independent housing, 17% ($n = 26$) in group settings, and the rest in other settings. Educationally, 23% ($n = 40$) reported less than a high school degree; 27% ($n = 42$) a high school diploma; 37% ($n = 57$) some post high school training; and 10% ($n = 15$) a Bachelor's degree or beyond. A total of 34% ($n = 52$) of the sample reported at baseline that they were engaged in some kind of volunteer or paid vocational activity, with 19% ($n = 23$) being employed either full or part-time. Sixty one percent ($n = 94$) received SSI and 45% ($n = 69$) received SSDI.

There were no significant differences between groups in age, gender, marital status, education, housing, or rates of receiving SSI or SSDI. However, there was a significant difference between groups in race ($\chi^2 = 6.39$, $df = 1$, $p = 0.011$), with 92% ($n = 69$) Caucasians in the comparison group and 77% ($n = 61$) in the treatment group. The groups also differed in full- or part-time competitive employment ($\chi^2 = 6.38$, $df = 1$, $p = 0.012$), with participants in the comparison group less likely to be competitively employed (11%, $n = 8$) than those in the treatment group (27%, $n = 21$).

Although neither diagnosis nor disability were formally assessed, 100% of participants were given a diagnosis of SMI by their mental health professional provider, and 80% ($n = 127$) reported a history of psychiatric hospitalization, which together with the unemployment rate of 81% and high

rates of receiving either SSI or SSDI indicates an extremely high rate of psychiatric disability among the sample.

Statistical Analysis

SAS 8 and SPSS 15 were used for all analyses. First, frequencies and descriptive statistics were obtained for all variables to examine the distribution of the data. Chi-square tests and *t*-tests, respectively, were used to examine whether there were differences in categorical and continuous baseline demographic variables between groups, as noted above. Given the desire to reduce multiple testing, we created indices for our three major outcomes using related instruments to create *z* scores, as described below. The experimental and control groups were then compared using their 6 and 12 month follow-ups on the three outcome indices using two-way analysis of variance (ANOVA), adjusting for baseline. To avoid conclusions about spurious findings that are associated with multiple testing, a Bonferroni adjustment was used for each of the outcome indices. As a result, the alpha level of less than 0.017 was considered the statistically significant cutoff for these analyses.

Assessment Methods and Measures

To collect baseline data, participants met individually with interviewers within 1 month of being matched with a volunteer. The interview was repeated after 6 and 12 months, and participants were reimbursed \$20 for their time after each interview. Demographic characteristics were gathered through a self-report questionnaire. The remaining measures assessed three primary domains, and were therefore combined into three global indices for statistical analysis.

Global Index 1: Social Support

Participants reported subjective and objective ratings of social support using the Interpersonal Support Evaluation List (ISEL) (Cohen and Hoberman 1983) as well as the relevant subscales of the Lehman Quality of Life Interview (Lehman 1988; Sederer and Dickey 1996). To transform these separate scales into a single index, first ratings at all three time collection points were converted into *z*-scores using the means and standard deviations for that scale at baseline. Then, global index scores at each time point were calculated for each participant by averaging that participant's *z*-scores at that time point for all scales within the global index.

Global Index 2: Subjective Well-being

A global index for subjective well-being was created using the same method described for Global Index 1. Scales included in this index were the Rosenberg Self-Esteem

Scale (Rosenberg 1965), Recovery Assessment Scale (Corrigan et al. 1999), Herth Hope Scale (Herth 1991), Making Decisions Empowerment Scale (Rogers et al. 1997), a meaning of life/framework excerpt from the Life Regard Index (Battista and Almond 1973), and portions of the Lehman Brief Quality of Life Interview not already included in Global Index 1.

Global Index 3: Psychiatric Symptoms

Symptoms were assessed with two measures: the Hopkins Symptom Checklist-25 (an abbreviated version of the Hopkins Symptom Checklist) (Derogatis et al. 1974; Sederer and Dickey 1995), and the Colorado Symptom Index (Sederer and Dickey 1996; Shern et al. 1994), a 15-item scale designed to add clarity regarding psychotic-spectrum symptoms that are not well measured by general symptom inventories. This global index score was calculated as described above.

All recruitment methods, research methods, procedures and instrumentation were reviewed and approved by the Boston University Institutional Review Board.

Results

Global Index I: Social Support

Global Index I is a composite index of social support, calculated as described above from subjective and objective rating scales measuring various dimensions of social support (see Table 1 for means and standard deviations for all groups at all time points on all indices). At baseline, there was no significant difference between the treatment and the comparison groups on this index ($F = 0.97$, $df = 1$, $p = 0.33$). After 6 months, the treatment group had a significantly higher mean score on this index than the comparison group ($F = 7.91$, $df = 1$, $p = 0.006$, effect size as Cohen's $d = 0.42$), a difference that increased in size at 12 months ($F = 14.98$, $df = 1$, $p = 0.0002$, effect size = 0.56).

Global Index II: Subjective Well-being

Global Index II is a composite index of subjective well-being including measures of quality of life, hope, self-esteem, recovery, empowerment, and meaning of life. At baseline, there was no significant difference between the treatment and the comparison groups ($F = 1.05$, $df = 1$, $p = 0.31$). After 6 months, there was no significant difference between groups ($F = 0.61$, $df = 1$, $p = 0.44$), although a trend towards a higher mean for the treatment group began to emerge by 12 months ($F = 2.69$, $df = 1$, $p = 0.10$).

Table 1 Group means (and standard deviations) for Global Indices I, II, and III

Group	Global I ^a social support			Global II ^b subjective well-being			Global III ^c symptoms		
	Baseline	6 months	12 months	Baseline	6 months	12 months	Baseline	6 months	12 Months
Treatment	0.06 (0.70)	0.20 (0.70)	0.31 (0.66)	0.07 (0.85)	0.15 (0.84)	0.32 (0.82)	0.08 (0.90)	-0.10 (0.98)	-0.24 (.96)
Comparison	-0.06 (0.80)	-0.11 (0.80)	-0.12 (0.86)	-0.07 (0.83)	-0.02 (0.79)	0.07 (0.79)	0.08 (0.95)	-0.04 (0.93)	-0.09 (0.97)
Responders	n/a ^d	n/a	n/a	-0.17 (0.89)	0.33 (0.79)	0.48 (0.80)	0.28 (0.78)	-0.02 (1.15)	-0.64 (0.72)

^a Global I was calculated from subjective and objective ratings of social support using the Lehman QOL and the ISEL. Higher scores indicate more social support

^b Global II was calculated from the Rosenberg Self-Esteem Scale, Recovery Assessment Scale, Herth Hope Scale, Making Decisions Empowerment Scale, meaning of life/framework excerpt from the Life Regard Index, and excerpts from the Lehman QOL. Higher scores indicated greater subjective well-being

^c Global III was calculated from the Hopkins Symptom Checklist-25 and the Colorado Symptom Index. Higher scores indicated greater symptom severity

^d Values for the responder group are not reported for Global I because changes in Global I scores were used to determine who met criteria for inclusion as a responder

Global Index III: Psychiatric Symptoms

Global Index III is a composite index of psychiatric symptoms. At baseline, there was no significant difference between the treatment and the comparison groups ($F = 1.10$, $df = 1$, $p = 0.30$). No significant difference between groups was evident by 6 months ($F = 0.13$, $df = 1$, $p = 0.72$) or 12 months ($F = 0.19$, $df = 1$, $p = 0.66$).

Treatment Responder Analysis

Participants in the treatment condition were classified as “treatment responders” if their score for Global Index I (social support) increased by more than 1 SD relative to their score at baseline. By this criterion, 13% (10) of the treatment group were responders after 6 months, and 23% (17) after 12 months, versus 3% (2) and 4% (3) respectively for the comparison group. There were significantly more responders in the treatment group at both 6 months ($\chi^2 = 5.34$, $df = 1$, $p = 0.02$) and 12 months ($\chi^2 = 10.45$, $df = 1$, $p = 0.001$).

For those classified as responders, there was a significant increase in scores on Global Index II (subjective well-being) from baseline to 12 months ($t = 4.09$, $df = 16$, $p = 0.001$). There was also a significant decrease on Global Index III (psychiatric symptoms) from baseline to 12 months ($t = 3.65$, $df = 16$, $p = 0.002$). Item analysis indicated that the largest changes were in reduction of depressive symptoms.

Discussion

The Compeer intervention involving intentional friendships was successful at increasing social support for people with

SMI, with group differences between the treatment and comparison conditions emerging by 6 months and increasing throughout the course of the study. For the treatment group, a (non-statistically significant) trend towards increased subjective well-being also began to emerge by 12 months, but there was no observable effect on psychiatric symptoms at the group level by 12 months.

However, this picture changes dramatically when looking at those who responded to treatment (operationalized as increasing more than 1 SD on the global index of social support by 12 months). The observation that only 4% of the comparison participants exceeded this responder cutoff score lends confidence to attributing this change to the effect of the intervention. By 12 months, the responding participants of the treatment condition showed significant increases in subjective well-being as well as significant decreases in self-reported psychiatric symptoms relative to baseline. Here we find convergence with the extant literature which suggests that social supports for individuals with mental illness are associated with psychological benefits, improved functioning and quality of life and reduced psychiatric symptoms (Davidson et al. 1999; Solomon 2004).

What underlying factors might explain this pattern of results? In a recent qualitative study of Compeer (McCorkle et al. under review), both clients and volunteers indicated that the primary benefit of the Compeer intervention was the development of a strong personal friendship. However, they strongly indicated that the Compeer relationship takes time to shift from a “helper/helpee” or caregiver/client relationship into a true, mutual friendship, typically sometime in the second or even third year. This suggests that the 12-month timeframe of the present quantitative study is actually examining only the beginnings of the development of this relationship and not assessing final outcomes from a successfully completed,

per-protocol intervention. This view is supported by the percentage of treatment group participants classified as responders, which begins quite modestly with 13% at 6 months, increasing to 23% at 12 months.

This raises intriguing questions about how high the response rate might eventually rise and how long it would take to peak—questions that unfortunately are unanswerable by the present 12-month study. Put differently, if the “active ingredient” of an intentional befriending intervention is social support, it appears that, although some people may begin to respond in the first year, this ingredient is not fully active until sometime in the second year or beyond of the relationship. This suggests that full outcomes of intentional befriending programs will only be measured with a follow-up period significantly greater than 1 year.

It should be noted that when discussing this study with others, we have found that there are two very different ways of looking at the improvement we observed in social support outcomes. Some people, especially those influenced by the recovery movement, see social support as a basic aspect of human life which is all-too-often lacking in the lives of people with SMI. They consider increases on the social support index a worthy outcome in its own right, and therefore a valid dependent variable in study design. Other people say that the intervention is designed to provide social support, and therefore the social support index is merely a check of whether the independent variable or “active ingredient” has been successfully manipulated, rather like measuring serum levels of a drug.

To address these two different conceptualizations of social support, two different analytic strategies were reported in this paper: first, those who consider social support an outcome will consider the analyses of the global indices to be the primary results of this study, and note that social support did indeed increase significantly for the treatment group. Second, and alternatively, the “treatment responder” analyses consider social support to be the active ingredient, and indicate two things. First, those participants with significant increases in social support showed both significant increases in subjective well-being and significant decreases in symptoms. Second, indications from previous research that the active ingredient for intentional friendship interventions takes more than a year to fully develop (as discussed previously) were supported, with 13% of the treatment group qualifying as responders at 6 months, increasing to 23% at 12 months (compared to 3% and 4%, respectively, for the comparison group). However, lack of follow-up data past 12 months prevents definitive conclusions about how long it takes to reach a maximum response rate or what that rate might be.

There are several limitations in this study. As just noted, the absence of follow-up beyond 12 months limits conclusions about the percentage of clients who will respond by the end of

the intervention and about the strength of the effect on social support, well-being, and symptoms. No systematic data were gathered about volunteers, preventing examination of characteristics of volunteer/client matches or of volunteers themselves that might affect the relative success of the intervention. All data were self-reported by the clients, so there are no independent ratings of match success or verification of client outcomes. In addition, the quasi-experimental nature of the research design and the absence of random assignment could have introduced biases into the findings.

One additional limitation of the study is the very large proportion of white females in the study, potentially limiting the generalizability of the findings to males who were non-white. Comparing our cohort to state and county level data available, we find that the percentage of females served in community support programs is approximately 45% at the state level according to the New York State 2000 Chartbook (New York State Office of Mental Health 2000) and 48–54% at the county level depending on the county data we examined (this study was conducted in three counties; 2005 data drawn from New York State Office of Mental Health, nd).

This suggested to us that the intervention was potentially of less interest to males than to females. These same data sources also suggest that that our Compeer sample may have included slightly more Caucasian individuals although it depends on which county averages we examine (77–94% by county for individuals in the 45–64 year age range versus 81% of Caucasians in our sample).

Communication with the administrators of Compeer suggested the possibility of two phenomena with respect to the over representation of females: first, fewer males appear to be interested in receiving this intentional friendship intervention resulting in fewer referrals of males to the organization (Budny, Personal Communications, October 17, 2007; October 22, 2007). In fact, Compeer is currently in the process of developing procedures and resources to improve their recruitment of males. Secondly, mostly females tend to volunteer to provide the intentional friendship intervention and since same-gender matches are routine, this prevents large numbers of males from being served by the organization. This tendency of females with psychiatric disabilities to seek out mental health services is fairly widespread (c.f., US DHHS 1999, *Mental Health: A Report of the Surgeon General*), but does appear more pronounced in this study. Thus, we are cautious in extending our findings to males who are non-white.

Conclusions

The Compeer model of intentional friendship as an adjunct to treatment-as-usual appears to be an effective way of

increasing social support for people with SMI through the use of community volunteers. Results were consistent with a qualitative study indicating that Compeer relationships take well over 1 year to fully develop, and therefore this study tracked the early development of new intentional friendships rather than studied final outcomes of completed interventions. Even so, for those who responded within the timeframe of this study, subjective well-being increased and psychiatric symptoms (especially depression) decreased.

References

- Angell, B. (2003). Contexts of social relationship development among assertive community treatment clients. *Mental Health Services Research, 5*(1), 13–25.
- Baker, F., Jodrey, D., Intagliata, J., & Straus, H. (1993). Community support services and functioning of the seriously mentally ill. *Community Mental Health Journal, 29*(4), 321–331.
- Battista, J., & Almond, R. (1973). The development of meaning in life. *Psychiatry. Journal for the Study of Interpersonal Processes, 36*(4), 409–427.
- Bengtsson-Tops, A., & Hansson, L. (2001). Quantitative and qualitative aspects of the social network in schizophrenic patients living in the community. Relationship to sociodemographic characteristics and clinical factors and subjective quality of life. *International Journal of Social Psychiatry, 47*(3), 67–77.
- Borge, L., Martinsen, E. W., Ruud, T., Watne, O., & Friis, S. (1999). Quality of life, loneliness, and social contact among long-term psychiatric patients. *Psychiatric Services, 50*(1), 81–84.
- Buchanan, J. (1995). Social support and schizophrenia: A review of the literature. *Archives of Psychiatric Nursing, 9*(2), 68–76.
- Campbell, D., & Stanley, J. (1963). *Experimental and quasi-experimental designs for research*. Chicago: Rand-McNally.
- Caron, J., Tempier, R., Mercier, C., & Leouffre, P. (1998). Components of social support and quality of life in severely mentally ill, low income individuals and a general population group. *Community Mental Health Journal, 34*(5), 459–475.
- Cohen, S., & Hoberman, H. M. (1983). Positive events and social supports as buffers of life change stress. *Journal of Applied Social Psychology, 13*(2), 99–125.
- Cohen, S., Mermelstein, R., Kamarck, T. E., & Hoberman, H. (1985). Measuring the functional components of social support. In I. G. Sarason & B. R. Sarason (Eds.), *Social support: Theory, research, and applications* (pp. 73–94). The Hague, The Netherlands: Martinus Nijhoff.
- Corrigan, P. W., Calabrese, J. D., Diwan, S. E., Keogh, C. B., Keck, L., & Mussey, C. (2002). Some recovery processes in mutual-help groups for persons with mental illness; I: Qualitative analysis of program materials and testimonies. *Community Mental Health Journal, 38*, 287–301.
- Corrigan, P. W., Gifford, D., Rashid, F., Leary, M., & Okeke, I. (1999). Recovery as a psychological construct. *Community Mental Health Journal, 35*(3), 231–239.
- Corrigan, P. W., & Phelan, S. M. (2004). Social support and recovery in people with serious mental illnesses. *Community Mental Health Journal, 40*(6), 513–523.
- Crotty, P., & Kulys, R. (1985). Social support networks: The views of schizophrenic clients and their significant others. *Social Work, 30*(4), 301–309.
- Dailey, W. F., Chinman, M. J., Davidson, L., Garner, L., Vavrousek-Jakuba, E., Essock, S., et al. (2000). How are we doing? A statewide survey of community adjustment among people with serious mental illness receiving intensive outpatient services. *Community Mental Health Journal, 36*(4), 363–382.
- Davidson, L., Chinman, M., Kloos, B., Weingarten, R., Stayner, D., & Tebes, J. K. (1999). Peer support among individuals with severe mental illness: A review of the evidence. *Clinical Psychology: Science and Practice, 6*(2), 165–187.
- Davidson, L., Haglund, K. E., Stayner, D. A., Rakfeldt, J., Chinman, M. J., & Kraemer Tebes, J. (2001). ‘It was just realizing...that life isn’t one big horror’: A qualitative study of supported socialization. *Psychiatric Rehabilitation Journal, 24*(3), 275–292.
- Davidson, L., Shahar, G., Stayner, D. A., Chinman, M. J., Rakfeldt, J., & Tebes, J. K. (2004). Supported socialization for people with psychiatric disabilities: Lessons from a randomized controlled trial. *Journal of Community Psychology, 32*(4), 453–477.
- Davidson, L., & Stayner, D. (1997). Loss, loneliness, and the desire for love: Perspectives on the social lives of people with schizophrenia. *Psychiatric Rehabilitation Journal, 20*(3), 3–12.
- Davidson, L., Stayner, D., & Haglund, K. E. (1998). Phenomenological perspectives on the social functioning of people with schizophrenia. In K. T. Mueser & N. Tarrier (Eds.), *Handbook of social functioning in schizophrenia* (pp. 97–120). Needham Heights, MA, US: Allyn & Bacon.
- Deegan, P. (1990). Spirit breaking: When the helping professions hurt. *Humanistic Psychologist, 18*(3), 301–313.
- Derogatis, L. R., Lipman, R. S., Ricketts, K., Uhlenhuth, E. H., & Covi, L. (1974). The Hopkins symptom checklist (HSCL): A self-report symptom inventory. *Behavioral Science, 19*, 1–14.
- DiMatteo, M. R. (2004). Social support and patient adherence to medical treatment: A meta-analysis. *Health Psychology, 23*(2), 207–218.
- Dunn, E. C., McCorkle, B. H., Wan, Y. M., & Gagne, C. (2006). The making of friendships: Compeers talk about their experiences in the program. In B. W. Skirboll, L. Bennett, & M. Klemens (Eds.), *Compeer: Recovery through the healing power of friends* (pp. 97–120). Rochester, NY: University of Rochester Press.
- Furukawa, T. A., Harai, H., Hirai, T., Kitamura, T., & Takahashi, K. (1999). Social support questionnaire among psychiatric patients with various diagnoses and normal controls. *Social Psychiatry and Psychiatric Epidemiology, 34*(4), 213–222.
- Goldberg, R. W., Rollins, A. L., & Lehman, A. F. (2003). Social network correlates among people with psychiatric disabilities. *Psychiatric Rehabilitation Journal, 26*(4), 393–402.
- Green, G., Hayes, C., Dickinson, D., Whittaker, A., & Gilheany, B. (2002). The role and impact of social relationships upon well-being reported by mental health service users: A qualitative study. *Journal of Mental Health (UK), 11*(5), 565–579.
- Harris, M., & Bergman, H. C. (1985). Networking with young adult chronic patients. *Psychosocial Rehabilitation Journal, 8*(3), 28–35.
- Harris, T., Brown, G. W., & Robinson, R. (1999). Befriending as an intervention for chronic depression among women in an inner city. I: Randomised controlled trial. *British Journal of Psychiatry, 174*, 219–224.
- Heaney, C. A., & Israel, B. A. (1997). Social networks and social support. In K. Glanz, F. M. Lewis, & B. K. Rimer (Eds.), *Health behavior and health education*. San Francisco, CA: Jossey-Bass Inc.
- Herth, K. (1991). Development and refinement of an instrument to measure hope. *Scholarly Inquiry for Nursing Practice, 5*(1), 39–51.
- Holahan, C. J., Moos, R. H., & Bonin, L. (1997). Social support, coping, and psychological adjustment: A resource model. In G. R. Pierce & B. Lakey (Eds.), *Sourcebook of social support and personality. The Plenum series in social/clinical psychology* (pp. 169–186). New York, NY, US: Plenum Press.

- Leavy, R. L. (1983). Social support and psychological disorder: A review. *Journal of Community Psychology, 11*(1), 3–21.
- Lehman, A. F. (1988). A quality of life interview for the chronically mentally ill. *Evaluation and Program Planning, 11*, 51–62.
- Lieberman, A. A., Gowdy, E. A., & Knutson, L. C. (1991). The mental health outreach project: A case study in self-help. *Psychosocial Rehabilitation Journal, 14*, 100–104.
- McCorkle, B. H., Dunn, E. C., Wan, Y. M., & Gagne, C. (under review). Compeer friends: A qualitative study of a volunteer friendship program for people with serious mental illness.
- McCorkle, B. H., Rogers, E. S., Dunn, E. C., Wan, Y. M., & Lyass, A. (2006). A mixed methods study of the benefits of Compeer services. In B. W. Skirboll, L. Bennett, & M. Klemens (Eds.), *Compeer: Recovery through the healing power of friends*. Rochester, NY: University of Rochester Press.
- McGrew, J. H., Bond, G. R., Dietzen, L., McKasson, M., & Miller, L. D. (1995). A multisite study of client outcomes in assertive community treatment. *Psychiatric Services, 46*(7), 696–701.
- Meeks, S., & Murrell, S. S. (1994). Social networks of clients with severe mental illness. *Schizophrenia Bulletin, 20*(2), 399–406.
- Mowbray, C. T., & Tan, C. (1993). Consumer-operated drop-in centers: Evaluation of operations and impact. *Journal of Mental Health Administration, 20*(1), 8–19.
- Mueser, K. T., & Tarrier, N. (1998). *Handbook of social functioning in schizophrenia*. Needham Heights, MA: Allyn & Bacon.
- New York State Office of Mental Health. (nd). *2005 patient characteristics survey*. From <http://www.omh.state.ny.us/omhweb/pcs/survey05/>. Retrieved 25 October 2007.
- New York State Office of Mental Health. (2000). *New York State chartbook of mental health information*. From http://www.omh.state.ny.us/omhweb/chartbook/PDF_files/Complete.pdf. Retrieved 25 October 2007.
- Rogers, E. S., Anthony, W., & Lyass, A. (2004). The nature and dimensions of social support among individuals with severe mental illnesses. *Community Mental Health Journal, 40*(5), 437–450.
- Rogers, E. S., Chamberlin, J., Ellison, M. L., & Crean, T. (1997). A consumer-constructed scale to measure empowerment among users of mental health services. *Psychiatric Services, 48*(8), 1042–1047.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Sarason, B. R., Sarason, I. G., & Gurung, R. A. R. (1997). Close personal relationships and health outcomes: A key to the role of social support. In S. Duck (Ed.), *Handbook of personal relationships: Theory, research, and interventions* (2nd ed., pp. 547–573). Hoboken, NJ: John Wiley & Sons.
- Schwarzer, R., & Leppin, A. (1989). Social support and health: A meta-analysis. *Psychology and Health, 3*, 1–15.
- Sederer, L. I., & Dickey, B. (1995). Acute and chronic psychiatric care: Establishing boundaries. *Psychiatric Quarterly, 66*(3), 263–274.
- Sederer, L. I., & Dickey, B. (Eds.). (1996). *Outcomes assessment in clinical practice*. Baltimore, MD: Williams & Wilkins.
- Shern, D. L., Wilson, N. Z., Coen, A. S., Patrick, D. C., et al. (1994). Client outcomes: II. Longitudinal client data from the Colorado treatment outcome study. *Milbank Quarterly, 72*(1), 123–148.
- Skirboll, B. (1994). The Compeer model: Client rehabilitation and economic benefits. *Psychosocial Rehabilitation Journal, 18*(2), 89–94.
- Skirboll, B. W., Bennett, L., & Klemens, M. (Eds.). (2006). *Compeer: Recovery through the healing power of friends*. Rochester, NY: University of Rochester Press.
- Skirboll, B. W., & Pavelsky, P. K. (1984). The Compeer program: Volunteers as friends of the mentally ill. *Hospital & Community Psychiatry, 35*(9), 939–939.
- Solomon, P. (2004). Peer support/peer provided services: Underlying processes, benefits, and critical ingredients. *Psychiatric Rehabilitation Journal, 27*(4), 392–401.
- Sousa, S., & Frizzell, C. (2005). The power of friendship: The Compeer program at the University of Massachusetts Dartmouth. *Journal of Psychosocial Nursing and Mental Health Services, 43*(12), 18–25.
- Spaniol, L., Gagne, C., & Koehler, M. (1999). Recovery from serious mental illness: What it is and how to support people in their recovery. In: R. P. Marinelli & A. E. Dell Orto (Eds.), *The psychological and social impact of disability* (4th ed.). New York: Springer Publishing.
- Strauss, J. S., & Carpenter, W. T. (1977). Prediction of outcome in schizophrenia III: Five-year outcome and its predictors. *Archives of General Psychiatry, 34*(2), 159–163.
- Thornicroft, G., & Breakey, W. R. (1991). The COSTAR programme. I: Improving social networks of the long-term mentally ill. *British Journal of Psychiatry, 159*, 245–249.
- Tolsdorf, C. C. (1976). Social networks, support and coping: An exploratory study. *Family Process, 15*, 407.
- US Department of Health, Human Services. (1999). *Mental health: A report of the Surgeon General*. Rockville, MD: Author; Washington, DC: For sale by the US G.P.O., Supt. of Docs.
- Walsh, J., & Connelly, P. R. (1996). Supportive behaviors in natural support networks of people with serious mental illness. *Health and Social Work, 21*(4), 296–303.
- Wilson, M. E., Flanagan, S., & Rynders, C. (1999). The FRIENDS program: A peer support group model for individuals with a psychiatric disability. *Psychiatric Rehabilitation Journal, 22*(3), 239–247.