



Brief Empirical Reports

A brief, interpersonally oriented mindfulness intervention incorporating Functional Analytic Psychotherapy's model of awareness, courage and love



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ABSTRACT

A brief, group mindfulness intervention targeting both state mindfulness and social connectedness was developed based on Functional Analytic Psychotherapy's model of awareness, courage, and love. A total of 114 college students were randomly assigned to one of three conditions: (1) a nature video control, (2) a traditional intrapersonal mindfulness intervention focused on awareness of breath and private stimuli such as bodily sensations, thoughts, and feelings, or (3) an interpersonal mindfulness intervention that emphasized (a) expanding awareness from private internal to external public stimuli associated with the presence of others, (b) a contemplation of common humanity and risks participants could take to improve a specific relationship, and (c) a brief small group interaction involving courageous sharing of these risks. Results indicated significant benefits of all three conditions with respect to state mindfulness with both mindfulness conditions outperforming the nature video, and significant benefits of both mindfulness conditions with respect to social connectedness, with the interpersonal mindfulness condition outperforming the intrapersonal condition. Limitations include no follow-up data to explore the maintenance of gains over time.

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1. Introduction

Social connectedness is fundamental to human nature (Cacioppo & Patrick, 2008). When experienced at adequate levels, it has a large effect on life expectancy comparable in size to quitting smoking and exceeding the effect sizes of well-known risk factors such as obesity and physical inactivity (Holt-Lunstad, Smith, & Layton, 2010). Interventions to help individuals experience and achieve more social connectedness in their lives, therefore, have significant public health value.

There has been increased interest in mindfulness interventions, which have been shown to have a variety of positive intrapersonal effects, including stress reduction, reduced psychiatric symptoms of depression and anxiety, increased psychological well-being, and improved emotion regulation, attention and cognitive control (Chang et al., 2004; Chambers, Lo, & Allen, 2008; Ramel, Goldin,

Carmona, & McQuaid, 2004). These interventions have been delivered in a variety of formats (e.g., group, individual, and online self-paced) and lengths (e.g., from brief single session trainings to daily sessions extended over weeks, months or years) and have included a variety of mindfulness components (Atkinson, 2013; Baer, 2011; Chiesa, 2013). A general goal of these interventions is to cultivate, through meditative practice and experiencing, a state of attention that is purposeful, non-judgmental, non-reactive, and attuned to the present moment, typically with respect to feelings, thoughts, bodily sensations, and other private internal experiences. Given its emphasis on awareness of private stimuli, we will broadly refer to this traditional type of mindfulness as "intrapersonal mindfulness".

Some studies suggest that traditional intrapersonal mindfulness interventions do improve interpersonal outcomes (reviewed by Atkinson (2013)). A paucity of research exists, however, on mindfulness interventions specifically structured to improve interpersonal relating. An exception is Carson, Carson, Gil and Baucom (2004) who explicitly incorporated a mindfulness intervention involving a structured couples yoga exercise in which mindfulness was integrated into the interpersonal interaction.

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Because many mindfulness interventions are delivered in group formats, it is possible to structure the intervention to capitalize on the opportunity provided by the public interpersonal, features of the group environment. Further, brief, group mindfulness interventions may have public health value as easy-to-disseminate mechanisms to produce both the intrapersonal benefits described above and possible interpersonal benefits related to improved social connectedness. In addition, longer, traditional intrapersonal mindfulness interventions with participants who are members of a couple (e.g., 8 weeks involving daily practice) have shown positive results with respect to relationship satisfaction (Barnes, Brown, Krusemark, Campbell, & Rogge, 2007). These benefits may accrue due to increased empathy and perspective-taking, improved emotion regulation, emotional attunement in the present moment to the other person, and present-moment awareness of intimacy-related feelings (Atkinson, 2013). Increased openness and awareness, in turn, facilitate important intimacy-related actions that, when responded well by the partner, lead to improvements in the relationship.

In this report, we used a contextual behavioral theory of mindfulness (Sisti, Stewart, Tsai, Kohlenberg, & Kohlenberg, 2014; Tsai et al, 2009) and a therapeutic model of social connection derived from Functional Analytic Psychotherapy (FAP; Kohlenberg & Tsai, 1991) to capitalize on the group format of a brief (1-h) traditional group intra-personal mindfulness meditation by extending the meditation practice into the inter-personal domain and adding a group interaction involving intimacy-related self-disclosure. We explored the effects of this intervention on both intrapersonal processes (i.e., state mindfulness) and interpersonal processes (i.e., social connectedness).

FAP's model of social connection incorporates three constructs—awareness, courage, and love (Tsai et al, 2009; Tsai, Callaghan, & Kohlenberg, 2013)—in an interactional sequence. Awareness is the nonjudgmental, present-moment attention to one's internal experiences (e.g., private sensations, thoughts, feelings, and values), to how the other person in the interaction might be feeling, and to how the interaction is going. Courage involves expressing authentically what is meaningful in that moment (i.e., what one has become aware of that might be difficult to express), and love involves responding with openness, empathy, understanding, validation, and caring to the

other's expressions. This contextual behavioral model parallels findings from social-cognitive psychology, particularly Reis and Shaver's (1988) well-researched model involving a transactional pattern of vulnerable self-disclosure (“courage” in the FAP model) and responsiveness (“love” in the FAP model) in a relational dyad as fundamental to the development of intimacy.

Results from an initial pilot study (Bowen, Haworth, Grow, Tsai, & Kohlenberg, 2012) led to the development of a brief (approximately one hour long) FAP-informed mindfulness intervention which included components related to awareness, courage, and love. Phase I of the intervention incorporated a traditional eyes-closed intrapersonal mindfulness sequence and it was predicted that Phase I alone would primarily produce intrapersonal benefits (specifically, improvements in state mindfulness) but not interpersonal benefits. Phase II of the intervention gradually shifted the focus to an interpersonal mindfulness sequence that included (a) expanding awareness from private/internal to public/external stimuli associated with the presence of others, (b) a contemplation of common humanity and the specific risks participants could take to improve their relationship with a “target” person with whom they have regular contact, (c) a brief small group interaction involving courageous, mindful sharing with group members of the risks they would like to take with the target person, and (d) being attentive, accepting and kind (loving) in response to what was shared. It was predicted that the full FAP-informed mindfulness intervention (Phases I and II) would produce both intrapersonal and interpersonal benefits related to social connectedness.

2. Method

2.1. Participants

Participants were 114 undergraduates recruited through a departmental online subject pool at the University of Washington. All participants were at least 18 years of age and received extra course credit for participation. For a detailed description of participant characteristics, see Table 1.

Table 1
Sample characteristics.

	Control (n=34)	Interpersonal (n=37)	Intrapersonal (n=43)	Total sample (n=114)
Age M (SD)	18.59 (0.82)	18.68 (0.82)	18.63 (1.25)	18.63 (1.00)
Gender (frequency)				
Male	41.18% (14)	37.84% (14)	25.58% (11)	34.21% (39)
Female	58.82% (20)	62.16% (23)	74.42% (32)	65.79% (75)
Ethnicity (frequency)				
Caucasian	25.53% (8)	27.03% (10)	30.23% (13)	27.19% (31)
African-American	0.00% (0)	5.41% (2)	0.00% (0)	1.75% (2)
Latino/a	0.00% (0)	2.70% (1)	4.65% (2)	2.63% (3)
Asian-American	47.06% (16)	37.84% (14)	25.58% (11)	35.96% (41)
Native American	0.00% (0)	0.00% (0)	4.65% (2)	1.75% (2)
Other	29.41% (10)	27.03% (10)	34.88% (15)	30.70% (35)
Relationship status				
Single	67.65% (23)	81.08% (30)	72.09% (31)	73.68% (84)
In a relationship	32.35% (11)	18.92% (7)	27.91% (12)	26.32% (30)
Mindfulness experience				
Historical experience				
Yes	11.76% (4)	5.41% (2)	6.98% (3)	7.89% (9)
No	88.24% (30)	94.59% (35)	93.02% (40)	92.11% (105)
Current experience				
Yes	11.76% (4)	5.41% (2)	13.95% (6)	10.53% (12)
No	88.24% (30)	94.59% (35)	86.05% (37)	89.47% (102)

2.2. Procedure

Participants were randomly assigned to one of three groups of 6–11 participants: the interpersonal meditation, intrapersonal meditation, or nature video control. At the selected meeting time, participants first provided informed consent and then completed baseline and demographic measures before participating in their assigned intervention. Following the intervention, each subject completed a post-course assessment. Participants completed follow-up assessments 48-h and 2 weeks post-intervention from their home computers; however, significant attrition to follow-up (more than 50%) precluded interpretable analyses of follow-up data.

2.3. Interventions

Subjects randomized into the interpersonal and intrapersonal meditation conditions both underwent Phase 1 of the study involving an intrapersonal-oriented mindfulness meditation. It began with eyes-closed, body scan instructions focusing on awareness of one's internal experiences including breath, private thoughts and feelings, and muscle tension sensations (muscle groups were consistent with those of Benson (1975), but with only gentle tensing to facilitate awareness of muscles). When public external stimuli were noticed, participants were told to accept the attentional shift for a moment but to gently return to focusing on internal private sensations. Subjects continued with this intrapersonal meditation on their own for about 20 min so that the full intervention lasted about an hour.

Participants in the interpersonal meditation condition were then given Phase 2 instructions, which continued the eyes closed sequence, gradually shifting the focus from purely private sensations to include awareness of the external environment including sounds such as a car horn, room temperature, as well as any indicators of the presence of others (such as another's cough, a chair moving, or clothes rustling). Participants were encouraged to expand awareness to the possibility that the others in the room might be having a similar experience to themselves. Next, informed by FAP's behavioral cosmology (Tsai et al., 2009, pp. 16–18), and consistent with compassion or loving-kindness meditations The Dalai Lama (2001), a contemplative meditation on one's history, connection with humanity, and then specifically with the other participants in the group, was introduced (e.g. experiences of hope, fear, pain, heartbreak, excitement, joy, and vulnerability). This was followed by a contemplation on interpersonal courage, specifically thinking about a target person in one's life with whom one would like to get closer and what one might say to this person to “step outside of your comfort zone” and become more open and close with him or her. Then, the private, eyes closed meditative component of the intervention ended and participants were encouraged to share in small groups the content of their previous contemplation, using this as an opportunity to practice the “stepping outside of their comfort zones” in the present moment (courage) and responding to one other with an accepting and open-hearted demeanor (love).

Participants assigned to the control group watched a 50-min nature video.

2.4. Measures

2.4.1. The State Mindfulness Scale (SMS; Tanay & Berstein, 2013)

The SMS contains 23 items measuring state mindfulness as the mental quality of mindful awareness of present physical and mental experiences. Each item is rated on a 5-point Likert scale from 1 (“Not at all”) to 5 (“Very well”), with higher scores indicating more state mindfulness. In the initial validation study, the SMS demonstrated good internal consistency, convergent

validity, discriminant validity, sensitivity to change in state mindfulness over time, and incremental predictive criterion-related validity (Tanay & Berstein, 2013). The SMS demonstrated high reliability in the current study ($\alpha=0.86$).

2.4.2. Brief Mindfulness Study – Social Connectedness Scale (BMSSCS)

The Campus Connectedness Scale (CCS; Summers, Beretvas, Scinicki, & Gorin, 2005) is a 14-item self-report measure adapted from the Social Connectedness Scale (Lee & Robins, 1995). The measure assesses college student's sense of connectedness and belonging to the campus community (e.g., “I feel that I fit right in on campus.”). The original CCS demonstrated strong internal consistency, good factor structure, and predictive validity in the original validation study (Summers et al., 2005).

In this study we modified the CCS to reflect feelings of connection among the research subjects rather than on campus in general. The resulting BMSSCS contains 13 items measuring subjects' feelings of connection to others in the room (e.g. “There are people in this room with whom I feel a close bond.”) Each item is rated on a 6-point Likert scale from 1 (“Strongly Disagree”) to 6 (“Strongly Agree”). The BMSSCS demonstrated high internal consistency in the current study ($\alpha=0.92$).

2.4.3. Inclusion of Other in the Self Scale (IOS; Aron, Aron, & Smollan, 1992)

The IOS is a single-item, pictorial measure of relational closeness. Each subject was instructed to select among a variety of Venn Diagrams with varying degrees of overlap between ‘self’ and ‘other’ that best describes their relationship with the others in the room, with higher degrees overlap indicating greater feelings of closeness. In the initial validation study (Aron et al., 1992), the IOS indicated good convergent and construct validity, test–retest reliability, and predictive validity.

3. Results

See Table 1 for sample characteristics. No baseline differences between groups were found with respect to age, gender, ethnicity, relationship status, or previous meditation practices.

3.1. Mindfulness

3.1.1. SMS

A two-way 2 (Time: pre-test and post-test) \times 3 (Condition: Control vs. Interpersonal vs. Intrapersonal) mixed ANOVA was conducted using scores on the SMS. The main effect of Time was marginally significant, $F(1,111)=3.61$, $p=0.060$, $\eta^2_C=0.009$, and there was a significant main effect of Condition, $F(2,111)=6.20$, $p=0.003$, $\eta^2_C=0.073$. The Time \times Condition interaction was marginally significant, $F(2,111)=2.90$, $p=0.059$, $\eta^2_C=0.015$ (see Fig. 1).

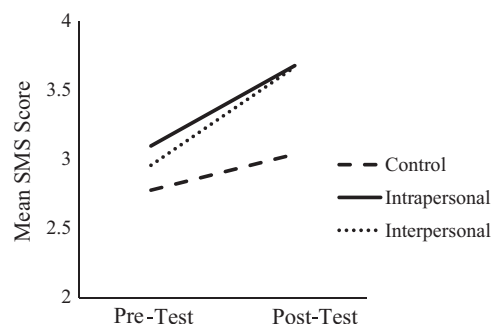


Fig. 1. Time \times Condition interaction on State Mindfulness Scores.

We executed our planned comparisons by examining the simple effects for each factor, first examining the simple within subject effects of Time at each level of Condition using paired *t*-tests. Results indicated that there was a significant increase in state mindfulness after the intervention for those in the Interpersonal condition, ($M=0.706$, $SD=0.80$), $t(36)=5.81$, $p < 0.001$, $d=0.88$, Intrapersonal condition, ($M=0.580$, $SD=0.81$), $t(42)=4.00$, $p < 0.001$, $d=0.72$, and Control condition ($M=0.26$, $SD=0.70$), $t(33)=2.37$, $p=0.024$, $d=0.37$. Next, we investigated the simple between subject effects of Condition at each time point. There was not a significant effect of Condition at Pre-test, $F(2,111)=1.87$, $p=0.159$, $\eta^2_C=0.015$. There was a significant difference across conditions at Post-test, $F(2,111)=4.21$, $p=0.02$, $\eta^2_C=0.09$, with significant differences between both the Intrapersonal and Interpersonal conditions and the Control condition but not each other.

3.2. Social connection

3.2.1. IOS

Identical to the analyses conducted on the SMS scale, we conducted a two-way mixed ANOVA using scores on the IOS with planned contrasts. While there was not a significant main effect of Time, $F(1,111)=0.92$, $p=0.339$, $\eta^2_C=0.001$, there was a significant main effect of Condition, $F(2,111)=6.03$, $p=0.003$, $\eta^2_C=0.086$. The Time \times Condition interaction was significant, $F(2,111)=8.73$, $p < 0.001$, $\eta^2_C=0.021$. Paired *t*-tests indicated that social connection was greater after the intervention for those in the Interpersonal condition ($M=1.00$, $SD=1.43$), $t(36)=5.63$, $p < 0.001$, $d=0.70$, and Intrapersonal condition ($M=0.40$, $SD=0.93$), $t(42)=2.79$, $p=0.008$, $d=0.43$, but not for those in the Control condition ($M=0.147$, $SD=0.56$), $t(33)=1.54$, $p=0.134$, $d=0.26$. There were no significant differences across Condition at Pre-test, $F(2, 145.72)=1.74$, but there was a significant difference across Condition at Post-test, $F(2, 145.72)=11.06$, with higher mean scores in the Interpersonal than either the Intrapersonal or Control conditions.

3.2.2. BMSSCS

Consistent with the results with the IOS, there was not a significant main effect of Time, $F(1,111)=0.43$, $p=.512$, $\eta^2_C=.001$ but there was a significant main effect of Condition, $F(2,111)=10.08$, $p < 0.001$, $\eta^2_C=0.133$. The Time \times Condition interaction was significant, $F(2,111)=17.10$, $p < 0.001$, $\eta^2_C=0.046$, indicating the effect of Condition varied across Pre-test and Post-test measurements. Paired *t*-tests indicated that social connection was greater after the intervention for those in the Interpersonal condition, ($M=0.852$, $SD=0.70$), $t(36)=8.83$, $p < 0.001$, $d=1.22$, and Intrapersonal condition ($M=0.324$, $SD=0.75$), $t(42)=3.64$, $p < 0.001$, $d=0.43$, but not for those in the Control condition ($M=0.066$, $SD=0.69$), $t(33)=0.66$, $p=0.510$, $d=0.10$. There were no significant differences across Conditions at Pre-test, $F(2, 145.72)=1.74$, $p=0.180$, but there was a significant difference across Conditions at Post-test, $F(2, 145.72)=11.06$, with higher mean scores in the Interpersonal than either the Intrapersonal or Control conditions.

4. Discussion

This study provides initial evidence that a FAP-informed brief mindfulness intervention can enhance a traditional brief mindfulness intervention by increasing participants' experience of social connection while still providing comparable benefits with respect to state mindfulness. For state mindfulness, we found that while the Interpersonal, Intrapersonal, and Control interventions all increased state mindfulness scores, the mean scores in the Interpersonal and Intrapersonal groups were higher than in the Control condition but not different from each other (Fig. 1).

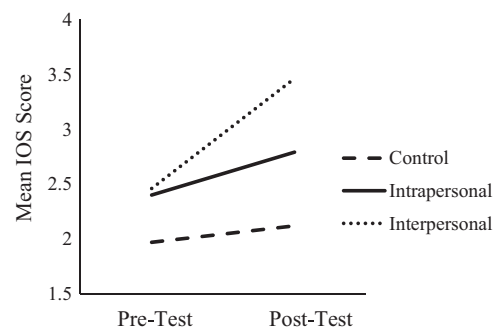


Fig. 2. Time \times Condition interaction on Inclusion of Self and Others (person in the room).

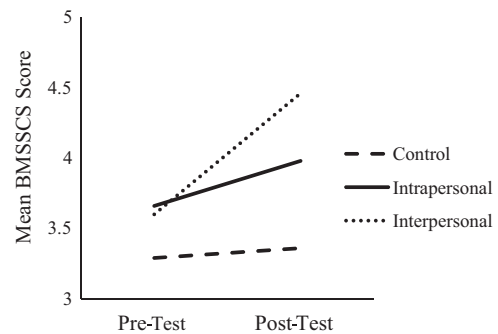


Fig. 3. Time \times Condition interaction on Brief Mindfulness Social Connection Scale.

This finding demonstrates that the additional emphasis on courage and love in the Interpersonal condition does *not* undermine the effectiveness of a brief mindfulness intervention with respect to a traditional target.

Replicating across two different measures of social connectedness (Figs. 2 and 3), we demonstrated that both the Intrapersonal and Interpersonal interventions increased participants' sense of connection with others in the room, while watching the Control video did not. Essential to our perspective, we also found on both measures of social connection that those in the Interpersonal condition had significantly *higher* levels of social connection after the intervention than those in the Intrapersonal condition, suggesting a significant, additive benefit of courage and love with respect to feelings of social connection among participants, over and above the effects of participating together in a traditional mindfulness intervention. Differences observed at Post-test were *not* due to pre-existing differences across conditions at Pre-test or measured demographic variables.

The goal of this research was to explore FAP's model of awareness, courage, and love (ACL) as the basis for a brief mindfulness intervention to improve both state mindfulness and social connectedness. Although we believe this study makes a unique contribution in demonstrating the potential of this model, there are several important limitations. First, it may be relatively easy to produce an immediate increase in social connectedness between group members doing a variety of interpersonally oriented tasks together and there is no evidence from the current study that the *specific* ACL interventions are responsible for the effect. Comparisons with other active, interpersonally oriented interventions are needed to explore the specificity of the model.

Importantly, there is no evidence from the current study that the improved social connectedness observed in the full ACL condition is sustained over time or impacts participants' existing relationships. Attrition to follow-up prevented us from analyzing

follow-up data, including data on social connectedness within the group and extending to the participants' outside relationships. This is a priority for future research.

A third limitation is the college-student sample. While an intervention targeting college students may be useful in its own right, generalization to community samples remains unknown. The public health potential of such interventions lies in the ability to disseminate them successfully across organizational and community settings, so future research focused on strategies for dissemination (e.g., train-the-trainer models, self-paced or video-based formats) and different populations of interest (e.g., workers in stressful job situations, health care organizations) may also be useful. With these limitations and future directions in mind, the current study offers a promising direction for exploring the group format of many mindfulness interventions to improve not only mindfulness but social connectedness, an important public health variable.

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