ORIGINAL RESEARCH

Money Attitudes After Clinical Emotional Freedom Techniques: Psychological Change in a Virtual vs In-Person Group

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ABSTRACT

Context • Emotional Freedom Techniques (EFTs) can reduce anxiety, depression, PTSD, and phobias. Research has found correlations between attitudes toward money and anxiety and depressive symptomatology. No research has yet examined the effectiveness of EFT in changing money attitudes.

Objective • The study intended to measure the effectiveness of EFT in changing money attitudes and to contrast EFT's effects delivered virtually or in-person by evaluating multiple markers of stress, including anxiety, depression, pain, happiness, and PTSD.

Design • The research team performed a retrospective controlled study.

Participants • Participants were a convenience sample of 54 nonclinical individuals.

Intervention • The study included participants into an in-person group and a virtual group. The 24 participants in the in-person group met prior to the COVID-19 pandemic, and the 35 participants in the virtual group participated in the workshop toward the end of 2020. Both used EFT to address money-related issues during a two-day workshop.

Outcome Measures • The research team used: (1) the brief version of the Generalized Anxiety Disorder-7 (GAD-7), GAD-2, to assess participants' anxiety; (2) the Patient Health Questionnaire-2 (PHQ-2) to assess symptoms of depression over the two weeks prior to the testing; (3) the PTSD Checklist (PCL-2) to assess symptoms of PTSD over the month prior to the test; (4) the Happiness Scale, an 11-point Likert scale that indicates whether respondents feel happy in general; (5) the Numeric Pain Rating Scale, a self-rated average of pain that participants had experienced in the 24 hours prior to the test; and (6) the Money Attitudes Scale (MAS) to measure change in attitudes.

Results • Postintervention, the in-person group has significant reductions in anxiety ($P = .023$), PTSD ($P = .013$), and pain ($P = .029$) as well as significant improvements in happiness ($P < .001$). The group's MAS scores for Power-Prestige ($P = .008$), Distrust ($P < .001$) and Money Anxiety ($P < .01$) also decreased significantly. At the six-month followup, the group's mean scores showed significant decreases for PTSD ($P < .001$) and pain ($P < .001$) as well as significant improvements in happiness ($P < .05$). Postintervention, the virtual group had a significant increase in happiness ($P < .001$), but while anxiety, depression, and pain decreased, the changes weren't statistically significant. The group's money attitudes also showed a significant increase in Retention-Time ($P < .001$) as well as significantly decreased scores for Distrust ($P < .001$), Money Anxiety ($P < .01$) and Power-Prestige ($P < .01$). At the six-month followup, the virtual group's mean differences from baseline were greater than that of the in-person group.

Conclusions • The current study's findings point toward EFT's potential to improve money attitudes as well as psychological symptoms and indicated that EFT can be effective when delivered virtually. The study demonstrated improvements in anxiety, depression, pain, and happiness. The current research team recommends delivering EFT and other evidence-based therapies virtually, through apps, on-demand therapy sessions, virtual reality (VR), and artificial intelligence (AI). (*Adv Mind Body Med.* 2021;37(3):##-##.)

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Financial mindset or money attitudes can have an impact on an individual's long-term financial success.[1] Ennis et al found that money tends to be steeped in emotions,[2] and Guan et al found a link between an individual's or household's financial stressors and common mental health disorders, such as depression and anxiety.[3]

People with an attitude of scarcity tend to have a negative view of money and perceive it as a source of anxiety, fear, or disgust.[4] Those with an attitude of abundance consider money to be an instrument that can assist them to arrive at financial success.[5]

In 2011, over 100 000 people took part in BBC LabUK's Big Money Test, a survey aimed at finding out more about people's emotions and attitudes regarding money, including whether they have an impact on their financial management or whether financial knowledge and education are the main keys to good money management.[6] The study concluded that money attitudes affected participants' likelihood of experiencing adverse financial outcomes, regardless of their level of financial capability and financial knowledge. It also found that many had no financial education or roadmap, contributing to adverse financial decisions, such as spending beyond their means or accumulating debt. Due to such consequences, money can arouse strong emotions, and many individuals have deeply held, although often subconscious, beliefs about money.[7]

Money Attitudes

Yamauchi and Templer's Money Attitude Scale (MAS) measures four factors: Power-Prestige, Retention-Time, Distrust, and Money Anxiety. Power-Prestige refers to the use of money as a status symbol, to impress and influence others.[8] Retention-Time measures careful financial planning and spending behaviors that contribute to a sense of security. Distrust reflects suspicion and doubt in situations involving money, and Money Anxiety assesses worry and distress over money.

Power-Prestige. Emmons study related to Power-Prestige found that a personal quest for power, prestige, and the ability to impress others can lead to distress,[9] and Sirgy found that generally that quest could result in a lower level of well-being.[10] Purwanto and Hendratono's study with 302 credit-card users found that money, power, and prestige correlated with compulsive shopping.[11] Lejoyeux et al found that designer brands associated with power and prestige could produce a greater motivation to buy.[12]

D'Astous found that compulsive buyers were more likely to perceive purchasing as a signal of high social status,[13] and Lejoyeux et al found that compulsive buying was often associated with depression and low self-esteem.[14] Roberts et al found that participants' status consumption motivated them regularly to amass conspicuous signals of wealth and power.[15]

Retention-Time. Klontz et al's study related to Retention-Time found that attitudes and convictions favoring money vigilance—including frugality, caution, and anxiety about money—were protective against poor finances and disadvantageous financial practices.[16] The MAS Retention-Time dimension of associates individuals scoring high in the dimension with increased self-esteem.[17]

Distrust. People with distrustful relationships to money worry that they won't be financially secure in the future. A study focusing on the MAS Distrust subscale found that participants scoring high in the dimension employed conservative financial-management behaviors, such a meticulous saving.[18]

Money anxiety. Investigators focusing on people's attitudes toward money have articulated the theory of money anxiety,[19] which is characterized as the degree to which individuals stress or worry over money.[20] Yamauchi and Templer found that anxiety stemming from distrust and fear of money is one element influencing money anxiety.[8] It includes both an individual's mental evaluation of their money circumstances and their emotional reaction to that assessment.

Lim and Teo found that that reaction associates an individual's perception of his or her personal deficiencies with limited money.[20] Those researchers also found that money anxiety is a predictor of an individuals' spending and saving habits. Sharif and Yeoh found that individuals with compulsive purchasing habits show an enhanced level of anxiety about money in comparison to nonimpulsive purchasers.[21] Anxiety is the primary emotion associated with addictive or compulsive behaviors.[22]

Money Attitudes and Psychological Conditions

Some studies of psychological symptoms have found an association of financial constraints and unemployment with depression.[3,23-26] Other studies have found that financial limitations or insecurity also link to increased levels of general physical pain[27] as well as chronic spinal pain.[28] A bidirectional association exists between family financial stress and physical pain.[29]

One study measuring the connection between financial and general stress found a high degree of correlation between them.[30] A systematic review that included 26 studies, mostly performed in high-income countries, found that nearly two thirds of the studies and five out of six of the longitudinal studies reported a statistically significant, positive relationship between income inequality and risk of depression.[31]

Emotional Freedom Techniques (EFT)

Over 100 clinical trials have found EFT, an evidence-based method that combines exposure and cognitive processing with acupressure, to be effective for a wide range of psychological conditions, including anxiety, depression, and PTSD. The evidence-based form of the treatment is called Clinical EFT.[43] A recent study reviewed nine meta-analyses and 56 randomized controlled trials (RCTs) and found that Clinical EFT was efficacious for a range of psychological and physiological conditions.[48] A database of research is available online and offers regular updates with new studies.

Many past studies have demonstrated the benefits of EFT for anxiety[51,66-70] and depression.[71-73] Talaei and Kwantes found

a very large effect for anxiety associated with EFT treatment.[65] Studies with traumatized veterans,[43,74-76] gender violence victims[77] and institutionalized patients[78] have shown the efficacy of EFT for PTSD. Some studies have found significant reductions in pain after EFT in patients with frozen shoulders,[79] tension headaches,[80] fibromyalgia,[81] and chronic pain.[50] Curtin and Norris found a correlation between stress and pain.[83]

Virtual Therapy

Traditionally, during the 20th century, practitioners have delivered mental-health interventions in person. Forward-thinking trials have explored the use of telemedicine, but as an adjunct to in-person therapy rather than as primary delivery method.[32-39] After the turn of the twenty-first century, researchers making more systematic efforts recognized the benefits of telephone sessions to reach underserved populations.[40-42]

Virtual administration of therapeutic interventions has many advantages. It combines low cost with high efficiency and is flexible and convenient, because clients don't have to transport themselves to therapy sessions. Practitioners can deliver it at times of emotional duress rather than needing to schedule it in advance. Individuals can use it for self-help under most circumstances, excluding self-help for PTSD, severe clinical diagnoses, or any circumstance in which the possibility of retraumatization exists. Wireless mobile devices can deliver it. Prerecorded video and audio tracks, such as those promoting stress reduction, can be available to clients on demand.

The advent of high-speed internet services and correspondingly low-cost video sessions have led to the exploration of the viability of video therapy.[45-47] Medical interventions up to and including surgery as well as psychological assessments and treatment have used visual media. A meta-analysis that included a wide range of psychotherapy methods found a reduction in anxiety, depression, and PTSD regardless of whether the interventions occurred virtually or in person.[45]

The COVID-19 pandemic, which necessitated the closure of most in-person therapeutic services, unexpectedly affected the process of going virtual. This accelerated the migration to technology-mediated encounters.

Already over a decade of research into the therapeutic use of apps has occurred.[86] The widespread adoption of apps has made possible the delivery of therapeutic interventions such as meditation, stress reduction, and EFT. While some practitioners have been skeptical of online interventions, especially those that involve a somatic component, many have considered the use of hybrid or combined models, with good success shown across studies.

Virtual Reality (VR) and Therapy

Artificial intelligence (AI) has advanced to the point that it's able to interpret and respond to many cues from clients via audio and video inputs. Existing AI programs are able to translate the speech of a client to text, analyze it, and select a response from a database containing millions of possible responses, all in real time.

Each generation of VR software becomes more realistic, while the resolution of the hardware continues to improve, creating ever-more-immersive sensory experiences. Technologies that remove the VR goggles altogether, resulting in a multisensory holographic experience, are already in commercial development and are projected to become indistinguishable from actual reality as early as 2040.[85] As well as their most common use in gaming, programmers can develop those environments to provide therapeutic benefits as well.

Virtual Therapy and EFT

To date, two studies have made direct comparisons between EFT delivered in-person versus virtually. A study comparing an in-person relationship workshop with the same content delivered via an online course found similar outcomes for anxiety and relationship satisfaction but different demographic characteristics between the two groups of participants.[49]

In the chronic pain study mentioned previously, one group used an online self-paced version of EFT and achieved slightly better outcomes for somatic symptoms, depression, anxiety and panic disorder than the in-person group did ($P < .001$).[50] Both studies found that EFT delivered virtually can be as effective as in-person treatment. Such comparisons of online courses to in-person experiences represent a fruitful new area of research.[48]

Several factors have led to the rapid adoption of EFT in virtual environments. In late 2018, an EFT app called the Tapping Solution became available. The app consists of prerecorded tapping meditations on various topics, each around 10 minutes long. In the following four years after its introduction, over two-million users downloaded the app, while over 10-million sessions were recorded (personal communication with Nick Ortner, March 11, 2022).

A second EFT app called Stress Solution allows clients to partake in virtual sessions on demand with certified practitioners in real time, while a computer-based version of the platform is also available. Both these apps lend themselves naturally to the development of VR versions.

Such widespread adoption permits the gathering of large amounts of data. Church et al's study of the effects of the use of the Tapping Solution app during its first two years included the self-ratings of app users about psychological distress.[34] The delivery of EFT via this app made possible an analysis of a very large dataset of 270 461 app users, gathered between October 2018 and October 2019. The data was for 23 tapping meditations that addressed psychological symptoms of anxiety and stress, totaling 380 034 completed app sessions.

Across 12 anxiety-tapping meditations, that study found a statistically significant, positive difference in emotional-intensity ratings from presession to postsession ($P < .001$). Similarly, across 11 stress-tapping meditations, the study found a statistically significant difference from presession to postsession ($P < .001$).

Another study examining the PTSD symptoms of 49 veterans directly compared in-person with telephone

delivery.[43] The therapeutic modality was EFT. The study found that in-person delivery was significantly more effective than telephone sessions, with symptom remediation in 91% of the in-person participants but only in 67% of the veterans participating in phone sessions.[44] Despite the superiority of the in-person treatment, however, the treatment success rate of 67% for the telephone group demonstrated the approach's clinical utility.

Previous studies that delivered EFT virtually found long-term benefits, such as reduction in anxiety at a 12-month follow-up ($P < .001$),[52] in depression at a two-year followup ($P < .001$),[54] in chronic pain at a six-month follow-up ($P < .001$),[50] in weight at a six-month follow-up ($P < .001$),[48] in weight at a 12-month follow-up,[53] and in food cravings at a 24-month follow-up.[54]

A study that compared a workshop with a virtual EFT relationship group with an in-person one found significant improvements in depression ($P < .001$) in both groups, although the in-person group had sharper symptom declines.[49] That study also found a 29% improvement in relationship satisfaction in both groups ($P < .003$), and both maintained their gains over time. Anxiety, however, decreased in the in-person but not in the online group.

An Australian RCT with 168 chronic-pain participants provided EFT as both an online and a face-to-face treatment and found a significant reduction in anxiety from baseline to a six-month followup ($P < .001$).[50] Pain also significantly decreased in that study ($P < .001$).

A subset of the same study delivered EFT virtually to 24 adult, chronic-pain patients who received a six-week group EFT treatment and underwent a resting-state fMRI at baseline and postintervention. A repeated measures multivariate analysis of variance (MANOVA) indicated significant decreases in the levels of pain severity (21%), pain interference (26%), somatic symptoms (28%), depression (13.5%), and anxiety (37.1%), and increases in quality of life (7%), happiness (17%), and satisfaction with life (8.8%) from baseline to postintervention. Brain regions linked to pain perception were less active after treatment.

Dincer et al's RCT investigated the efficacy of a brief online EFT session in the prevention of stress, anxiety, and burnout among nurses involved in the treatment of COVID patients.[51] It occurred in the COVID department of a university hospital in Turkey, and the researchers designed it using the Consolidated Standards of Reporting Trials (CONSORT) guidelines. Reductions in anxiety reached high levels of statistical significance for the intervention group ($P < .001$). The control group showed no statistically significant changes ($P > .05$).

Some studies of EFT as a form of online intervention for weight loss have occurred. A six-week virtual program that assessed weight and psychological symptoms found significant improvement between baseline and postintevention as well as at a one-year follow-up in measures of body weight ($P < .001$) and depression symptoms ($P = 0.010$).[53] However, on follow-up, the researchers found no change in PTSD symptoms, as measured by a brief civilian trauma checklist, or in anxiety, and the increases in happiness weren't significant.

An RCT with 282 people with food cravings and obesity delivered an online, group EFT session every week for eight weeks and found that the anxiety scores had decreased postintervention ($P = .012$) and had decreased further at the 12-month follow-up ($P < .001$).[52]

An uncontrolled study of 72 clients in a six-week, online, weight-loss program using EFT found a 12-pound weight reduction during the program's six weeks, followed by a further three-pound drop in the ensuing six months ($P < .001$).[48]

Analyses of another online EFT weight loss program indicated significantly reduced scores for food cravings ($P < .001$), the power of food over behavior ($P < .001$), depression ($P < .001$), anxiety ($P = .005$), and somatic symptoms ($P < .001$).[54] Participants had maintained the gains at a two-year follow-up.

The preliminary findings of the studies mentioned above suggest that while online programs may play a role in the development of stress-reduction and interpersonal skills, practitioners can't assume that they mirror the therapeutic efficacy of in-person treatment in every dimension.

EFT and VR

Researchers expect Clinical EFT and other therapeutic modalities to follow a trajectory similar to VR generally, with tapping scripts and routines customized by AI in response to the observation of clients' body language, gestures, galvanic skin response, tone of voice, and hundreds of other potential inputs. As the technology evolves, future research might well evaluate sessions with live therapists against AI sessions, with the goal of producing steadily improved client outcomes. The combination of AI and VR might prove to be particularly potent.

For many years, the US Department of Defense (DOD) has been using and studying the use of virtual reality (VR) to treat PTSD.[84] Ellie is a screen-based online AI therapist developed by the US Defense Advanced Research Projects Agency (DARPA). Veterans and active duty service members suffering from PTSD have rated her as surprisingly effective.[87]

Currently no EFT program exists for use with virtual reality (VR) goggles, but it's only a matter of time before one is available.

Current Study

The current study is the first study to measure the benefits of EFT in changing money attitudes. Newcomb and Rabow found clear links between attitudes to money, the regulation of emotion, and success in managing money, making an assessment of EFT's effect on money attitudes timely.[55]

The current study intended to measure the effectiveness of EFT in changing money attitudes and to contrast EFT's effects delivered virtually or in-person by evaluating multiple markers of stress, including anxiety, depression, pain, happiness and PTSD.

METHODS

Participants

The research team performed a retrospective controlled study. Potential participants were a convenience sample of nonclinical individuals. The in-person group met prior to the COVID-19 pandemic, and the virtual group participated in the workshop toward the end of 2020.

The ethics committee of the National Institute for Integrative Healthcare approved the study's protocols and found that the study to present minimal risk of harm to participants.

Procedures

Groups. The study included participants in an in-person group and a virtual group. Both used EFT to address money-related issues during a two-day workshop. The research team retrospectively collected data after the workshops and couldn't therefore randomize the assignments to groups, which explains why the number of participants in person and virtually weren't equal.

In-person EFT delivery. The in-person group met in a hotel meeting room for two consecutive days. The first part of the program focused on how to practice EFT, followed by explanations of how to apply it to money-related issues. These included the money attitudes of one's family of origin, money goals, negative money experiences, and the emotional connotations of money, wealth, prosperity and abundance. EFT sessions were offered by the trainer to particular participants, witnessed by the whole group who self-applied EFT while watching.

Virtual EFT delivery. The second group met via teleconferencing, also over the course of two consecutive days. The psychoeducational component of the virtual program was identical to that of the in-person program. When the instructor worked with a particular individual, both were highlighted on the screen, while other group members self-applied EFT while watching.

Rates of anxiety and depression rose worldwide during the pandemic. After it began, the instructor, the first author, began to use a set of teaching practices called active learning, which the education department at Harvard University had developed.[82] These practices include: (1) providing the instructor with feedback about what participants are learning, such as through online chat and quizzes; (2) helping participants connect new concepts to prior knowledge in meaningful ways and to construct their own understanding, such as sharing insights in virtual breakout rooms; and (3) providing them a platform to collaborate with other participants, such as observing and commenting on chat posts and breakout room sessions. All these practices promote engagement, connection, and motivation among the participants and the instructor during a virtual session.

Outcome measures. The research team used: (1) the brief version of the Generalized Anxiety Disorder-7 (GAD-7),[58] GAD-2, to assess participants' anxiety; (2) the Patient Health Questionnaire-2 (PHQ-2)[60,61] to assess symptoms of depression over the two weeks prior to the testing; (3) the PTSD Checklist (PCL-2)[62] to assess symptoms of PTSD over the month prior to the test; (4) the Happiness Scale[63]; (5) the Numeric Pain Rating Scale,[64] a self-rated average of pain that participants had experienced in the 24 hours prior to the test; and (6) the Money Attitudes Scale (MAS) to measure changes in attitudes.

Intervention

The curriculum for both events was identical, and the same trainer, the first author, who is certified in Clinical EFT, taught both. The content included eight 90-minute modules, taught four per day with breaks in between. The trainer instructed the virtual group to use desktop or laptop computers rather than mobile phones to enhance their experience.

The first modules focus on performing EFT and moves progressively into common money obstacles, with their attached emotions. These include family stories about money and early childhood experiences around money, wealth, and abundance. The trainer also addressed common social cliches, such as, "Money doesn't grow on trees," "The love of money is the root of all evil," and "There's never enough for everyone."

Participants performed EFT as described in The EFT Manual.[56] The trainer selected volunteers and worked with them in front of the room, while all participants tapped on their own issues. This technique is called Borrowing Benefits, and Church and House found that it can produce rapid amelioration of emotional distress.[57]

Outcome Measures

Participants completed a survey at baseline, postintervention, and at a six-month follow-up, manually at the in-person event and online at the virtual event. The research team collected the follow-up data for both events online. The survey consisted of eight questions from empirically established measures, which assessed symptoms of anxiety, depression, PTSD, general happiness and pain, as described below.

GAD-2.[58] The GAD-2 examines if participants: (1) were feeling nervous, anxious, or on edge, and (2) weren't able to stop or control worrying. The scores ranged from 0 = not at all to 3 = nearly every day, and the test sums them to produce an overall anxiety score from 0 to 6, with higher scores indicating higher symptoms of anxiety. GAD-2 has demonstrated appropriate reliability (Cronbach's $\alpha = 0.79\text{-}0.84$).[59]

PHQ-2.[60,61] The PHQ-2 correlates with the GAD-7, supporting its construct validity. The scale has good sensitivity (79%) and specificity (86%) for screening depressive symptomatology. The test sums the item scores to produce a range of scores from 0 to 6, with higher scores indicating possible clinical levels of depression.

PCL-2.[62] The PCL-2 has high sensitivity, providing a reliable indicator of clinically significant change, and the armed services use it as a PTSD screener for military veterans. Possible scores range from 2 to 10, with higher scores indicating possible clinical levels of psychological distress.

Happiness Scale.[63] The 11-point Likert scale evaluates general happiness, indicating whether respondents felt happy in general, with 0 = not at all to 10 = very.

Numeric Pain Rating Scale.[64] The scale ranges from 0 = not at all to 10 = worst pain imaginable. Researchers consider the scale to be a valid measure of acute pain, strongly correlating with the verbally administered numerical rating scales (NRSs).

MAS.[8] The scale consists of 29 items, with responses recorded on a 7-point Likert scale with never and always as end points. The scale has four subscales to assesses four broad psychological aspects of money: (1) Power-Prestige, such as "I use money to influence other people to do things for me"; (2) Retention-Time, such as "I do financial planning for the future"; (3) Distrust, such as "I argue or complain about the cost of things I buy"; and (4) Money Anxiety, such as "It's hard for me to pass up a bargain."

The research team directed participants to rate the extent to which each statement was an accurate description of the participants' feelings, behavior, and thoughts toward money. Yamauchi and Templer reported good internal reliability for the scale with a Cronbach's Alpha for the entire MAS of 0.77,[8] and Talaei and Kwantes found a range of 0.69 to 0.80 for its sub-dimensions.[65]

Statistical Analysis

The research team employed the SPSS, (IBM, Armonk, New York, the United States) for statistical analysis. The team analyzed: (1) measurement data, expressing the data as means ± standard deviations (SDs), compared that data between time points by group using paired samples *t* tests, and compared the groups using the independent samples *t* test; and (2) count data, expressing the data as numbers and percentages (%), and compared the groups using the chi-square test, χ^2. $P < .05$ indicates significant differences.

RESULTS

Participants

Analysis of data. The study included 59 participants at baseline (Figure 1). For the in-person group, 24 participants completed the outcome measures at baseline and postintevention, and 14 of those original 24 participants completed them at the six-month follow-up. Of the original 24 participants, data were available for six participants both postintervention and at the six-month follow-up.

For the original 24 participants, seven data points were missing for the MAS at baseline, but no data were missing for them postintervention nor for the 14 participants at the six-month followup. The research team used interpolation to determine the values of missing data at baseline by graphing the 7 missing data points using participants' responses for the items postintervention and at the six-month follow-up. The team couldn't performed that technique for one participant who didn't complete the six-month follow-up; however, the team completed a substitution because her responses were identical at baseline and postintervention for sub-factor 2 (Retention-Time), when totaled.

For the virtual group, complete data for 35 participants were available at baseline. In that group, only 28 of the 35 participants completed the entire battery of items postintervention, and therefore, the research team analyzed data only for the 28 participants in the final dataset from baseline to postintervention. Seventeen completed the follow-up, and no data were missing. Table 1 summarizes the demographic data for both groups.

In-person group. The group's mean age was 50.56 ± 9.65 years, with a range of 35 to 72 years. Of the 24 participants, 21 were female (87.5%), and 12 had a graduate degree (50%), followed by 10 who had an undergraduate degree (41.7%), with a high school diploma being the least common, for 2 participants (8.3%).

Virtual group. The group's mean age was 51.04 ± 8.93 years, with a range of 27 to 77 years. Of the 35 participants, 32 were female (91.4%),], and 17 had a graduate degree (48.6%), followed by 15 who had a undergraduate degree (42.9%), with a high school diploma being the least common, for 3 participants (8.5%).

Outcome Measures at Baseline

Table 2 shows the groups' mean scores at baseline for the MAS. No significant differences existed between the groups

Figure 1. Participants' Flow Chart

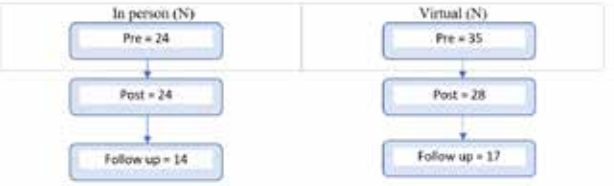


Table 1. Demographic Characteristics of In-person and Virtual Groups at Baseline (N=59)

Characteristics	In-person Group n = 24 Mean ± SD n (%)	Virtual Group n = 35 Mean ± SD n (%)
Age, y		
Mean	50.56 ± 9.65	51.04 ± 8.93
Range	35 - 72	27 - 77
Gender		
Female	21 (87.5)	32 (91.4)
Male	3 (12.5)	3 (8.6)
Education		
Graduate degree	12 (50.0)	17 (48.6%)
Undergraduate degree	10 (41.7)	15 (42.9%)
High School degree	2 (8.3)	3 (8.5%)

Table 2. Mean Scores for Money Attitudes at Baseline Before EFT Treatment for the In-person and Virtual Groups (N=59)

Attitudes	In-person Group n = 24 Mean ± SD	Virtual Group n = 35 Mean ± SD
Money Anxiety	22.75 ± 5.31	22.3 ± 5.63
Distrust	22.38 ± 6.30	21.43 ± 8.09
Retention-Time	29.29 ± 8.04	27.87 ± 9.67
Power-Prestige	20.04 ± 6.80	20.8 ± 7.36

[Authors: Please add *P* values for the differences between baseline and postintervention in table 3 & 4.]

in the money attitudes at that time point.

Outcome Measures Postintervention

Table 3 shows the changes between baseline and postintervention for the in-person group. The group had significant reductions in anxiety (P = .023 PTSD (P = .013), and pain (P = .029). On the MAS, their scores significantly decreased for Power-Prestige (P = .008), Distrust (P < .001), and Money Anxiety (P < .001). The group also had a significant increase in happiness (P < .001). However, no significant changes occurred in the scores for depression or MAS Retention-Time.

Table 4 shows the changes between baseline and postintervention for the virtual group. The group had significant increases in happiness (P < .001) and MAS Retention-Time (P < .001) as well as significant decreases in Distrust (P < .001) and Money Anxiety (P < .001). No significant differences existed for anxiety, depression, PTSD, pain, or Power-Prestige.

The difference in the mean scores between baseline and postintervention for both groups showed positive outcomes for all money attitudes and psychological symptoms with the exception of PTSD for the virtual group (Table 5).

Outcome Measures at the Six-month Follow-up

Table 6 shows the changes in scores between baseline and the six-month follow-up for the in-person group. The group had a significant increase, a negative outcome, for anxiety (P = .238), depression (P < .001), and

Table 5. Comparison of Mean Differences Between Baseline and Postintervention of the In-person and Virtual Groups

Outcome Measure	In-person Group n = 24 Mean Difference	Virtual Group n = 28 Mean Difference
Anxiety	-0.59	-0.27
Depression	-0.21	-0.07
PTSD	-0.76	0.34
Happiness	0.83	1.04
Pain	-0.54	-0.36
Power-Prestige	-2.16	-0.92
Retention-Time	1.80	4.86
Distrust	-4.41	-3.17
Money Anxiety	-3.46	-2.68

Table 3. Changes Between Baseline and Postintervention for the In-person Group (n = 24)

Outcome Measure	Baseline Mean ± SD	Postintervention Mean ± SD	Mean Difference	*t*	*P* value	95% CI LL, UL
Anxiety	1.38 ± 1.28	0.79 ±0.72	-0.59	24.43	.023[a]	0.09, 1.10
Depression	0.71 ± 1.00	0.50 ± 0.93	-0.21	1.31	.000	-0.12, 0.54
PTSD	4.46 ± 1.84	3.71 ± 1.49	-0.76	2.70	.013[a]	0.18, 1.32
Happiness	7.75 ± 1.45	8.58 ± 1.10	0.83	-5.82	<.001[b]	-1.13, -0.54
Pain	2.58 ± 2.52	2.04 ± 2.22	-0.54	2.33	.029	0.60, 1.02
Power-Prestige	19.83 ± 6.64	17.67 ± 6.85	-2.16	2.55	.008	0.41, 3.92
Retention-Time	28.58 ± 7.72	30.38 ± 7.97	1.80	-1.63	.317	-4.07, 0.48
Distrust	22.29 ± 6.33	17.88 ± 5.87	-4.41	4.58	<.001[b]	2.42, 6.41
Money Anxiety	22.75 ± 5.31	19.29 ± 6.13	-3.46	2.98	<.001[b]	1.06, 5.86

[a]P < .05, indicating that the in-person group had significant reductions in anxiety, PTSD, pain, and Power-Prestige between baseline and postintervention
[b]P < .001, indicating that the in-person group had significant decreases in Distrust and Money Anxiety and a significant increase in happiness between baseline and postintervention

Table 4. Changes Between Baseline and Postintervention for the Virtual Group (n = 28)

Outcome Measure	Baseline Mean ± SD	Postintervention Mean ± SD	Mean Difference	*t*	*P* value	95% CI LL, UL
Anxiety	1.43 ± 1.61	1.17 ± 1.42	-0.27	1.09	.230	-0.23, 0.77
Depression	0.97 ± 1.30	0.90 ± 1.27	-0.07	0.39	.473	-0.29, 0.42
PTSD	4.13 ± 1.96	4.47 ± 2.42	0.34	-0.87	.622	-1.12, 0.45
Happiness	7.13 ± 1.76	8.17 ± 1.68	1.04	-4.04	<.001[a]	-1.56, -0.51
Pain	2.23 ± 2.42	1.87 ± 1.77	-0.36	1.23	.066	-0.24, 0.98
Power-Prestige	20.46 ± 7.49	19.54 ± 7.91	-0.92	1.12	.271	-0.77, 2.62
Retention-Time	28.18 ± 9.51	33.04 ± 10.01	4.86	-4.16	<.001[a]	-7.25, -2.46
Distrust	20.96 ± 8.07	17.79 ± 8.05	-3.17	3.69	<.001[a]	1.41, 4.95
Money Anxiety	21.64 ± 5.18	18.96 ± 7.00	-2.68	3.45	<.001[a]	1.06, 4.27

[a]P < .001, indicating that the in-person group had significant increases in happiness and Retention-Time and significant decreases in Distrust and Money Anxiety between baseline and postintervention

Table 6. Changes Between Baseline and Six-Month Followup for the In-person Group (n = 24)

Outcome Measure	Baseline Mean ± SD	Six-Month Followup Mean ± SD	Mean Difference	*t*	*P* value	95% CI LL, UL
Anxiety	1.38 ± 1.28	2.07 ± 1.00	0.69	-2.20	.238[a]	-1.35, -0.04
Depression	0.71 ± 1.00	2.29 ± 1.65	1.58	-5.04	<.001[b]	-2.23, -0.93
PTSD	4.46 ± 1.84	2.86 ± 0.71	-1.60	3.97	<.001[b]	0.77, 2.44
Happiness	7.75 ± 1.45	8.57 ± 1.34	0.82	-2.27	.097	-1.57, -0.07
Pain	2.58 ± 2.52	1.21 ± 0.67	-1.37	2.77	.145	0.35, 2.39
Power-Prestige	20.57 ± 6.64	17.86 ± 4.67	-2.71	2.00	<.001[b]	-.22, 5.65
Retention-Time	30.57 ± 7.00	38.14 ± 8.90	7.57	-4.30	<.001[b]	-11.38, -3.76
Distrust	22.29 ± 6.47	17.57 ± 5.60	-4.72	3.88	<.001[b]	2.09, 7.34
Money Anxiety	22.36 ± 5.46	18.07 ± 4.53	-4.29	3.68	.003[b]	1.77, 6.80

[a]P < .05, indicating that the in-person group had significant increases in anxiety and happiness between baseline and the six-month follow-up
[b]P < .001, indicating that the in-person group had significant increases in depression, PTSD, Power-Prestige, and Distrust and a significant decrease in Retention-Time between baseline and the six-month follow-up

Table 7. Changes Between Baseline and Six-Month Followup for the Virtual Group (n = 28)

Outcome Measure	Baseline Mean ± SD	Six-Month Followup Mean ± SD	Mean Difference	*t*	*P* value	95% CI LL, UL
Anxiety	1.43 ± 1.61	1.21 ±1.28	-0.22	1.02	1.00	-0.22, 0.67
Depression	0.97 ± 1.30	0.72 ± 0.78	-0.25	1.54	.238	-0.08, 0.57
PTSD	4.13 ± 1.96	3.53 ± 1.12	-0.60	2.12	.042[a]	0.02, 1.19
Happiness	7.13 ± 1.76	8.12 ± 1.20	0.99	-3.16	.004[b]	-1.62, -0.35
Pain	2.23 ± 2.42	2.00 ± 1.51	-0.23	0.67	.346	-0.48, 0.95
Power-Prestige	20.80 ± 7.48	20.38 ± 10.22	-0.45	0.22		-3.51, 4.34
Retention-Time	27.87 ± 9.46	33.16 ± 8.80	5.29	-2.90	.007[b]	-9.04, -1.56
Distrust	21.43 ± 8.14	17.39 ± 4.83	-4.04	2.60	.015[a]	0.85, 7.24
Money Anxiety	22.30 ± 5.59	19.09 ± 5.57	-3.21	3.50	.002[b]	1.33, 5.08

[a]$P < .05$, indicating that the virtual group had significant decreases in PTSD and Distrust between baseline and the six-month follow-up

[b]$P < .01$, indicating that the virtual group had significant increases in happiness and Retention-Time and a significant decrease in Money Anxiety between baseline and the six-month follow-up

Table 8. Comparison of Mean Differences Between Baseline and the Six-Month Followup of the In-person and Virtual Groups

Outcome Measure	In-person Group n = 24 Mean Difference	Virtual Group n = 28 Mean Difference
Anxiety	0.69	-0.22
Depression	1.58	-0.25
PTSD	-1.60	-0.60
Happiness	0.82	0.99
Pain	-1.37	-0.23
Power-Prestige	-2.71	-0.45
Retention-Time	7.57	5.29
Distrust	-4.72	-4.04
Money Anxiety	-4.29	-3.21

Figure 2. Comparison of Mean Scores for MAS Power-Prestige, Distrust, and Money Anxiety for the In-person Group at Baseline, Postintervention, and at the Six-month Follow-up

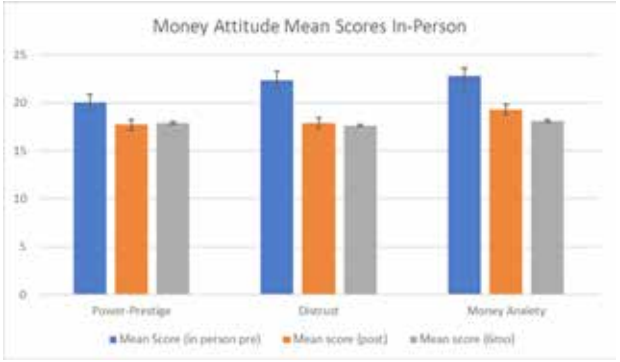
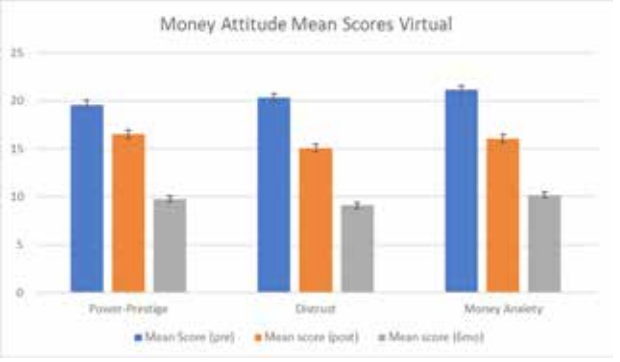


Figure 3. Comparison of Mean Scores for MAS Power-Prestige, Distrust, and Money Anxiety for the Virtual Group at Baseline, Postintervention, and at the Six-month Follow-up

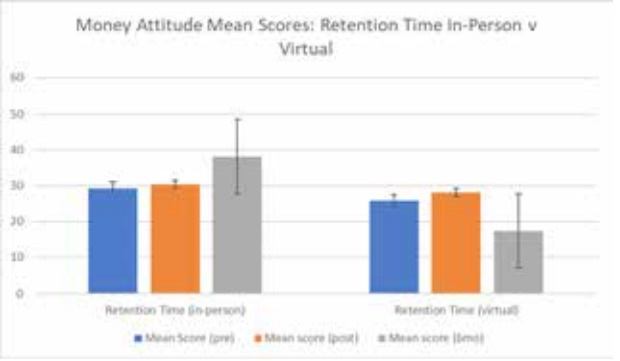


PTSD ($P < .001$). Three of the MAS scores also significantly increased: Power-Prestige ($P < .001$), Retention-Time ($P < .001$), and Distrust ($P < .001$). No significant change occurred for the Money Anxiety. Happiness also increased significantly ($P = .097$).

Table 7 shows that the virtual group had a significant increase in happiness ($P = .004$), and a significant decrease in PTSD ($P = .042$). The group's MAS Retention-Time also significantly increased ($P = .007$), while Distrust ($P = .015$) and Money Anxiety ($P = .002$) both significantly decreased. No significant differences existed for anxiety, depression, pain, or Power-Prestige.

The differences in the mean scores between baseline and postintervention for both groups were very different from those between baseline and the six-month follow-up (Table 8). The virtual group had better outcomes than the in-person group for three MAS factors and four psychological symptoms, but the outcome was similar for happiness and Retention-Time for the in-person group was higher. A mean difference of +31.42 in Retention-Time may suggest that in-person participants had greater behavior changes, such as planning and budgeting.

Figure 4. Comparison of Mean Scores for MAS Retention-Time for the In-person and Virtual Groups at Baseline, Postintervention, and at the six-month followup



MAS Comparison at All Time Points

For the changes in the scores for Power-Prestige, Distrust, and Money Anxiety across the three time periods, at baseline, postintervention, and at the six-month followup, Figure 2 shows the changes in the mean MAS scores for the in-person group, and Figure 3 shows the changes for the virtual group. These changes suggest that participants were

inclining toward favorable money behaviors, such as planning and saving.

Figure 4 shows a comparison between the groups in the mean scores for Retention-Time, which postintervention had increased significantly for the in-person group and decreased significantly for the virtual group.

DISCUSSION

The current study was the first to examine the effects of EFT tapping on money attitudes and psychological conditions. It also compares the efficacy of an EFT intervention delivered in-person versus to that delivered virtually. At baseline, the demographic characteristics of both groups were similar, and no significant differences existed between them in either psychological symptoms or money attitudes.

At the six-month follow-up, the virtual group's money attitudes were far superior to those of the in-person group. The disparity between the groups and the extent of the superiority of the virtual group were the current study's most striking and surprising findings. At six months, the virtual group had maintained its gains for all psychological outcomes, with statistically significant results observed for PTSD ($P = .042$) and happiness ($P = .004$). Similarly, except for Power-Prestige, the virtual group was able to maintain all benefits for money attitudes with Retention-Time ($P = .007$), Distrust ($P = .015$) and Money Anxiety ($P = .002$), showing statistically significant results.

The PTSD scores were also significantly lower in the virtual group at the six-month follow-up than postintervention. This reflects many clinical case histories describing how tapping on past traumatic events can collapse emotions attached to many similar events and lead to a substantial decrease in psychological symptoms over a period of time.

The results of the current study are consistent with those of previous EFT studies that demonstrated the long-term benefits of EFT, even when delivered virtually.[48,50,52-54,] The results further confirmed those of many past studies demonstrating the benefits of EFT for anxiety, depression, PTSD, and pain.[43,50,51,66-81]

The study had several limitations. Both groups used a within-group pre-post design, comparing participants' results at baseline and postintervention. The study had no group controlling for the well-established effects that result from any type of psychological treatment. While the research team performed the data collection and analysis independently, one investigator delivered the treatment itself, raising the possibility that therapeutic allegiance might have influenced the results.

Also, future studies might consider the results of the same training when given by a different instructor to find out if the instructor's influence had an impact on the results. Moderate attrition occurred between postintervention and follow-up, so the research team can't assume that nonresponders had the same improvements at the six-month follow-up. Also, the sample was relatively small. While significant effects with a small sample can indicate a robust treatment effect, confirmation of the results requires replication with larger sample size.

Future studies can look into having equal numbers in both groups and compare the results with the current study to understand what the impact of having unequal numbers was. The current study had 91% females; future studies should include an equal number of both males and females to see if any variation in results occur.

Another confounding factor was the 2020 pandemic, which resulted in changes to the research team's method of delivery. While specific evidence for the effects of such changes is absent, it may have been a contributing factor in the positive results identified in the virtual group in the current study.

The reasons for the virtual group's better follow-up results on several scales than those of the in-person group is a topic for future study. One hypothesis is that in-person participants received the intervention in a special setting, such as a retreat or conference center, while the virtual participants received it at home.

The in-person setting is filled with novel environmental cues, and participants experience a transformative therapy in a setting unlike the home environment to which the participants are accustomed. When they return home and are exposed to all the environmental cues of their familiar surroundings and aren't in a special setting, their behavior might default to their habitual patterns, erasing much of the gain they made in the novel environment.

Virtual participants, in stark contrast, experience the intervention in the midst of their familiar environmental cues, with no novelty factor driving the transformation. Quite to the contrary, they are embedded in their familiar home environment with all its existing emotional and behavioral cues. These might become associated with the new enhanced experience, not only with the old familiar experience. During the follow-up period, their home environment might then remind them of their transformative experience and become a source of reinforcement for their new learnings, rather than a distraction from them. It will require studies with a sophisticated design to tease out these possible effects.

While the current study didn't focus on correlations between psychological symptoms and money attitudes, it's worthwhile to note the reduction in both state anxiety and Money Anxiety at postintervention and at the six-month follow-up in both groups. The current study's of a decrease in both PTSD and pain in both groups supports that of a prior meta-analysis.[65] Many other EFT studies have found that both decline together.

The current research team's recommendations for future research include performing correlation studies between psychological symptoms and money attitudes. Since the results of the current study showed improved Retention-Time, which is indicative of positive behavioral changes such as planning and budgeting, and reduced Money Anxiety,

further studies could deepen the understanding of those effects. Studies with large populations, robust controls, and independent investigators could further elucidate the current findings.

Future studies could also compare the efficacy of EFT to that of other evidence-based interventions, such as cognitive behavior therapy (CBT) and Eye Movement Desensitization and Reprocessing (EMDR). Given global economic uncertainty, the high rates of anxiety around money found in the studies in the introduction to this article and the way these impede effective financial functioning, researchers should further explore the use of EFT for remediating those stresses.

The virtual group in the current study attended a live, not a prerecorded, two-day workshop to make the intervention as similar as possible to the earlier in-person group, but a prerecorded intervention might also be effective.

Practitioners can deliver EFT and other therapies virtually through several platforms. In the current study, the research team instructed participants to use laptop or desktop computers and not mobile phones, so they would see a large screen area and have the processing power of a computer available to support the video feed. However, people are successfully using EFT on smaller devices for both live and prerecorded sessions, such as the Tapping Solution and Stress Solution apps referenced in the introduction.

For the many reasons stated above, we recommend the prioritization of research testing virtual interventions.

CONCLUSIONS

The current study's findings point toward EFT's potential to improve money attitudes as well as psychological symptoms and indicated that EFT can be effective when delivered virtually. The study demonstrated improvements in anxiety, depression, pain, and happiness. The current research team recommends delivering EFT and other evidence-based therapies virtually, through apps, on-demand therapy sessions, virtual reality (VR), and artificial intelligence (AI).

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