
Loving-Kindness Meditation to Enhance Recovery From Negative Symptoms of Schizophrenia



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In this article, we describe the clinical applicability of loving-kindness meditation (LKM) to individuals suffering from schizophrenia-spectrum disorders with persistent negative symptoms. LKM may have potential for reducing negative symptoms such as anhedonia, avolition, and asociality while enhancing factors consistent with psychological recovery such as hope and purpose in life. Case studies will illustrate how to conduct this group treatment with clients with negative symptoms, the potential benefits to the client, and difficulties that may arise. Although LKM requires further empirical support, it promises to be an important intervention since there are few treatments for clients afflicted with negative symptoms. © 2009 Wiley Periodicals, Inc. *J Clin Psychol: In Session* 65: 499–509, 2009.

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Individuals experiencing the persistent negative symptoms of schizophrenia represent a significant subgroup of those diagnosed with schizophrenia, with estimates between 15–20% (Buchanan, 2007). This subgroup is especially prone to low treatment response because negative symptoms significantly predict poorer long-term functioning and prognosis. The consensus on the negative symptom construct

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specifies five symptoms: alogia, blunted affect, asociality, avolition, and anhedonia (Kirkpatrick, Fenton, Carpenter, & Marder, 2006). Research suggests alogia (diminished speech) and blunted affect (diminished expression of emotion) may represent a single factor. Asociality (little interest or desire for interpersonal relationships), avolition (diminished motivation), and anhedonia (diminished pleasure) may be closely related and appear to constitute another factor (Blanchard & Cohen, 2006). Diminished interest in relationships, motivation, and pleasure are particularly important deficits as they are highly related to an individual's quality of life.

Anhedonia can be divided into impairments in anticipatory pleasure—anticipating a pleasurable experience in the future—and consummatory pleasure—one's ability to enjoy something at that moment (Gard, Kring, Gard, Horan, & Green, 2007; Horan, Kring, & Blanchard, 2006). Consummatory pleasure seems to be largely intact in individuals suffering from schizophrenia while deficits are found in anticipatory pleasure. Anticipatory pleasure may be key to understanding negative symptoms as it could explain motivational deficits (Brown & Pluck, 2000); someone who cannot anticipate enjoying an activity in the future will have little incentive to work toward it. Anticipatory pleasure may also be related to asociality; someone who cannot anticipate enjoying a future social interaction will lose interest in pursuing relationships. For these reasons, practitioners must address the needs of those suffering from the negative symptoms of schizophrenia.

Treatment of Negative Symptoms

Current treatments for negative symptoms are limited in empirical research, lack a clear theoretical rationale, and have demonstrated only modest efficacy. Psychopharmacological treatments of negative symptoms demonstrate mixed results and, at best, modest effects (Buchanan, 2007).

Psychosocial treatments for negative symptoms can be divided into three treatments: activity-based therapy, cognitive-behavioral therapy (CBT), and integrated therapy (IT). Activity-based approaches are treatments focused on some specific behavior or activity done by the client or together with a therapist or group. One of these approaches, music therapy, may be the most promising for treating negative symptoms according to a meta-analysis of randomized clinical trials (Gold, Haldal, Dahle, & Wigram, 2005). Other activity-based treatments include vocational therapy and animal-assisted therapy, which have only preliminary support for the treatment of negative symptoms in schizophrenia (Bryson, Lysaker, & Bell, 2002; Gammonley et al., 1997). However, these treatments do not specify a theoretical rationale for their application to negative symptoms and are, therefore, limited in the interpretation of the mechanism of change. Also, the feasibility of this treatment may be limited because requisite resources, such as musical instruments or pets, may not be readily available to clients after the treatment ends, thereby limiting its long-term efficacy.

A large body of research has been conducted on CBT for schizophrenia (although not specifically for negative symptoms). In a meta-analysis of 23 randomized controlled trials which included a total sample of 1,268 participants, CBT for psychosis showed a medium effect size reduction of negative symptoms (Wykes, Steel, Everitt, & Tarrier, 2008). However, after including only trials categorized as having rigorous methodology, reanalysis found a small effect size for reducing negative symptoms. Additionally, although a cognitive model for the treatment of

negative symptoms exists (Stolar, 2004), only 2 of 34 CBT studies included in the meta-analysis were independently rated as primarily targeting negative symptoms. This small effect may be partly due to the limited number of studies or the detrimental impact that negative symptoms have on social learning, which, in turn, might cause a poor therapeutic response to CBT and skills training (e.g., Hoffman & Kupper, 1997).

The final group of treatments, IT, incorporates multiple treatments, such as family therapy, social skills training, CBT coping strategies, assertive community treatment, psychoeducation, and behavior scheduling. IT research studies are mixed in results; however, even positive findings are limited by methodological flaws, while a lack of theoretical rationale makes interpretation difficult for the impact on negative symptoms. Additionally, the most critical feature of IT interventions is a long-term nature (often up to 2 years), which makes IT interventions difficult to implement for individuals with low motivation who are less likely to complete a lengthy treatment (e.g., Thorup et al., 2005).

Given the limitations in current treatments for negative symptoms, other psychosocial treatments need to be developed and researched, especially those that teach skills that will continue to foster recovery after treatment ends. Moreover, the psychosocial treatment should possess a sound theory that could address how anticipatory pleasure may impact negative symptoms. One such theory is the broaden-and-build theory of positive emotions.

Broaden-and-Build Theory of Positive Emotions

The broaden-and-build theory posits that momentary positive emotions broaden an individual's ability to think and act in a more flexible manner, which, over time, leads that person to think and behave in a way that builds personal resources (Fredrickson, 2001). These resources may be physical (e.g., health), social (e.g., friendships), intellectual (e.g., knowledge), and psychological (e.g., resilience). These resources are durable, unlike the transient nature of positive emotions, and are believed to lead to increased satisfaction in life.

This theory holds special importance because of its clinical applicability to treatment of the negative symptoms of schizophrenia. If positive emotions broaden an individuals' thinking/acting repertoire and build their resources, then some of these resources could include increased sociality, motivation, and anticipatory pleasure, which are core deficits comprising the negative symptoms of schizophrenia. In turn, this theory indicates that improvements in these resources improve life satisfaction, which is likely to be low in individuals with negative symptoms given their poor prognosis and impaired functioning.

The broaden-and-build theory is built on a strong empirical foundation of research demonstrating that positive emotions broaden the momentary thought-action repertoires. For example, studies support that people who experience positive emotions demonstrate thinking that is notably unusual, flexible and creative, integrative, open to information and efficient (see review by Isen, 2000). However, the association between positive emotions and building of personal resources has only limited support, partly due to the difficult nature of finding a treatment that consistently induces positive emotions. This phenomenon, called the "hedonic treadmill effect," describes the tendency for an individual to return to a baseline set-point of well-being once novelty has subsided and would likely apply to laboratory-based tasks such as watching pleasant films (Diener, Lucas, & Scollon, 2006).

The broaden-and-build theory was recently tested using a treatment that improves positive emotions and is relatively immune from hedonic treadmill effects: meditation. Unlike laboratory tasks, meditation is active and personalized, and insights gained from it can be applied to a variety of situations and life domains. In a wait-list control design using a non-clinical sample of 141 participants, we tested loving-kindness meditation (LKM; Salzberg, 1995), a type of concentration meditation focused on directing warm, compassionate feelings to self and others (Fredrickson, Cohn, Coffey, Pek, & Finkel, in press). The study found that the meditation group induced more positive emotions in the lives of participants than the control participants, a necessary step for testing the broaden-and-build theory. The results also showed that an increase in positive emotions was significantly associated with increases in participants' resources, including mindfulness, anticipatory pleasure, hope, environmental mastery, self-acceptance, purpose in life, and social support. The final part of the theory was also supported: positive emotions alone did not lead to increased life satisfaction but instead the changes in personal resources predicted increased satisfaction with life.

A laboratory-based study of LKM in a non-clinical population also found results consistent with the broaden-and-build theory (Hutcherson, Seppala, & Gross, in press). Participants who practiced LKM for only several minutes had increased positive mood and a sense of connection and positivity towards others. Other research suggests that LKM may activate areas of the brain associated with empathy towards others, which could play a role in the building of relationships (Lutz, Brefczynski-Lewis, Johnstone, & Davidson, 2008).

These results may portend positive results for LKM in the treatment of negative symptoms. Insofar as LKM improved anticipatory pleasure and social connectedness, it holds promise in ameliorating the specific deficits of anhedonia and asociality found in individuals with negative symptoms, via the mechanism of increasing positive emotions. Insofar as LKM enhanced participants' hope, self-acceptance, environmental mastery, and purpose in life, it may do so as well for individuals with severe mental illness. Conducting LKM in a group setting may also provide the additional benefits of group therapeutic factors, such as universality, acceptance, and interpersonal learning (Yalom, 1995). In fact, research supports the relationship between group process factors and long-term improvements in functioning among individuals with severe mental illness. Figure 1 offers a conceptual illustration of the impact of LKM on emotions, negative symptoms, and psychological recovery.

Loving-Kindness Meditation for Schizophrenia

Meditation has been defined as the act of inward contemplation and the intermediate state between attention to a stimulus and complete absorption in it (Taylor, 1999). Growing evidence suggests that both concentration and mindfulness meditation are associated with a variety of clinical benefits, including anxiety and stress regulation, reduction of chronic pain, and management of medical illnesses (e.g., cancer; for reviews, see Baer, 2003; Kabat-Zinn, 2003).

Within schizophrenia-spectrum disorders, less work has been conducted on the effects of meditation, though pilot studies suggest promising results. Initial studies have found that meditation was associated with improvements in mood, well-being, functioning, relaxation, and peace, as well as a desire to continue practicing meditation (Chadwick, Taylor, & Abba, 2005; Lavey et al., 2005; York, 2007). Additionally, one treatment incorporating mindfulness-based practices (i.e.,

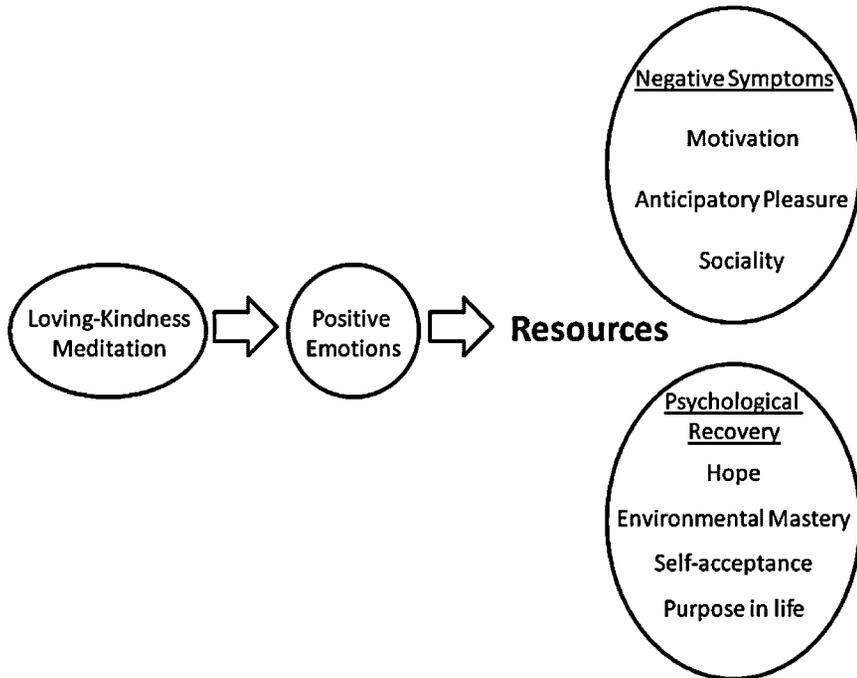


Figure 1. The broaden-and-build theory of positive emotions as applied to LKM for negative symptoms of schizophrenia.

Acceptance and Commitment Therapy [ACT]) has been shown to reduce distress associated with psychotic symptoms and hospitalizations among inpatients with psychotic disorders (Bach & Hayes, 2002; Gaudiano & Herbert, 2006). Indeed, many individuals with severe mental illness such as schizophrenia are engaged in some form of meditation, reporting it as the second most commonly used alternative health care practice (Russonova, Wewiorski, & Cash, 2002).

LKM is used to increase feelings of warmth and caring for self and others (Salzberg, 1995). Similar to other meditation practices, LKM involves quiet contemplation, often with eyes closed or in a non-focused state and an initial attending to the present moment. Then, participants direct their attention to their heart region and contemplate a person for whom they already feel warm, tender, and compassionate feelings (e.g., their child, a close loved one, a pet) or a situation when they felt warm feelings. They are then asked to extend these warm feelings to themselves. Often phrases such as “May I be safe,” “May I be happy,” “May I be healthy,” and “May I be peaceful” are internally verbalized to help generate these feelings. As the practice continues, they are asked to radiate these warm, tender, and compassionate feelings to others; first to a few people they know well, then to all their friends and family; then to all people with whom they have a connection, and finally to all people and creatures of the earth. In our work, patients attended one-hour weekly sessions for 6 weeks and a review session that took place 6 weeks after the final session.

The weekly group sessions incorporated three major components: discussion, skills teaching, and practice. At the beginning of each session, the participants were encouraged to discuss something they learned from doing the meditation or a perceived benefit of the meditation. The leader then addressed challenges or

questions as a group and reinforced positive aspects of the practice. Next, a mindfulness activity was taught and practiced, such as mindful eating, walking, listening or body movement. These practices were done to strengthen the patient's ability to concentrate in the present moment with the ultimate goal of strengthening focus on loving kindness. A novel aspect of loving-kindness meditation was then taught by the group leader who often used selected readings from books. Finally, the group facilitator led the participants in 5–10 minutes of formal LKM practices during the session, gently reminding participants to non-judgmentally redirect their attention to the feeling of loving kindness when attention wandered. The group facilitator often reminded the participants of the phrases used to anchor the practice. Occasionally, additional phrases were added such as “May I be filled with the feeling of loving kindness” and participants were encouraged to imagine this feeling consuming their own bodies. The group facilitator also asked each participant to reminisce about times they may have felt loving kindness (e.g., when a child took their hand, they saw their best friend, their pet came to greet them, they did a generous act for someone, they gave a kind gift or card to someone). In later sessions of LKM, participants are invited to extend this feeling to others and asked to wish them well using the anchor phrases “May they be safe/happy/healthy/peaceful.” Finally, the group facilitator reminds participants that these feelings are accessible throughout the day to extend to themselves and others.

Patients were then encouraged to practice LKM formally by listening to a CD every day during the week, which contained three different, 20-minute sessions. Informal practice was suggested throughout the day for durations as short as a few minutes at prescribed times or when distressing situations arise.

Case Illustrations

The following cases describe the clinical feasibility, benefits, and challenges of LKM for individuals diagnosed with a schizophrenia-spectrum disorder. Assessments of psychiatric symptoms, emotions, and psychological recovery were conducted at baseline, post-treatment, and 3-month follow-up. Patients ranged from young adult to middle age and included primary diagnoses of schizophrenia, schizoaffective disorder, and psychotic disorder not otherwise specified, according to a chart review. All patients were taking antipsychotic medications during the course of the group. The group treatment took place in the waiting room of a mental health clinic during the early evening hours after the clinic had closed. Each LKM session was conducted by one of the authors (M. Brantley), a masters-level licensed marriage and family therapist, who has practiced meditation for over 25 years and who coauthored a book about LKM (Brantley & Hanauer, 2008).

Case 1: Samantha

Presenting problem/client description. Samantha is a single, unemployed young African-American woman diagnosed with schizophrenia and social anxiety disorder. She described a general uneasiness around people whom she believed were paying special attention to her and evaluating her negatively. Samantha was also interested in being more comfortable around men with the hope of being in a romantic relationship, which was impaired by negative beliefs about her desirability. She reported an absence of friends but did spend time with her family, despite feeling nervous about her behavior around them. Samantha's negative symptoms manifested as a lack of motivation to pursue goals and relationships, perhaps

secondary to her social anxiety and negative beliefs about her ability to succeed. Samantha also exhibited a significantly reduced range of emotion expression and a soft tone of voice.

Course of treatment. Samantha was in individual psychotherapy one year prior to participating in the LKM group, where she learned mindfulness meditation and experienced its benefits in reducing her social anxiety. Therefore, Samantha was highly motivated to learn this new meditation practice and began practicing it on a regular basis when the group began. Samantha reported practicing LKM 5 to 7 days each week for about 5 minutes each day during the course of the group. In the first few LKM sessions, Samantha appeared anxious and was hyper-attentive to other group members' behavior, believing they were negatively evaluating her. However, comparisons of her mood before and after each LKM session suggested the group was helping to increase her pleasant emotions and reduce unpleasant emotions. Then, after several sessions of practicing LKM, she began initiating comments and questions in the group discussion. She was also visibly more comfortable, exhibiting an improved range of expressed emotions, such as smiling and laughing during exchanges with group members.

Several months after the LKM group, Samantha entered a cognitive-behavioral self-help therapy program for social anxiety that involved "check-in" sessions with a clinician. During this treatment, Samantha experienced rapid improvements in her symptoms and her clinician reported that she progressed through the materials much faster than most clients. This clinician attributed Samantha's improvements to highly flexible thinking, which permitted her to generate alternative explanations that challenged her previous rigid and distorted thinking.

Outcome and prognosis. Regarding treatment satisfaction, Samantha gave the LKM group the highest ratings possible when asked how much she enjoyed it and how useful it was to her. She found that LKM had allowed her to finally feel included in the world and connected to others in a variety of social situations. In the past, Samantha would often worry about staying appropriate distances from pedestrians while walking, which led her to feel as if she was acting unnaturally. After learning LKM, Samantha practiced sending thoughts of loving kindness to these strangers, which relaxed her and replaced her characteristic negative worry and paranoid thoughts. This practice improved Samantha's ability to look at people's facial features instead of avoiding their eye contact. She also experienced a reduction in muscle tension after finishing the LKM group, which had previously been a constant source of distress seemingly associated with the stress of being overly alert to others. Samantha then began pursuing various romantic relationships and relied on LKM to calm herself whenever she was feeling overly anxious during this process.

She also decided to pursue further education and began exploring potential areas of study. Several weeks after the group terminated, Samantha joined a local sculpture class despite a high level of initial anxiety about the other class members. Not only did she complete the entire art class, she even decided to prioritize this art class above an individual psychotherapy session that was offered on a conflicting day. This decision highlights Samantha's journey of recovery as she was taking control of her own treatment. Lastly, even 3 months after the LKM group sessions were completed, Samantha remarked noticing how much happier she was due to the meditation and that she perceived the world as more vivid and beautiful.

Consistent with the broaden-and-build theory, this case depicts the potential for LKM to induce positive emotions, which then assisted Samantha in behaving in

ways she would not have previously considered. In the past, Samantha considered people as threats and thus she limited her time and actions in public. LKM provided her with a skill to generate positive emotions while around people. The accrual of these positive emotions then seemed to lead to improvements in her ability to mindfully attend to the world and the people around her. This had the benefit of correcting some of her misperceptions about the world as a dangerous place. Improvements in mood through practicing LKM also led to improvements in her motivation to pursue her goals of being in a romantic relationship and finding further education. These resources had accumulated to the point that they were now significantly enhancing her life satisfaction.

Case 2: Kerry

Presenting problem/client description. Kerry is a middle-aged woman living at home with her parents and siblings. She was referred to the LKM group for treatment of anhedonia, avolition, and blunted affect that seemed to be a result of her schizophrenia and not secondary to medication or affective symptoms. Kerry was experiencing a moderate amount of pleasure during her recreational activities but had difficulty looking forward to future activities. She also reported being interested in finding employment but had trouble persisting in this search. Kerry's facial features rarely changed, and she spoke with little modulation in her speech. Kerry felt close to her family but had no friends and little motivation or desire to pursue relationships.

Course of treatment. Prior to the group, Kerry was very concerned about the level of required discussion in the group and needed reassurance that it would be voluntary. She hesitantly joined the group and remained mostly silent throughout the first few sessions. When questioned directly during the later sessions, she did respond that LKM was difficult for her to practice. She reported that her thoughts raced and she could not quiet them to feel as if she were doing the meditation correctly. She would often become discouraged if her thoughts became negative and then discontinue her practice. The group facilitator encouraged her to simply notice her thoughts in a non-judgmental manner and use smaller time periods of practice to feel successful. Kerry's anxiety about the group declined throughout the course of treatment. Indeed, by the final group Kerry indicated that she preferred the group setting over solitary practice as it was encouraging to be with others engaged in the meditation.

Outcome and prognosis. During follow-up contacts, Kerry reported that she had decided to postpone regularly practicing LKM. She recognized that the ability to focus her thoughts was still difficult and wanted to strengthen her attention with various mindfulness activities, such as mindful bicycling in a favorite park. These activities led to a sense of peace as she had a hiatus from her racing negative thoughts, which often focused on personal problems. She also indicated that relaxation gave her assistance in her thinking when she mentally revisited her problems at a later point. Kerry's siblings also stated that she was in a better mood after going through the LKM group. In fact, her anhedonia had improved as Kerry was looking forward to a number of future activities and associated physical sensations, such as the feeling of the wind when she bicycled.

Consistent with the broaden-and-build theory, meditating led to improvements in Kerry's mood that likely led to increased flexibility in considering and pursuing

recreational activities. Once involved in these activities, Kerry then enjoyed them more as a result of her practice of mindfully attending to the present moment. Also, Kerry's experience of more frequent positive emotions appeared to lead her to more effective problem solving when she considered difficulties in her life.

Kerry's case illustrates the idea that some individuals will need to first become practiced at a more basic mindfulness meditation before they begin directing their thoughts to loving kindness for themselves or others. Kerry understood that many people took years to learn meditation; she adopted a new perspective by focusing on the journey instead of the resulting benefits.

Case 3: Henry

Presenting problem/client description. Henry is a middle-aged man diagnosed with schizophrenia and living at home with his parents who was referred to the LKM group for persistent negative symptoms. Henry experienced an almost complete absence of desire to be with others, which included friendships and romantic relationships. He had little motivation to pursue recreational activities, employment, or further education. Henry also experienced flat affect, appearing statuesque with virtually no emotion reflected on his face. Likewise, profound alogia left him responding to questions with one or two word replies and no spontaneous elaboration.

Course of treatment. Henry attended every LKM session and participated in each of the meditation activities. However, he never participated in a group discussion unless directly addressed by the group facilitator. Even when addressed, he used mostly one or two word responses. Henry also sat still and never demonstrated any emotional change on his face. He described having difficulty concentrating on the meditation and only used it 2 to 3 days each week for about 10 minutes.

Outcome and prognosis. Although Henry reported enjoying the group, pre-post assessments and weekly reports suggested that the LKM sessions never impacted Henry's mood. LKM also seemed to have little appreciable effect on his targeted negative symptoms of asociality, avolition, flat affect, and alogia. Nonetheless, Henry did report that the meditation helped him to feel more relaxed and that exercises, such as mindful breathing, helped him cope with auditory hallucinations.

Henry's case illustrates the possibility that a brief exposure to LKM may not significantly reduce persistent negative symptoms. In fact, we would not expect any changes in these domains due to LKM's limited impact on Henry's positive mood, the mechanism of change according to the broaden-and-build theory. Nonetheless, because of the personalized nature of meditation, Henry was still able to learn this skill and apply it to reduce distress associated with his positive symptoms. This result is also consistent with research findings supporting the benefits of meditation as part of a broader treatment (ACT; Bach & Hayes, 2002; Gaudiano & Herbert, 2006) for reducing distress associated with positive symptoms and increasing relaxation (York, 2007).

Clinical Issues and Summary

These three cases each illustrate potential benefits and challenges to applying LKM to the persistent negative symptoms and psychological recovery of individuals suffering from schizophrenia. First, Samantha experienced significant improvements

in asociality, blunted affect, and motivation to pursue her goals during the course of the LKM group and at the 3-month follow-up assessment. From a client-centered perspective, Samantha's case also illustrates how LKM led to the promotion of her personal recovery priorities, such as further education and interpersonal relationships. Specific characteristics of this case may assist clinicians in identifying similar clients who would also have a profound response to LKM. It is likely that Samantha was able to practice LKM more effectively because of her previous training and success in mindfulness meditation. This case also illustrates the complementary nature of a positive psychology treatment that induces positive emotions and a cognitive approach to symptom reduction. We recommend that clinicians consider using positive psychology treatments as a foundation for, or concurrent with, cognitive approaches.

Kerry and Henry did not experience the same global improvements in recovery, as a result of LKM, in comparison with Samantha. However, both clients did experience improvements in specific domains, and it is important to consider the client characteristics that may have been relevant to their reduced response. Kerry reported significant difficulty focusing her attention on LKM and often become distracted and distressed by persistent negative thoughts. Therefore, Kerry decided to practice mindfulness activities based on movement, which led to a perceived increase in her relaxation and increase motivation to pursue these activities. Likewise, Henry had difficulty with his concentration on LKM and decided to instead remain at the more basic level of mindfulness meditation. Henry benefited from mindful breathing exercises by applying them as a coping mechanism during auditory hallucinations. Both of these cases illustrate the difficulty that many individuals may have practicing LKM without previous experience strengthening mindfulness. Prior to LKM, we recommend that clinicians provide training in mindfulness and convey a rationale relevant to the client's desired outcome. For example, Henry never expressed an interest in improving any of his negative symptoms, whereas his application of meditation to positive symptoms is likely more indicative of his treatment priority. These recommendations are consistent with the client-centered recovery theory of treatment and the personalized nature of meditation.

In light of the limited efficacy of current treatments for negative symptoms, there is a significant need for psychosocial treatments that improve anticipatory pleasure, sociality, and motivation. The case studies described here suggest that a particular meditation, LKM, can improve individuals' negative symptoms via the mechanism of positive emotions. However, it appears that previous meditation experience assists in the learning and practice of LKM and thus improves outcomes. Clients who have difficulty with LKM may benefit more from basic mindfulness exercises that can be applied to their personal definition of recovery.

Selected References and Recommended Readings

- Baer, R.A. (2003). Mindfulness training as a clinical intervention: A conceptual and empirical review. *Clinical Psychology: Science and Practice*, 10, 125–143.
- Brantley, M., & Hanauer, T. (2008). *The gift of loving-kindness: 100 meditations on compassion, generosity, and forgiveness*. Oakland, CA: New Harbinger Publications.
- Buchanan, R.W. (2007). Persistent negative symptoms in schizophrenia: An overview. *Schizophrenia Bulletin*, 33(4), 1013–1022.

- Chadwick, P., Taylor, K.N., & Abba, N. (2005). Mindfulness groups for people with psychosis. *Behavioural and Cognitive Psychotherapy*, 33(3), 351.
- Fredrickson, B.L. (2001). The role of positive emotions in positive psychology. The broaden-and-build theory of positive emotions. *American Psychologist*, 56(3), 218–226.
- Fredrickson, B.L., Cohn, M.A., Coffey, K.A., Pek, J., & Finkel, S.M. (in press). Open hearts build lives: Positive emotions, induced through loving-kindness meditation, build consequential personal resources. *Journal of Personality and Social Psychology*.
- Gard, D.E., Kring, A.M., Gard, M.G., Horan, W.P., & Green, M.F. (2007). Anhedonia in schizophrenia: Distinctions between anticipatory and consummatory pleasure. *Schizophrenia Research*, 93(1–3), 253–260.
- Gold, C., Heldal, T.O., Dahle, T., & Wigram, T. (2005). Music therapy for schizophrenia or schizophrenia-like illnesses (review), *Cochrane Database of Systematic Reviews* (2nd issue). Available at: <http://mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD004025/frame.html>
- Horan, W.P., Kring, A.M., & Blanchard, J.J. (2006). Anhedonia in schizophrenia: A review of assessment strategies. *Schizophrenia Bulletin*, 32(2), 259–273.
- Hutcherson, C.A., Seppala, E.M., & Gross, J.J. (in press). Loving-kindness meditation increases social connectedness. *Emotion*.
- Isen, A.M. (2000). Positive affect and decision making. In M. Lewis & J.M. Haviland-Jones (Eds.), *Handbook of emotions* (2nd ed., pp. 417–435). New York: Guilford Press.
- Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice*, 10, 144–156.
- Kirkpatrick, B., Fenton, W.S., Carpenter, Jr. W.T., & Marder, S.R. (2006). The NIMH-MATRICES consensus statement on negative symptoms. *Schizophrenia Bulletin*, 32(2), 214–219.
- Lavey, R., Sherman, T., Mueser, K.T., Osborne, D.D., Currier, M., & Wolfe, R. (2005). The effects of yoga on mood in psychiatric inpatients. *Psychiatric Rehabilitation Journal*, 28(4), 399–402.
- Lutz, A., Brefczynski-Lewis, J., Johnstone, T., & Davidson, R.J. (2008). Regulation of the neural circuitry of emotion by compassion meditation: Effects of meditative expertise. *Public Library of Science ONE* (Vol. 3). Available at: <http://www.plosone.org/article/info:doi/10.1371/journal.pone.0001897>
- Russinova, Z., Wewiorski, N.J., & Cash, D. (2002). Use of alternative health care practices by persons with serious mental illness: Perceived benefits. *American Journal of Public Health*, 92(10), 1600–1603.
- Salzberg, S. (1995). *Loving-kindness: The revolutionary art of happiness*. Boston, MA: Shambhala.
- Stolar, N. (2004). Cognitive conceptualization of the negative symptoms of schizophrenia. *Journal of Cognitive Psychotherapy: An International Quarterly*, 18, 237–253.
- Wykes, T., Steel, C., Everitt, B., & Tarrier, N. (2008). Cognitive behavior therapy for schizophrenia: Effect sizes, clinical models, and methodological rigor. *Schizophrenia Bulletin*, 34(3), 523–537.
- York, M. (2007). A qualitative study into the experience of individuals involved in a mindfulness group within an acute inpatient mental health unit. *Journal of Psychiatric and Mental Health Nursing*, 14(6), 603–608.

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