The Other 23 Hours: A Qualitative Study of Fitness Provider Perspectives on Social Support for Health Promotion for Adults with Mental Illness

Kelly Aschbrenner, Kim Mueser, Stephen Bartels, Elizabeth Carpenter-Song, Sarah Pratt, Laura Barre, John Naslund, and Allison Kinney

Current efforts to reduce the increased risk of premature death from preventable cardiovascular disease among adults with serious mental illness (SMI) through lifestyle change have had limited success. Engaging informal support systems to promote healthy behaviors in everyday life may increase the effectiveness of health promotion interventions targeting this at-risk population. In-depth semistructured interviews were conducted with 10 fitness trainers serving adults with SMI in a health promotion program at community mental health centers to explore their perspectives on the potential of enlisting support from significant others for health behavior change. Trainers reported that the majority of participants had a relative or significant other who influenced their health behaviors, and they saw potential value in involving them in efforts to improve health outcomes by extending support into participants' daily lives. They did not feel qualified to work with families of individuals with mental illness, but they were willing to partner with providers who had experience in this area. Social workers who practice with families could play a critical role on health promotion teams addressing cardiovascular risk in adults with SMI by using their skills and experiences to engage families in supporting a relative through the process of health behavior change.

KEY WORDS: *families; health promotion; intervention; serious mental illness; social support*

People with a serious mental illness (SMI), such as schizophrenia, schizoaffective disorder, bipolar disorder, and severe mood disorder, have an estimated 25- to 30-year reduced life expectancy, in large part due to cardiovascular disease (Colton & Manderscheid, 2006). In addition to the very high rates of cigarette smoking in people with SMI compared with the general population (45 percent to 90 percent versus 20 percent) (Centers for Disease Control and Prevention [CDC], 2009; Kotov, Guey, Bromet, & Schwartz, 2010), people with SMI have a prevalence of obesity that is nearly twice that of the general population (Scott & Happell, 2011). Consequently, individuals with SMI suffer disproportionately from weight-related health conditions, including heightened risk of diabetes mellitus, hypertension, and certain cancers (Bresee, Majumdar, Patten, & Johnson, 2010; McEvoy et al., 2005).

Multiple factors contribute to obesity in people with SMI. Physical inactivity and unhealthy diets are major causes of obesity in this vulnerable pop-

ulation (Daumit et al., 2008; Mitchell & Malone, 2006). In addition, many psychotropic medications, often necessary for controlling debilitating psychiatric symptoms, cause weight gain in part through rapid increases in appetite and consequently a high caloric intake (Allison et al., 1999; Lieberman et al., 2005). Healthy lifestyle interventions designed to modify diet and eating behaviors and increase physical activity represent one of the greatest opportunities to reduce cardiovascular risk. Even a 5 percent weight loss for overweight or obese individuals produces clinically significant health benefits (Donnelly et al., 2009), and improved cardiorespiratory fitness is associated with reduced mortality risk, independent of weight loss (Ross & Janiszewski, 2008). Numerous studies of dietary and exercise lifestyle interventions for the general population report significant benefits to cardiovascular health (Angermayr, Melchart, & Linde, 2010; Cole, Smith, Hart, & Cupples, 2010). Unfortunately, this strategy has yielded disappointing results

in individuals with SMI. Systematic reviews of over 24 studies evaluating lifestyle interventions for obese people with SMI have concluded that despite findings of statistically significant weight loss, all but two interventions have failed to achieve clinically significant mean weight loss of 5 percent of body weight or more (Bartels & Desilets, 2012; Verhaeghe, De Maeseneer, Maes, Van Heeringen, & Annemans, 2011).

One key to improving the effectiveness of healthy lifestyle interventions for people with SMI may be to broaden the focus from the individual to the social environmental context in which most health behaviors take place. Social-ecological models of health promotion recognize that decisions about engaging in health-promoting behaviors are largely influenced by a person's social network (Breslow, 1996). Research on the general population shows that mobilizing support from family members and friends can enhance the effectiveness of interventions addressing obesity (Gorin et al., 2005; Kumanyika & Economos, 2011; Wing & Jeffrey, 1999). However, the role of social supports in increasing the effectiveness of lifestyle interventions in people with SMI has received little attention. Social workers are experts in assessing the social and environmental influences on individual behavior, and clinicians who practice with individuals with SMI and their families could play a key role in addressing psychosocial aspects of health behavior change to potentially increase the potency of lifestyle interventions for this vulnerable population.

Our research team has conducted a series of studies of the In SHAPE healthy lifestyle intervention aimed at increasing physical fitness and weight loss in adults with SMI (Bartels et al., 2013, 2014; Van Citters et al., 2010). In SHAPE is embedded within public mental health centers and consists of a free fitness-club membership and sessions with a health mentor who has a basic certification as a fitness trainer and receives ongoing clinical supervision to develop skills to address mental health challenges that are barriers to fitness promotion. In addition to coaching individuals in basic exercise, strength training, and principles of healthy eating, health mentors develop an understanding of participants' overall lifestyles to help motivate them to make desired behavior changes. Over time health mentors build trust and establish personal rapport with participants who increasingly share information about how their

personal lives and choices influence their health behaviors (for example, Shiner, Whitley, Van Citters, Pratt, & Bartels, 2008).

To date, the In SHAPE model has focused on the health mentor as the primary motivator of participants' health behavior change without a systematic approach to engaging family members (defined in our research as someone who is connected biologically or emotionally to the participant with whom they have regular contact) who could potentially support dietary and exercise changes in their natural contexts. A prior quantitative survey of social contact among In SHAPE participants indicated that 80 percent of participants had regular face-to-face contact (defined as twice monthly) with a family member or close friend (Aschbrenner, Mueser, Bartels, & Pratt, 2013). In the present study, we sought to explore the perspectives of personal fitness trainers (In SHAPE health mentors) who deliver a healthy lifestyle intervention to overweight and obese individuals with SMI in community mental health centers as a preliminary step in designing approaches to facilitating social support for health behavior change in this population. Through in-depth qualitative interviews, we explored health mentors' perspectives on the ways in which family members influence participants' eating and exercise behaviors and the potential benefits and challenges of family involvement in the In SHAPE program. We also elicited ideas for ways to increase social support for health behavior change and explored health mentors' thoughts about who should reach out to involve family members, including other types of service providers.

METHOD

Participants

We recruited as study participants 10 full-time health mentors who were delivering In SHAPE across five community mental health agencies, including one in Massachusetts and four in New Hampshire. The sites were selected based on their participation in ongoing studies of the In SHAPE program conducted by our research team. At the time of the study, we interviewed all of the full-time health mentors delivering In SHAPE in Massachusetts and New Hampshire. The health mentors had one to five years of experience delivering the In SHAPE program. Four of the 10 mentors had prior experience working in the field of mental health, and the majority ($n=8$) of mentors reported some type of formal experience working in the area of

physical fitness or health education (for example, aerobics instructor, personal trainer, athletic coach).

Health mentors provided In SHAPE to people who met the following criteria: age 21 years or older; diagnosis of major depression, bipolar disorder, schizoaffective disorder, or schizophrenia (based on the Structured Clinical Interview for DSM-IV [American Psychiatric Association, 1994]); poor fitness as indicated by body mass index greater than 25 or failure to adhere to the U.S. Department of Health and Human Services (2008) physical activity guidelines for adults (that is, at least 2.5 hours per week of moderate or 75 minutes per week of vigorous activity in more than one session). Clients were referred to In SHAPE by their psychiatrists, clinicians, and case managers as part of clinical treatment plans, or they were self-referred in response to posters and brochures. Prior to enrollment, clients obtained medical clearance from their primary care provider. A usual caseload for a health mentor is 25 to 30 participants.

Qualitative Interview

Face-to-face, semistructured interviews were conducted with 10 In SHAPE health mentors. The interviews covered three major domains: (1) the influence of family and significant others on participants' health behaviors; (2) the potential benefits and challenges of involving family members in supporting participants' health goals in the program; and (3) ideas for increasing social support from family members for health promotion programs, including the type of information and skills families would benefit from learning and who should reach out to families. Family was defined as two people who are connected biologically or emotionally; this recognizes that many adults with SMI have significant long-term relationships with non-family members. We used an interview topic guide that followed the "funnel structure" described by Krueger (1994). Broad questions were asked at the beginning, with the interviewer gradually proceeding to more specific questions within each domain. Sessions lasted from 60 to 90 minutes, and participants were given a \$10 restaurant gift certificate for completing the interviews. All interviews were audiotaped and transcribed.

Procedures

Data were collected during the spring and fall of 2012. Researchers communicated with In SHAPE

program directors at the community mental health agencies to invite the health mentors to meet with a member of the research team to learn about the study. After describing the study, verbal informed consent was obtained from all health mentors. The qualitative interviews were then scheduled with each mentor. All 10 mentors who were invited agreed to participate in the study. The research protocol was reviewed and approved by four institutional review boards.

Data Analysis

A thematic analysis was used to analyze the qualitative data, which involved examination of the text by generating initial codes and grouping codes into broader themes (Whitley & Crawford, 2005). A theme captures something important about the data in relation to the research question and represents some level of patterned responses within the data set (Miles & Huberman, 1994). The "keyness" of a theme is not necessarily dependent on quantifiable measures, but rather it is judged in terms of whether it captures something important in relation to the overall research question. Transcripts of the audio-recorded interviews were coded by the primary author and a master's level research assistant. The researchers constructed a preliminary codebook linked to the key research questions explored in the interview guide. Both coders independently examined the data before reviewing each other's coding scheme. The codes were combined to form overarching themes. After discussion, the coders agreed on the prominence of the themes within each domain listed in the results.

RESULTS

The health mentors reported that the majority of participants in the In SHAPE program had a relative or significant other who influenced their health behaviors. Mentors anticipated several challenges to involving family members in the program, but they also believed that family participation would ultimately improve participants' health outcomes. Suggestions were made about how to increase social support for health behavior change from family members, including what they might benefit most from learning and who should reach out to families. Table 1 provides a summary of each theme developed during the analytic process, the domain to which it is related, and a definition of each theme.

Table 1: Qualitative Domains, Related Themes, and Definitions of Each Theme

Domain	Themes	Definition
Social influences on health behaviors	Emotional support	Empathy, validation, praise, and encouragement for healthy behaviors
	Practical support	Tangible assistance that facilitates health behavior change
	Mutual support	Participants and family members support each other's health goals
	Unhealthy social environments	Family members engage in poor health behaviors
Potential benefits and challenges of family involvement	Model healthy behaviors	Family members could model healthy eating and exercise behaviors
	Positive reinforcement	Family members could reinforce healthy behaviors in everyday life
	Encourage behaviors	Family members could encourage participants to stick with health goals and healthy behavior changes
	Readiness to change	Discordance in readiness to change health behaviors between participant and family members
Strategies for increasing support	Potential negative effects	Participant's loss of personal privacy and increased family burden
	Increase family knowledge	Basic information about mental illness and health behavior change
	Improve communication	Teach family members more effective ways to communicate support for health goals
	Collective behavior change	Identify shared health goals and support collective change
Provider facilitation of social support	Collaborative effort	Partner with providers with more skills and experience working with families of people with mental illness

Influences on Health Behaviors

Health mentors reported that participants were encouraged to pursue their health goals when family members recognized their efforts to exercise more and lose weight and when they praised or celebrated progress toward their health goals. One mentor described the effect of a husband praising his wife's participation in the program during a meeting with the mentor:

The way he complimented her in front of me, saying, "I'm just so proud of you for sticking with this program, and I've really seen improvements in your mood," was really nice for her to hear, and me.

The health mentors emphasized that transportation and financial support from family was essential to helping many participants access fitness facilities and grocery stores. One health mentor explained,

I have a participant whose father brings her to the gym whenever she has an appointment. He's retired and whenever she wants to work out he will take her.

Another mentor described how relatives provided financial support for a participant's fitness goals:

One of our participants lives with his aunt and uncle who were paying for his gym membership

once the grant ended. The participant did well in the program and his aunt noticed his weight loss and healthier eating habits. She offered to continue paying for the membership if he went at least three times per week. That incentive kept him going.

Overall, the health mentors felt that participants benefited most when family members either modeled healthy behaviors or joined them in changing their eating and exercise behaviors. One mentor explained,

I work with a young woman who is severely obese. After sharing a number of meals with her brother, who is a vegetarian, she started eating less red meat and more fish. She began changing other eating habits, which helped her relationship with him, and they bonded together through this. They began doing other healthy things together.

One mentor described how making health changes together facilitated health behavior change:

I have a participant who is trying to lose weight along with her adult children. She has a son with type II diabetes and two other children who are overweight. They were walking together before the In SHAPE program, but now they are really teaming up to make dietary changes to achieve their weight loss goals.

Social support seemed to boost health behavior change, but health mentors also indicated that the unhealthy behaviors of others made it more difficult for participants to make desired changes. One mentor commented,

Participants tell me that they're trying to cut back on soda, but someone's constantly bringing home soda, or they're trying to cut back on smoking but their friends want them to come outside for a cigarette. They don't want to disappoint or [to be] one not joining in with others.

Health mentors reported that participants' social interactions often revolved around eating at fast food or full-service restaurants where they were prone to consuming more calories, sugar, and fats. One mentor explained,

Although the family member knows the participant is in this program, they don't always make the healthiest food choices, especially if they are eating out at fast food restaurants. It's difficult for participants to eat healthy when they're out to dinner with friends who are eating unhealthy.

Potential Benefits and Challenges of Family Involvement in In SHAPE

Health mentors saw potential value in involving families in supporting participants' efforts to change their health behaviors. One mentor commented,

Meaningful relationships are what really help people flourish and thrive, and the people closest to you should be building you up, not bringing you down. If there were a way for us to positively impact participants' close personal relationships to get them on board with the program, we would see In SHAPE participants be that much more successful.

Another mentor described the potential value in social support that could increase participants' motivation throughout the week:

They leave meetings with us feeling good and they are positive and focused, but then they get derailed at home. If they had people around them influencing them in positive ways and supporting them in achieving their health goals, I think we would see a lot more success.

Although optimistic about the potential benefits of enlisting greater support for participants' health behavior change, health mentors anticipated two major challenges. First, they noted that the participant and family could differ in their desire to change health behaviors, which could pose problems in creating a social environment that supports healthy eating, exercise, and smoking cessation. One mentor commented,

Participants are at a stage of readiness to make these behavior changes and they've found a professional who is positive and committed to helping them reach their goals, but that doesn't mean that their significant other or family member is also committed to making health behavior changes. It is much harder to make an impact without everyone on the same page.

Mentors also thought that some participants might be concerned about the negative effects of family member involvement, particularly about loss of privacy and increased burden on family members.

Increasing Family Support for Healthy Lifestyle Behaviors

Health mentors suggested three primary ways to increase family support for healthy lifestyle behaviors: (1) increase knowledge, (2) improve communication, and (3) support collective health goals. Health mentors stressed that educating family members about the In SHAPE program goals and activities was necessary to increasing support for it:

Laying the foundation by going over the program and how it works would increase the support participants are getting from family members.

In addition to information about the program, health mentors emphasized that family members need to understand the rationale and nature of health behavior changes in the In SHAPE program:

I think it gets back to a basic understanding of what it means to change one's diet. What does it mean to eat low fat, and how to change a portion size . . . understanding why it is important to do different types of exercises and see the connection between day-to-day activity and the In SHAPE program.

Mentors also suggested that many family members would benefit from information about mental illness and how it can affect efforts to change health behaviors. One mentor explained,

It would be helpful for families to understand how mental health symptoms can get in the way of exercising and how psychiatric medications can cause weight gain.

Health mentors also suggested that social support for health behavior change could be increased by improving family communication skills. Mentors explained that they had observed well-intended family members trying to express support for participants' diet and exercise goals in ways that were interpreted by participants as criticism instead of encouragement. This often led to frustrated feelings in participants and family members alike and sometimes stymied participants' motivation to change. Health mentors suggested that family members would benefit from learning more effective ways to communicate support for participants' health goals and behaviors, including practicing attentive listening, managing stressful interactions, and using emotional awareness during communication with the participants.

Finally, health mentors suggested that setting mutual health goals with a family member or significant other could create a natural support system to help participants reach their health goals. One mentor commented,

If a participant has a family member or friend to exercise with them, they have someone besides me to support their health behaviors at home. I think it could be really helpful if their supports are also trying to be healthy.

Another mentor commented on the promise of sustaining health behavior change when families make changes together:

When you see a family member or loved one doing the same thing [eating healthy or exercising], you cheerlead for each other, which in turn builds a greater bond, and then you are holding each other accountable for health goals. If participants and family members have a good relationship, then you hope that they'll carry on with the gains they've made once the program has ended.

Facilitating Family Support

The majority of health mentors were open to the possibility of working with families to increase social support for health behavior change within the context of the In SHAPE program, either by providing services themselves or by partnering with others who are more experienced in working with families. Several mentors stressed the need for additional training to develop the basic skills and tools needed for working successfully with families. One mentor commented,

I think that working with family members is beyond the scope of the health mentor's training, especially if they have not come from mental health backgrounds. . . . There are some things I would be comfortable doing, but other things I would need help with, such as how to deal with difficult family members or significant others.

Some health mentors preferred to collaborate with providers who had experience working with consumers and families as part of their role at the agency. For example, case managers and clinical social workers who engage families in the participants' mental health treatment were identified as potential collaborators in involving family in the In SHAPE program. Another mentor commented,

Interacting with family members is beyond the scope of the training and skill set of a typical health mentor, especially if they come from a fitness background. I think that on basic levels health mentors could be involved with families, for example, home visits focused on family cooking; that is totally within our scope of practice. But, there are other issues that come up with family dynamics that have to do with mental health problems. That's when I think the case manager would need to get involved.

DISCUSSION

In qualitative interviews, fitness trainers reported that most participants in a healthy lifestyle program had relatives or significant others who influenced their health behaviors, either for better or worse. They believed that reaching out to and actively engaging these "natural supports" could facilitate the ability of participants to achieve their health behavior goals. These findings are comparable to

findings from our previous qualitative interviews with In SHAPE participants indicating the benefits of emotional, practical, and mutual support from family and significant others and the challenges of unhealthy social environments to achieving their health goals (Aschbrenner, Bartels, Mueser, Carpenter-Song, & Kinney, 2012), and they are consistent with studies indicating that various types of social support from family and friends appear to be a key factor in facilitating health behavior change among people without mental illness (Kiernan et al., 2012; Verheijden, Bakx, van Weel, Koelen, & van Staveren, 2005). Similar to In SHAPE participants, health mentors anticipated potential benefits from involving the participants' family members, who could extend their reach by providing support and accountability for health behavior change in natural environments (Aschbrenner, Carpenter-Song, et al., 2013). These consistent findings regarding social facilitators of health behavior change underscore the importance of enlisting support from family and significant others for lifestyle change in people with SMI.

Home environment-focused weight loss programs for children and adult populations attempt to modify directly physical and social home environments to promote initial and long-term weight loss outcomes. Drawing on social-ecological models of health behavior change, comprehensive home environment-focused weight loss programs for the general population address multiple factors within the home environment while teaching participants core behavioral skills (Gorin et al., 2005). Targeting the social environment has produced better initial and long-term weight loss outcomes than standard behavioral weight loss treatment in the general adult population (Gorin et al., 2013; Wing & Jeffrey, 1999). However, despite these promising findings, scant attention has been paid to the role of the family and home environment in health promotion for obese and overweight individuals with SMI.

The present study makes a further contribution to the research by eliciting health mentors' ideas about how to most effectively increase social support for participation in health promotion programs for adults with SMI. First, health mentors suggested that increasing family knowledge about the In SHAPE program and health behavior change in adults with SMI and improving family communication skills might increase support for participants' health goals. At a basic level, one could intervene by incorporat-

ing a series of brief educationally oriented sessions designed to motivate family support for healthy behaviors into lifestyle interventions for people with SMI. An overview of basic information about obesity in adults with SMI, including the fact that metabolic effects of psychiatric medications make weight loss especially challenging even when the adults are engaged in exercise and dietary interventions, could potentially lead to greater encouragement for fitness goals and more supportive responses from family members to weight loss challenges and setbacks.

Education alone will likely be necessary but not sufficient to establish a supportive environment for health behavior change for many individuals and families. Research on the prevalence of health behaviors in social networks indicates that a person's circle of family and friends has a significant influence on smoking and obesity (Christakis & Fowler, 2007, 2008). Similarly, research on behavioral weight management interventions for people without mental illness indicate that social support is most effective when family members and significant others join participants in making behavior changes and are themselves successful at losing weight (Gorin et al., 2013; Kumanyika et al., 2009). In line with this research, the health mentors suggested that some participants may benefit from setting collective health goals with a significant other to create an accountability system for health goals in daily life.

The health mentors interviewed in our study played an important role in helping the participants achieve their fitness and health goals. However, successfully addressing the problems of obesity and sedentary lifestyle in people with SMI will likely require a multipronged, interdisciplinary approach to health behavior change that endeavors to increase social support for such change beyond the role of the mentor. Although the majority of health mentors thought that working with families and other natural supports could increase their effectiveness in facilitating participants' health behavior change, they also felt that this would require additional training or active collaboration with other providers who have more experience collaborating with individuals with mental illness and their families. By working within the framework of the determinants of health, social workers make the necessary links between the physical, social, and economic impacts of health. In a collaborative model, fitness trainers could continue to use their expertise to help participants set and

pursue cardiovascular fitness goals, and social workers could take the lead on engaging participants' significant others and facilitating a shared decision-making process aimed at choosing how they want to support the participants in achieving their fitness goals.

The strength of this study is the in-depth nature of the qualitative interviews with fitness providers who are delivering a healthy lifestyle intervention to adults with SMI. We interviewed each of the 10 full-time health mentors providing the In SHAPE healthy lifestyle intervention in New Hampshire and Massachusetts at the time of the study. Despite the relatively small sample size, the in-depth qualitative interview data collected were sufficient to identify important influences of family and significant others on participants' health behaviors as perceived by health mentors. The overall sample size ($N=10$) is consistent with exploratory qualitative methods (Miles & Huberman, 1994) and the intent and scope of a pilot study aimed at determining feasibility and achieving preliminary descriptive findings (Leon, Davis, & Kraemer, 2011).

CONCLUSION

Current efforts to reduce the increased risk of premature death from preventable cardiovascular disease among adults with SMI through lifestyle change have had limited success. Involving family members and other natural supports in facilitating behavior change in these individuals could increase the effectiveness of healthy lifestyle programs. Fitness providers reported that most participants had significant others who influenced their health behaviors, and they saw value in systematically working with them to increase their social support. Although they did not feel qualified to address some of the unique challenges of working with families of participants with mental illness, they were willing to partner with providers who had experience in this area. Social workers who practice with families could play a critical role on health promotion teams addressing cardiovascular risk in adults with SMI by using their skills and experiences to engage families in supporting their relative through the process of health behavior change. **HSW**

REFERENCES

Allison, D. B., Mentore, J. L., Heo, M., Chandler, L. P., Cappelleri, J. C., Infante, M. C., & Weiden, P. J. (1999). Antipsychotic-induced weight gain: A

comprehensive research synthesis. *American Journal of Psychiatry*, 156, 1686–1696.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Arlington, VA: Author.

Angermayr, L., Melchart, D., & Linde, K. (2010). Multifactorial lifestyle interventions in the primary and secondary prevention of cardiovascular disease and type 2 diabetes mellitus: A systematic review of randomized controlled trials. *Annals of Behavioral Medicine*, 40, 49–64.

Aschbrenner, K., Bartels, S., Mueser, K., Carpenter-Song, E., & Kinney, A. (2012). Consumer perspectives on involving family members and significant others in a healthy lifestyle intervention. *Health & Social Work*, 37, 207–215.

Aschbrenner, K., Carpenter-Song, E., Mueser, K., Kinney, A., Pratt, S., & Bartels, S. (2013). Qualitative study of social facilitators and barriers to health behavior change among persons with serious mental illness. *Community Mental Health Journal*, 49, 207–212.

Aschbrenner, K., Mueser, K., Bartels, S., & Pratt, S. (2013). Perceived social support for diet and exercise among persons with serious mental illness enrolled in a healthy lifestyle intervention. *Psychiatric Rehabilitation Journal*, 36, 65–71.

Bartels, S., & Desilets, R. (2012, January). *Health promotion programs for people with serious mental illness* (prepared by the Dartmouth Health Promotion Research Team). Retrieved from http://www.integration.samhsa.gov/Health_Promotion_White_Paper_Bartels_Final_Document.pdf

Bartels, S. J., Pratt, S. I., Aschbrenner, K. A., Barre, L. K., Jue, K., Wolfe, R. S., et al. (2013). Achieving clinically significant improved fitness and weight loss in overweight persons with serious mental illness. *Psychiatric Services*, 64, 729–736.

Bartels, S. J., Pratt, S. I., Aschbrenner, K. A., Barre, L. K., Naslund, J. A., Wolfe, R., et al. (2014). Pragmatic randomized trial of health promotion coaching for obesity in serious mental illness and maintenance of outcomes. *American Journal of Psychiatry*. Advance online publication.

Bressee, L. C., Majumdar, S. R., Patten, S. B., & Johnson, J. A. (2010). Prevalence of cardiovascular risk factors and disease in people with schizophrenia: A population based study. *Schizophrenia Research*, 117, 75–82.

Breslow, L. (1996). Social ecological strategies for promoting healthy lifestyles. *American Journal of Health Promotion*, 10, 253–257.

Centers for Disease Control and Prevention. (2009). State-specific prevalence and trends in adult cigarette smoking—United States, 1998–2007. *Morbidity and Mortality Weekly Report*, 58, 221–226.

Christakis, N. A., & Fowler, J. H. (2007). The spread of obesity in a large social network over 32 years. *New England Journal of Medicine*, 357, 370–379.

Christakis, N. A., & Fowler, J. H. (2008). The collective dynamics of smoking in a large social network. *New England Journal of Medicine*, 358, 2249–2258.

Cole, J. A., Smith, S. M., Hart, N., & Cupples, M. E. (2010). Systematic review of the effect of diet and exercise lifestyle interventions in the secondary prevention of coronary heart disease. *Cardiology Research and Practice*. Advance online publication. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3010651/>

Colton, C. W., & Manderscheid, R. W. (2006). Congruencies in increased mortality rates, years of potential life lost, and causes of death among public

- mental health clients in eight states. *Preventive Chronic Disease*, 3, 1–14.
- Daumit, G. L., Goff, D. C., Meyer, J. M., Davis, V. G., Nasrallah, H. A., & McEvoy, J. P. (2008). Anti-psychotic effects on estimated 10-year coronary heart disease risk in the CATIE schizophrenia study. *Schizophrenia Research*, 105, 175–187.
- Donnelly, J. E., Blair, S. N., Jakicic, J. M., Manore, M. M., Rankin, J. W., Smith, B. K., et al. (2009). American College of Sports Medicine position stand: Appropriate physical activity intervention strategies for weight loss and prevention of weight regain for adults. *Medicine & Science in Sports and Exercise*, 41, 459–471.
- Gorin, A., Phelan, S., Tate, D., Sherwood, N., Jeffery, R., & Wing, R. (2005). Involving support partners in obesity treatment. *Journal of Consulting and Clinical Psychology*, 73, 341–343.
- Gorin, A. A., Raynor, H. A., Fava, J., Maguire, K., Robichaud, E., Trautvett, M. C., et al. (2013). Randomized controlled trial of a comprehensive home environment-focused weight-loss program for adults. *Health Psychology*, 32, 128–137.
- Kiernan, M., Moore, S. D., Schoffman, D. E., Lee, K., King, A. C., Taylor, B. C., et al. (2012). Social support for healthy behaviors: Scale psychometrics and prediction of weight loss among women in a behavioral program. *Obesity*, 20, 756–764.
- Kotov, R., Guey, L. T., Bromet, E. J., & Schwartz, J. E. (2010). Smoking in schizophrenia: Diagnostic specificity, symptoms correlates, and illness severity. *Schizophrenia Bulletin*, 36, 173–181.
- Krueger, R. A. (1994). *Focus groups* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Kumanyika, S., & Economos, C. (2011). Prevention of obesity: Finding the best evidence. *World Nutrition*, 2, 283–299.
- Kumanyika, S. K., Wadden, T. A., Shults, J., Fassbender, J. E., Brown, S. D., Bowman, M. A., et al. (2009). Trial of family and friend support for weight loss in African American adults. *Archives of Internal Medicine*, 169, 1795–1804.
- Leon, A. C., Davis, L. L., & Kraemer, H. C. (2011). The role and interpretation of pilot studies in clinical research. *Journal of Psychiatric Research*, 45, 626–629.
- Lieberman, J. A., Stroup, T. S., McEvoy, J. P., Swartz, M. S., Rosenheck, R. A., Perkins, D. O., et al. (2005). Effectiveness of antipsychotic drugs in patients with chronic schizophrenia. *New England Journal of Medicine*, 353, 1209–1223.
- McEvoy, J. P., Meyer, J. M., Goff, D. C., Nasrallah, H. A., Davis, S. M., Sullivan, L., et al. (2005). Prevalence of metabolic syndrome in patients with schizophrenia: Baseline results from the Clinical Antipsychotics Trials of Intervention Effectiveness (CATIE) schizophrenia trial and comparison with national estimates from NHANES III. *Schizophrenia Research*, 80, 19–32.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Mitchell, A. J., & Malone, D. (2006). Physical health and schizophrenia. *Current Opinion in Psychiatry*, 19, 432–437.
- Ross, R., & Janiszewski, P. M. (2008). Is weight loss the optimal target for obesity-related cardiovascular disease risk reduction? *Canadian Journal of Cardiology*, 24, 25D–31D.
- Scott, D., & Happell, B. (2011). The high prevalence of poor physical health and unhealthy lifestyle behaviors in individuals with severe mental illness. *Issues in Mental Health Nursing*, 32, 589–597.
- Shiner, B., Whitley, R., Van Citters, A. D., Pratt, S. I., & Bartels, S. J. (2008). Learning what matters for patients: Qualitative evaluation of a health promotion program for those with serious mental illness. *Health Promotion International*, 23, 275–282.
- U.S. Department of Health & Human Services. (2008). *The 2008 physical activity guidelines for Americans*. Retrieved from <http://www.health.gov/paguidelines/pdf/paguide.pdf>
- Van Citters, A. D., Pratt, S. I., Jue, K., Williams, G., Miller, P. T., Xie, H., et al. (2010). A pilot evaluation of the In SHAPE individualized health promotion intervention for adults with mental illness. *Community Mental Health Journal*, 46, 540–552.
- Verhaeghe, N., De Maeseneer, J., Maes, L., Van Heeringen, C., & Annemans, L. (2011). Effectiveness and cost-effectiveness of lifestyle interventions on physical activity and eating habits in persons with severe mental disorders: A systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, 8, 28.
- Verheijden, M. W., Bakx, J. C., van Weel, C., Koelen, M. A., & van Staveren, W. A. (2005). The role of social support in lifestyle-focused weight management interventions. *European Journal of Clinical Nutrition*, 59, S179–S186.
- Whitley, R., & Crawford, M. (2005). Qualitative research in psychiatry. *Canadian Journal of Psychiatry*, 50, 108–114.
- Wing, R., & Jeffery, R. W. (1999). Benefits of recruiting participants with friends and increasing social support for weight loss and maintenance. *Journal of Consulting and Clinical Psychology*, 67, 132–138.

Kelly Aschbrenner, PhD, is assistant professor, Department of Psychiatry and Dartmouth Institute, Geisel School of Medicine at Dartmouth, Psychiatric Research Center, 105 Pleasant Street, Main Building, Concord, NH 03301; e-mail: kelly.aschbrenner@dartmouth.edu. **Kim Mueser, PhD**, is professor, Boston University. **Stephen Bartels, MD, MS**, is professor, **Elizabeth Carpenter-Song, PhD**, and **Sarah Pratt, PhD**, are assistant professors, Department of Psychiatry, Community and Family Medicine and Dartmouth Institute, Geisel School of Medicine at Dartmouth, Hanover, NH. **Laura Barre, MD**, is a research scientist, Cornell University Division of Nutritional Sciences, Ithaca, NY. **John Naslund, MS**, is a doctoral student, Dartmouth Institute, Lebanon, NH. **Allison Kinney, MSW**, is program manager, Geisel School of Medicine at Dartmouth, Hanover, NH. Research supported by the National Institute of Mental Health (R01 MH089811) and the Gary Tucker Junior Investigator Award Department of Psychiatry at the Geisel School of Medicine at Dartmouth.

Original manuscript received July 30, 2013
 Final revision received November 9, 2013
 Accepted December 18, 2013
 Advance Access Publication February 19, 2015