

Helping Couples Connect during the COVID-19 Pandemic: A Pilot Randomised Controlled Trial of an Awareness, Courage, and Love Intervention

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Background: A second pandemic of mental health problems due to COVID-19 is predicted, suggesting a demand for interventions to mitigate its impacts. This study evaluated the effectiveness of an online psychological intervention based on the Awareness, Courage, and Love (ACL) model from Functional Analytic Psychotherapy to promote closeness between couples during the pandemic. **Method:** Thirty-one couples were randomised into either the intervention or control group for a 2-hour online group session. The intervention was designed to increase closeness between couples, whereas control group members watched a movie. In both groups, participants responded to two instruments that assessed the couple's relationship. Generalised linear mixed modeling was used to compare the change scores over time between the groups, with random effects used to control for the correlation within a couple and the correlation within the individual. **Results:** The intervention group's closeness increased by 23 per cent while the control group's closeness increased only 2 per cent. A week later, a significant difference between the two groups emerged on closeness. **Conclusion:** Online ACL protocols requiring minimal training offer a promising intervention to quickly buffer against stress for large numbers of individuals during pandemic times.

Keywords: Awareness, Courage & Love Model, connection, couples, COVID-19 pandemic, Functional Analytic Psychotherapy

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INTRODUCTION

The behavioral and social sciences have an important role to play during crises like the COVID-19 pandemic by providing education, helping people deal with stress, and giving assistance in managing the consequences of social isolation (Van Bavel et al., 2020). A review of the psychological impacts of quarantine indicated many negative effects, including confusion, anxiety, depression, anger, and even post-traumatic stress symptoms (Brooks et al., 2020; Hawryluck et al., 2004). In fact, many researchers predict a “second pandemic” of mental health problems due to COVID-19, suggesting a demand for interventions to mitigate its impacts (Choi et al., 2020; Gordon & Borja, 2020; Lyons et al., 2020; Ornell et al., 2020; Torjesen, 2020).

Social ties are an important buffer against adverse psychological consequences (Holt-Lunstad et al., 2010; Wang et al., 2018), and this is especially true during times of crisis (Hostinar & Gunnar, 2015; Kaniasty, 2012; Pollack et al., 2012). As important as social support can be for promoting resilience, going through a disaster also places a strain on close relationships (Lavee, 2013). In particular, couples who weather crises together are at an increased risk for conflict (Duke et al., 2013), domestic violence (Fisher, 2010), and even suicide (Griffiths & Mamun, 2020). Specifically, during the COVID-19 crisis, although the safeguards of social distancing and staying home are key to reducing transmission of the virus, they are highly disruptive to daily routines. Both partners may be trying to work from home, and couples with children have the added responsibility of childcare while working. Typical self-care involving down time, exercise, pleasurable activities, and connection with social support systems has been interrupted. The presence of additional stressors rampant in this pandemic, such as unemployment, economic hardship, fear of catching the virus, loved ones falling sick or even dying, not being able to attend family events such as weddings and funerals, all create contexts in which partners are more likely to be critical, argumentative, or blaming and less caring and supportive, leading to greater relationship dissatisfaction (Bodenmann et al., 2015; Neff & Karney, 2004). Given that these additional pandemic factors can greatly increase stress for couples, partners who focus on nurturing their relationships during these trying times are investing in their longer-term emotional and physical health (Pietromonaco & Beck, 2019; Pietromonaco & Collins, 2017). Thus, it is important to develop easily disseminable, online interventions that can not only address couples’ difficulties, but actually increase their bond in order to buffer their stress. This can be done by leveraging Functional Analytic Psychotherapy (FAP), a form of contextual behavior relational therapy that emphasises the power of interpersonal connection (Holman et al., 2017; Kohlenberg & Tsai, 1991; Tsai et al., 2009). In an attempt to bring the principles of FAP to a wider population than just those who want or can afford therapy, its main tenets have been translated into the terms Awareness, Courage, and Love (ACL), which serve as the foundational

principles for a global project with chapter leaders in 26 countries and six continents (Awareness, Courage & Love Global Project, 2020).

In the ACL model, awareness is defined as engaging in mindful awareness of one's self (feelings, needs, values), other individuals, and the context in which interactions are taking place. Courage is defined as engaging in authentic, vulnerable self-disclosures (e.g. struggles, appreciations), and asking for what one wants and needs. Love is defined as providing empathically accurate responsiveness, including provision of safety, validation, and giving the other person what they have asked for when possible (Kanter et al., 2018). In our experience, thousands of ACL participants have provided a great deal of qualitative feedback about the effectiveness of its interventions that focus on open-hearted self-disclosure, listening with validation, practicing acceptance and compassion with self and others, and expressing appreciation.

The aim of this pilot study is to assess an ACL intervention designed to promote connection between couples during the COVID-19 pandemic. We tested whether a one-session online ACL protocol, which can be replicated easily by facilitators with minimal training, can help couples feel more connected to each other during this crisis.

METHOD

Study Design

We randomised adult couples from the Western United States who were blind to hypotheses into one of two conditions in a randomised controlled trial comparing how a theory-driven psychological intervention targeting couples' communication affected couples' connectedness, compared to a control condition approximating activities as usual.

Participants and Randomisation

Participants were recruited via social media posts asking for cohabitating couples who thought they would benefit from participating in a University of Washington study investigating the impact of couple/group activities in a single 2-hour online session designed to increase connection during COVID-19 confinement. Thirty-one couples were randomised to either the experimental condition or the control condition. The randomisation process was implemented by two female undergraduate research assistants in accordance with the principle of allocation concealment. The research assistants assigned each couple a number based on the order in which they were recruited, and then used an online random group generator to divide those numbers into equal experimental and control groups.

Of the 62 participants in our sample, 29 were males. Most participants in the overall sample were in their 30 s, White, and had a bachelor’s degree or higher. For full demographic information, see Table 1. For a flow diagram of how participants moved through the study in terms of enrollment, allocation, follow-up, and data analysis, see Figure 1.

Measures

Primary Outcome: Inclusion of Others in Self (IOS). Developed by Aron et al. (1992), the IOS evaluates how much a person feels connected to a partner in a relationship, based on seven possible diagrams, which describe degrees of connection between the self and the other. Scores are coded numerically, with 1 assigned to the diagram that represents the least closeness, and 7 the greatest. This single-item scale is used widely due to its simplicity and well-established association with other measures of similar constructs (e.g. Gächter, Starmer, & Tufano, 2015).

Secondary Outcome: Couple Assessment of Relationship Elements (CARE). The CARE scale, developed by Worthington et al. (1997), measures the quality of the couple’s relationship on seven dimensions on a 7-point Likert

TABLE 1
Demographic Variables

Variable	All data N = 62 N (%) or mean (SD)	Intervention N = 32 N (%) or mean (SD)	Control N = 30 N (%) or mean (SD)	p-value
Age category—39 and under	32 (51.61%)	14(43.75%)	18 (60%)	.3052
Age category—40 and better	30 (48.39%)	18 (56.25%)	12 (40%)	
Do you have children—No	27 (43.55%)	12 (37.5%)	15 (50%)	.4619
Do you have children—Yes	35 (56.45%)	20 (62.5%)	15 (50%)	
Gender—Female	33 (53.23%)	17 (53.12%)	16 (53.33%)	1
Gender—Male	29 (46.77%)	15 (46.88%)	14 (46.67%)	1
Highest level of education— professional degree or better	31 (50%)	16 (50%)	15 (50%)	1
Highest level of education—Up to 4 years of college	31 (50%)	16 (50%)	15 (50%)	1
Income category—Less than \$100,000	28 (45.16%)	14 (43.75%)	14 (46.67%)	1
Income category—More than \$100,000	34 (54.84%)	18 (56.25%)	16 (53.33%)	1
Race—Other	11 (17.74%)	6 (18.75%)	5 (16.67%)	1
Race—White	51 (82.26%)	26 (81.25%)	25 (83.33%)	1
Length of relationship (years)	11.7 (9.53)	12.22 (9.82)	11.15 (9.36)	1

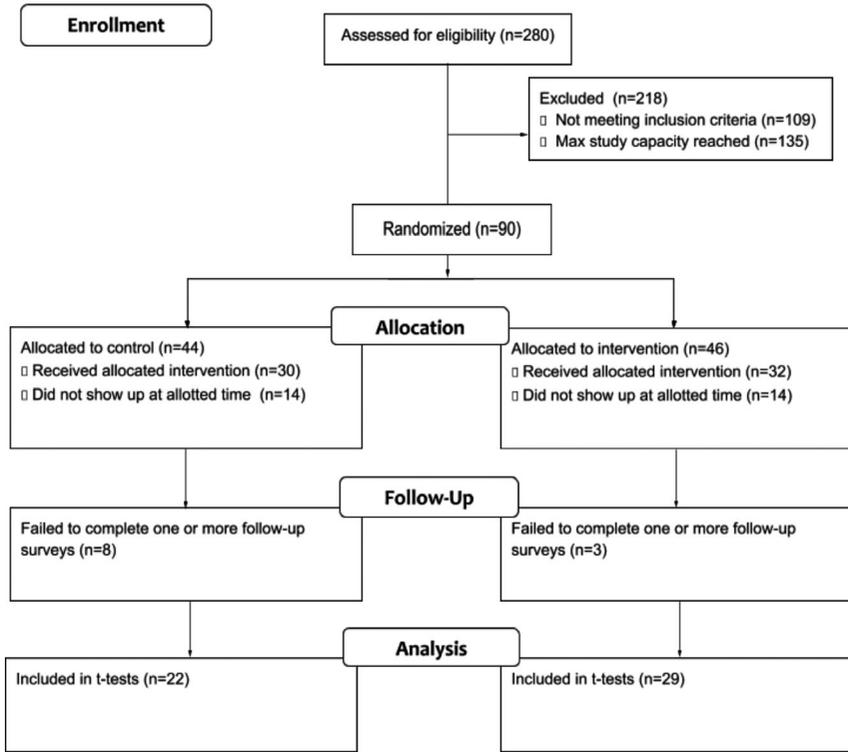


FIGURE 1. CONSORT flow diagram.

scale with 1 = couldn't be worse, 4 = not bad, not good, 7 = couldn't be better. Participants were asked to rate their relationship in the following seven areas: (1) Communication; (2) Resolution of differences; (3) Freedom from blaming your partner when things go wrong; (4) Willingness to admit to having hurt your partner and ask your partner for forgiveness; (5) Ability to forgive your partner after a hurt; (6) Intimacy; and (7) Commitment to my partner for the long term. Scores on the seven dimensions were averaged to create a score for this measure. In our sample, the internal reliability of the scale was good (Cronbach's α were .76 at pre-test, .88 at post-test, and .82 at follow-up).

Procedure

All procedures passed ethical review by the institutional review board at the first author's university prior to the commencement of the study. Due to local legislation prohibiting in-person contact to prevent transmission of COVID-19 during

the time period when this study was run, the research was conducted entirely online, from recruitment to intervention. In order to be included in the study, couples had to: (1) be 18 years or older; (2) be living together; and (3) have internet access in order to meet via the Zoom platform; and (4) be available for two hours on a Friday evening that was designated for the study. Both members of the dyad needed to sign a consent form; if only one member enrolled, the couple was excluded from the sample. A platform called Qualtrics was used to collect participants' data.

After consenting to be in the study, participants were randomly assigned to the intervention or control group. Couples in both groups attended a two-hour Zoom session. The intervention group experienced an ACL protocol (described below) designed to promote communication and connection, whereas the control group watched a movie together and engaged in a structured 20-minute discussion about the movie.

All participants were asked to complete the two brief surveys (IOS on closeness and CARE on relationship satisfaction) right before the Zoom session (pre), right after the Zoom session (post), and at 1-week follow-up.

As incentive to complete the surveys a week later, couples were told that those who responded to the follow-up survey would be entered into a draw for one of four available \$20 Amazon gift certificates, and that there was approximately a 1 in 8 chance of winning a gift certificate.

They were sent up to three friendly reminders to do so.

Intervention Protocol

All couples were visible on video in a gallery view throughout the session. The facilitator, the first author, introduced herself and her partner as co-creators of Functional Analytic Psychotherapy (FAP), a treatment that focuses on the authentic present-moment connection between therapists and clients. They were told that “in these unprecedented times of uncertainty, fear, overwhelm and tragedy, it is easy to take out our stress on those who are closest to us. In this session, we will focus on how to make compassionate space for yourself and your partner in order to connect more deeply during this time of crisis. We will be taking you through some tried and true exercises that we have been using for years to bring people closer together.” Below is a summary of the steps of the intervention:

- (1) A Youtube video on the power of eye contact was shown (“Staring into Someone’s Eyes”: <https://www.youtube.com/watch?v=ONYIKmdyIXg>). After watching the video, the couples were asked to actually engage in 4 minutes of eye contact with each other.
- (2) Participants experienced a 10-minute guided meditation to help them be more accepting and open-hearted; to in the moment with kindness,

curiosity and non-judgment, gently making room for struggles, concerns, and fears. They also were invited to open their hearts to their partner, to picture their relationship in its best moments, to think about what they loved most about their person, and to focus on their ability to love beyond what feels easy.

- (3) They were asked to write down answers to the following contemplation questions related to the theme of increasing connection during stressful times: (a) What are your biggest struggles currently that you need to express and hold with tenderness? What do you need your partner to understand compassionately about what you are feeling? (b) What helps you feel cared about? (c) What are you grateful for? (d) Are there ways you can be healthier—physically and emotionally? What habit do you want to change or to instill? and (e) What do you appreciate about your partner?
- (4) Couples were invited to share their responses to the questions with each other vulnerably and to listen with compassion and acceptance. A slide was shown of dos (e.g. make space for their partners to have their feelings, reflect how they were touched) and don'ts (e.g. no advice giving or telling their partners why they shouldn't feel a certain way). The co-leaders did a short demonstration on how to share with vulnerability and listen with compassion.
- (5) Participants engaged in a 1-minute "Speaking from the Heart" exercise, where they focused on the words of appreciation and love they would say if this were the only opportunity they would have to express their deepest feelings to their partner. They were told that the time limit makes them get to the heart of what is most important to convey. Again, the co-leaders did an open-hearted demonstration of this process.
- (6) They were asked to take a photo of a slide that had 12 questions for them to answer with each other weekly, including: "What has been hard for you this week that you'd like me to understand? When did you feel closest/most distant to me this past week? Is there anything you're avoiding saying or communicating to me? What have you appreciated about me this past week? How can you take better care of yourself? How can I be a better partner to you? Is there anything else you want to tell me?"

Control Protocol

The control group was led by three interpersonally skilled, female undergraduate research assistants who have been part of our University of Washington FAP/ACL lab for the past 1–2 years and are experienced in leading groups. They told the participants that couples engaging in pleasant activities together can feel a lift in mood and a sense of increased connection, and that the pleasant activity they

would get to do together was to watch the movie “Once” (Carney, 2007), a modern-day romantic musical. The couples were also told to keep their videos on while they watched the movie, and that afterwards there would be discussion questions they would answer with each other to take them deeper into the experience of “Once”. There were 12 discussion questions, such as: “What was the theme of the film? Did you learn anything from the movie? Was there something you didn’t understand about the movie? What did you like best and least about the movie? Why? Describe the use of color in the film—did it advance the emotions the film makers were trying to evoke? Did events portrayed in the film ring true? Describe the scenes that you found especially accurate. Which sequences didn’t seem to match reality? Why? How did the editing of the film advance the story that the film makers were trying to tell?”

After the couples answered the discussion questions with each other, a brief group discussion took place. At the end of the meeting, they were told that if the other intervention had better results, they would have access to it. This was possible because the protocol was scheduled to be led again as part of the Seattle Awareness, Courage, and Love Meetup.

Sample Size and Statistical Analysis

Sample size was determined a priori based on prior research using a similar paradigm (Bowen et al., 2012; Kohlenberg et al., 2015), which demonstrated that between 30 and 35 individuals per cell were sufficient to power omnibus and multiple comparison post-hoc tests evaluating the efficacy of an ACL intervention.

Chi-squared tests and *t*-tests as appropriate were utilised to compare demographics and baseline scores between the intervention and control groups. Our analysis was conducted using an intention-to-treat approach, so that all randomised couples were included. Some missing data were found to be present in the study. Specifically, one person did not complete the pre-survey, five did not complete the post-survey, and one did not complete the follow-up survey. Single point imputation was used to estimate missing values for the post-survey based on this value being a mean between pre and follow-up time points for the individual. Normality of the data was assessed using normal quantile plots and Welch’s *t*-tests were used to evaluate whether there was a significant difference in the mean change score between each of the time points on our primary and secondary outcome measures. Given that this method ignores the correlation between the couples and individuals, sensitivity analysis was performed, using multi-level generalised linear mixed modeling (GLMM) with random effects for couples and individuals to compare the change scores over time between the groups. Since this was a post-hoc sensitivity analysis, sample size was not planned in advance to power it. Post-hoc power analysis revealed that power for the interaction term was 0.44, indicating a lack of power in the model; however,

as this analysis was intended to be complementary to the original analysis, it was determined that the increased risk of type II error was acceptable. The Bonferoni method was used to adjust for multiple comparisons. Each potential demographic covariate was run through the model independently. Variables which had a *p*-value of .10 or less were included in the final model. The final multivariate model was again run using the GLMM method as set out above.

RESULTS

We found that there were no statistically significant differences between the intervention and control groups for demographic characteristics nor baseline IOS or CARE scores, or any individual items of this latter scale.

Immediately following the intervention, the intervention group’s closeness ($M = 5.79$; $SD = 1.18$) had increased by 23 per cent from before the intervention, while the control group’s closeness ($M = 5.18$; $SD = 1.4$) had increased only 2 per cent during the same period. This difference between the size of the two groups’ changes during this period was trending towards significance ($p = .077$). When comparing how much each group’s closeness changed from immediately prior to the intervention to 1 week later, a significant difference between the two groups emerged ($p = .007$). At follow-up, the control group ($M = 4.27$; $SD = 1.49$) had notably declined from the measure taken just before the intervention, while the intervention group ($M = 5.55$; $SD = 1.06$) had maintained much of their post-intervention increase (see Figure 2).

Ratings of marital quality followed an opposite trajectory (see Figure 3), such that the intervention group’s scores immediately after the intervention

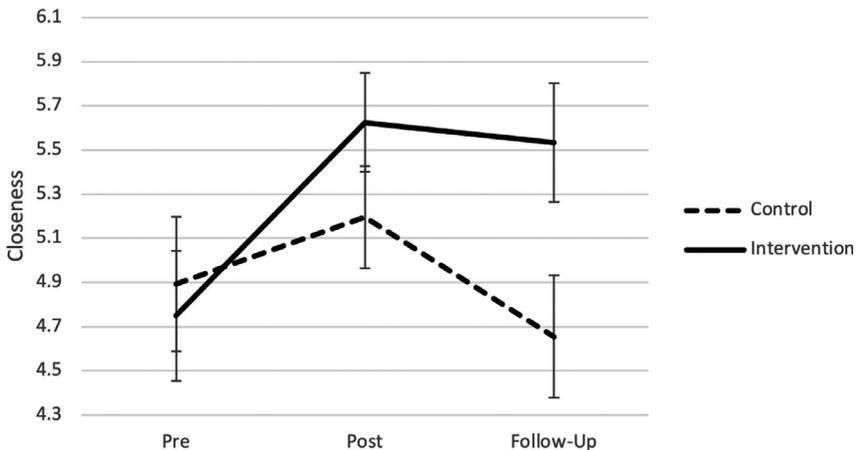


FIGURE 2. Scores on Inclusion of Self in Others scale: pre, post, and follow-up.

($M = 5.84$; $SD = 0.64$) were higher than the control group's ($M = 5.05$; $SD = 0.96$), and this represented a significantly greater increase from baseline ($p = .004$). No significant difference, however, emerged between the two groups' changes from baseline to the 1-week follow-up ($p = .19$).

The GLMM controlling for race and education produced the same pattern of results, with the exception that, unlike in the t -test, the marital quality change scores are merely trending toward significance in this model (Tables 2 and 3). Nonetheless, the model shows moderate effect sizes for both closeness from pre to follow-up and marital quality from pre to post ($d \geq 0.5$).

These quantitative results were expanded upon by comments made by the intervention group couples in the chat function that reflected the profound sense of connection they experienced during the Zoom session. Here is a sample of what was stated in chat to convey the depth of closeness that couples were feeling. After the eye gazing exercise: "I felt like I did the day we got married. I think that was the last time we ever really looked into each other's eyes." After the meditation: "I felt overwhelming gratitude for being here and now with my husband the person I love most!"

They spent the most time in the meeting, about 20 minutes, sharing with each other their responses to the contemplation questions. These statements capture the sentiment of how important it was to have this time to talk and listen deeply: "I felt a great sense of relief to share what has been so stressful lately." "We seem to never have the chance to 'really' talk. We feel like this is a jumpstart on our future conversations." "I think we have a hard time having conversations

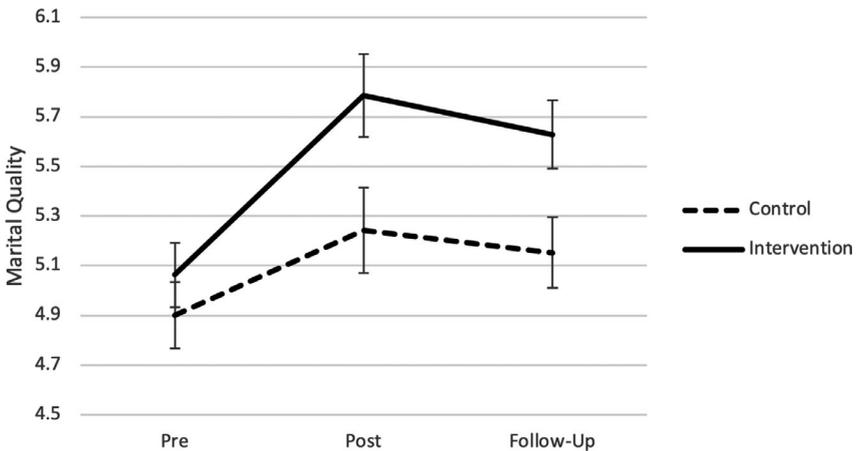


FIGURE 3. Couple Assessment of Relationship Elements Scale (CARE): pre, post, and follow-up.

TABLE 2
Results of Linear Mixed Model—CARE Scale

Time comparison	Intervention		Control		Mean difference (CI)	Cohen's d effect size	Adjusted p-value of difference ¹
	Change score mean (CI)	Change score p-value	Change score mean (CI)	Change score p-value			
Post-pre	0.72 (0.43, 1.01)	<.0001	0.34 (0.03, 0.64)	.0309	0.39 (−0.04, 0.81)	0.567	.0723
Follow-up-pre	0.54 (0.24, 0.84)	.0005	0.23 (−0.07, 0.54)	.1321	0.31 (−0.12, 0.73)	0.478	.1588
Follow-up-post	−0.18 (−0.48, 0.12)	.2384	−0.11 (−0.41, 0.2)	.4867	−0.07 (−0.5, 0.36)	−0.026	.7403

¹Using Bonferroni adjustment for multiple comparison.

about heavy topics for fear of upsetting each other. This felt like a safe exercise to start these important conversations.”

Here are two comments after the 1-minute speaking from the heart exercise: “I mostly just cried” (stated by a male) and “I shared with B that being loved by her is the most amazing thing in the world.” At the end of the session, the couples were asked to put feeling words into chat. This is a summary of what they wrote: “grateful” (11×), “connected/closer” (9×) “loved/open-hearted” (9×), “Inspired” (5×), “peaceful/relieved/hopeful” (4×).

DISCUSSION

The current study supported the conclusion that a one-session ACL intervention increased closeness between cohabiting couples. An RCT (Randomised Control Trial) design was employed with an active comparison condition and a 1-week follow-up assessment.

Quantitative results showed that the intervention generated significant improvements in our primary outcome measure, closeness, and possibly marital quality as well, although this latter result was not confirmed by sensitivity analysis. While the Welch's *t*-test comparing the marital quality change scores from pre to post found that the intervention group changed significantly more than the control group, the GLMM only found a trend towards significance for these change scores. This discrepancy may be explained by a lack of power in the GLMM, but this will need to be clarified by a fully powered RCT. Notably, the

TABLE 3
Results of Linear Mixed Model—Inclusion of Other in Self Scale

Time comparison	Intervention		Control		Mean difference (CI)	Cohen's d effect size	Adjusted p-value of difference ¹
	Change score mean (CI)	Change score p-value	Change score mean (CI)	Change score p-value			
Post-pre	1.11 (0.33, 1.88)	.0059	0.61 (-0.25, 1.47)	.1650	0.5 (-0.56, 1.55)	0.555	.3521
Follow-up -pre	1.04 (0.25, 1.84)	.0104	-0.03 (-0.88, 0.82)	.9449	1.07 (0.01, 2.13)	0.366	.0475
Follow-up -post	-0.06 (-0.85, 0.74)	.8877	-0.33 (-1.18, 0.52)	.4430	0.27 (-0.79, 1.34)	-0.097	.6087

¹Using Bonferroni adjustment and controlling for race and education.

improvements on the two outcome measures followed different trajectories: marital quality in the intervention group improved more than in the control group during the intervention itself, but there was no difference between the groups in how much marital quality changed during the subsequent week. The initial boost from the intervention tapered a bit, and although their scores were still higher than the control group's at 1-week follow-up, the difference was no longer significant. This suggests that more ACL sessions may be useful in maintaining an increase in marital quality.

Closeness in the intervention group, however, appeared to increase more both during the intervention and during the subsequent week than for the control group, although the first of these comparisons was only trending. The qualitative results, or the emotional descriptions of the intervention experienced by the intervention participants, expressed a great deal of gratitude, connection, and love.

Interestingly, the significant difference between the two groups' closeness at 1-week follow-up appears to be driven partly by a drop in the control group's closeness at this third time point, compared to their two previous ratings. Because it seems unlikely that the control group activity of watching a movie together would cause a marked decrease in closeness, especially a week later, we suspect that the control group's decline at follow-up may represent a return to their true baseline. Indeed, because the initial baseline measure was collected only a few minutes before the couples began the intervention, their closeness ratings at that time may have been artificially inflated due to their anticipation of

engaging in some kind of presumably connecting activity with each other. This may explain why the control group, experiencing no lasting effects from their protocol a week later, returned to relatively lower closeness than in either of the earlier surveys, while the intervention group, buffered by the effects of the intervention, remained elevated.

Because the control condition controlled for time spent together during the intervention, it appears that simple time spent together was not responsible for the differential improvements, and that the ACL structured experiential exercises improved relational behavior between the couples. Specifically, as described in Haworth et al. (2015), the basic functional process invoked by the intervention's experiential exercises was an exchange of vulnerability (courage) and responsiveness (love) by members of the couple, which has been shown across multiple experimental and longitudinal studies to be the basis for the development of close, intimate relationships (e.g. Aron et al., 1997; Debrot et al., 2012; Laurenceau et al., 1998; Laurenceau et al., 2005).

This pilot study has a number of limitations which need to be addressed in future research. First and foremost, sample size was planned a priori only to power Welch's *t*-tests, but we ended up supplementing these analyses with GLMM in order to provide a greater level of control. This resulted in our GLMM being underpowered, so it will be critical for future research to determine if these findings replicate with a fully powered model. Furthermore, there were a number of other limitations in this pilot study: (1) The measures were self-report only. (2) While the couples were asked to complete the surveys separate from each other, since they were quarantined together, this may have affected their ability to respond candidly to the questionnaires. (3) While any follow-up data are a strength, the 1-week follow-up only provides limited support that the benefits to the intervention participants are sustainable. Obviously, longer follow-up is required. (4) The intervention group was led by the first author, the intervention developer, raising the possibility of allegiance bias that would result in smaller, and possibly null, effects if this research were implemented by researchers independent of the intervention itself (Luborsky et al., 1996); (5) A manipulation check was not carried out to assess which couples actually completed the homework exercise. This may be a potential unexplored explanation for the follow-up effects. (6) The study hypotheses were not pre-registered, which limits the credibility of any claims that can be made based on the results. (7) Possible covariates related to the COVID-19 pandemic specifically (e.g. infection status) were not measured, yet may have influenced the outcome variables.

The limitations notwithstanding, it is meaningful that the brief ACL intervention suggests the efficacy of a single-session method in bringing couples together during times of crisis. Since people have a fundamental need for belonging, they are most likely to thrive in the face of stress when they feel closely connected to significant others, experiencing them as accepting, validating, and responsive

(Gottman & Gottman, 2018; Pietromonaco & Collins, 2017). With its relatively easy-to-administer protocol, this study also addresses the problems in our field of inconsistent adoption of evidence-based treatments (Centers for Disease Control & Prevention, 2006) that require expensive and time-consuming instruction and supervision that are not readily accessible (Addis et al., 1999).

Since our ACL protocols in general require minimal training, they offer an approach to dissemination and implementation of a promising intervention that increases interpersonal closeness and thus buffers against stress during pandemic times. It is hoped that ACL interventions will be replicated and researched as a way to meet the need for treatments that mitigate the negative mental health impacts of COVID-19.

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