**The Lasting-Change Study**

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| **Table 1. Initial demographic characteristics.** | | |
| **Characteristic (*N*=727)** | ***n*** | **Proportion** |
| **Age** (18-68) Mean (SD) | 44.34 (10.9) |  |
| **Gender** |  |  |
| Men | 241 | 33.1% |
| Women | 488 | 66.5% |
| Other or prefer not to say | 3 | 0.4% |
| **Education** |  |  |
| Some High School | 7 | 1.0% |
| High School | 145 | 19.9% |
| Trade School | 48 | 6.5% |
| Bachelor’s Degree | 288 | 39.6% |
| Master’s Degree | 171 | 23.3% |
| PhD or higher | 50 | 6.9% |
| Prefer not to say | 18 | 2.5% |
| **Race** |  |  |
| Caucasian, European, White | 416 | 57.2% |
| Latino or Hispanic | 131 | 18.0% |
| Asian | 58 | 8.0% |
| Black or African American | 28 | 3.9% |
| Native American or Alaska Native | 4 | 0.4% |
| Native Hawaiian or Pacific Islander | 3 | 0.3% |
| Other or Combination | 42 | 6.0% |
| Prefer not to say or omitted | 45 | 6.2% |
| **Income** |  |  |
| More than $200,000 | 138 | 19.0% |
| $100,000-200,000 | 204 | 28.1% |
| $50,000-100,000 | 164 | 22.6% |
| $25,000-50,000 | 92 | 12.7% |
| Less than $25,000 | 70 | 9.6% |
| Prefer not to say | 59 | 8.1% |
| **Children** |  |  |
| None | 258 | 35.5% |
| 1 | 124 | 17.1% |
| 2 | 196 | 27.0% |
| 3 | 97 | 13.3% |
| 4+ | 52 | 7.2% |

**TO UPDATE**

**Study Population and Recruitment Process:** 727 participants were profiled at baseline, at day-6 end of the seminar, one month later, and 3-, 6-, and 12-months post-baseline. The eligibility criteria were participants who are English Speakers, reside in the United States, are over the age of 18 years old, and who voluntarily chose to participate in the DWD seminar prior to consenting to participate in the current research study. Participants were excluded from participation if they had any physical or mental conditions that limits their ability to participate in the study (e.g., answering e-questionnaires and wearing an electronic device), had a serious active comorbidity or terminal illness, were pregnant, or were participating in another clinical study or program focusing on psychological or behavioral intervention.

**Preliminary results:** In total, 727 participants completed the initial baseline questionnaire. The average age of the participants was 44.3 (SD=10.9); the youngest participant was 18 years old, and the eldest—68 years old. Most of the participants were women, at 66.4%. A majority of the participants had academic degrees (70.0%), most of which were bachelor’s degrees (39.6% of the entire study population). People who identified as Caucasian, European, or White were the most dominant of all races, at 57.2%, followed by people who identified as Latino or Hispanic, at 18.0%. Most participants were homeowners (56.0%), and 33.3% were renters. An income between $50,00 and $200,000 was reported most commonly (50.7%). Full-time business owners were most widely represented in the study population (34.5%), followed by people who were employed full-time, at 27.0%. Most participants were married or in relationships (54.6%), and had children (64.6%). The complete demographics data is presented in Table 1.

**Assessments:** All the participants have completed a brief socio-demographic questionnaire at baseline, prior to the mind-body intervention, which contained assessments of participant age, gender, education levels, race, home ownership, marital status, income, employment, and children. The following validated surveys will be utilized for all following timepoints:

Stress: The Perceived Stress Scale (PSS-10; CITE) will be used to measure the stress experienced by participants in the previous month (10 items). Oldenburg Burnout Inventory (OLBI-16; CITE) will be used to measure burnout aspects (16 items). All stress scales utilized for the study showed good and very good and excellent reliability between 0.880-0.932. Well-being: The World Health Organization Brief Quality of Life Index (WHOQOL-BREF-26; CITE) will be used to assess changes in the participants’ quality of life in 4 domains: physical health, psychological health, social relationships, and environmental health (26 items). The PERMA Profiler (CITE) will be used to measure flourishing across 5 domains: positive emotion, engagement, relationships, meaning, and accomplishment (23 items). The Wheel of Life survey (CITE) will assess the participants’ goals and satisfaction levels with various areas of their lives (14 items). The General Self-efficacy Scale (GSE-10; CITE) will be used to assess one’s general belief in their ability to succeed in specific situations or accomplish a task (10 items). The Professional Fulfillment Index (PFI-16): a scale that assesses the degree of intrinsic positive reward we derive from our work, including happiness, meaningfulness, contribution, self-worth, satisfaction, and feeling in control when dealing with difficult problems at work (16 items). Gratitude Questionnaire (GQ-6) will be used to assess changes in the feeling so gratitude towards life (6 items). The Connor-Davidson Resilience Scale (CD-RISC-10; CITE) will be used to measure resilience, which is the ability to thrive in the face of adversity (10 items). All stress scales utilized for the study showed good reliability between 0.826-0.890. Additional measures: A growth vs Fixed Mindset Assessment (CITE) will be utilized to measure how much the participants believe they can change (20 items). **Mind-body states**: The participants also completed multiple 1-minute **EMA survey** that will assess their momentary mood, energy, focus, connection to the moment and clarity levels throughout the intervention and will continue to complete these EMA surveys at weekly intervals throughout the follow-up periods. These surveys were designed to assess peak mind-body states. Similar assessments have been used to assess momentary levels of stress [CITE], mood [CITE], and flow state [CITE].

**Procedure:** Participants will be sent survey measures via email at baseline, at day-6 end of the seminar, one month later, and 3-, 6-, and 12-months post-baseline., and will continue to complete weekly EMA surveys 3 times a week throughout the follow-up period

**Correlations (TO UPDATE)**:

We assessed the correlations between all of the scales utilized for the study at each checkpoint. As illustrated in the correlation matrix (Figure 1, TO ADD), The strongest correlations appeared between and (r=-., p <.001), (r=.66, p <.001) and (r=.58, p <.001). Resilience was positively correlated with (r=.68, p <.001), (r=.60, p <.001), and (r=.62, p <.001), and negatively correlated with (r=-., p <.001) and (r=-.55, p <.001). The strongest correlations for stress appeared with burnout (r=., p <.001), (r=-., p <.001) and (r=, p <.001). Burnout had a correlation with (r=, p <.001) and (r=-.55, p <.001).

**A screenshot of a graph

Description automatically generatedImpact of the intervention of stress and burnout:** We observed a significant reduction in mean (SD) stress scores of the participants 3 months after the intervention (18.89 [6.6] vs 13.88 [6.5]; p <.001). Further, statistically significant differences from baseline were observed for all three dimensions of professional fulfillment, including fulfillment (2.18 [0.94] vs 2.78 [0.90]; p < .001), emotional exhaustion (1.84 [0.96] vs 1.13 [0.86]; p < .001), and disengagement (1.28 [0.96] vs 0.71 [0.79]; p < .001). The improvement remained stable between C3 and C4 (p>.05). A similar change was observed for burnout, including in its subscales of disengagement (18.71 [4.6] vs 16.35 [4.4]; p <.001) and exhaustion (19.31 [4.3] vs 16.32 [4.3]; p <.001): it decreased significantly following the intervention and into the C3 (p <.001) and remained stable between C3 and C4 (p>.05).

**A screenshot of a graph

Description automatically generatedImpact of the intervention on well-being factors:** We observed significant improvements in all the dimensions of the PERMA model for well-being between C1 and C4 and the total score for well-being (6.26 [1.5] vs 7.49 [1.4]; p <.001). The positive changes in the domains of well-being continued into C3 for positive emotion (C1 to C4: 6.21 [1.7] vs 7.43 [1.5]; p <.001), meaning (C1 to C4: 6.22 [2.0] vs 7.71 [1.6]; p <.001), and accomplishment (C1 to C4: 6.28 [1.6] vs 7.49 [1.5]; p <.001), to then stabilize between C3 and C4 (p>.05), and stabilized following the C2 for engagement (C1 to C4: 6.68 [1.7] vs 7.65 [1.5]; p <.001) and relationships (5.92 [2.0] vs 7.16 [1.9]; p <.001). We observed a significant improvement in mean (SD. Further, statistically significant differences from baseline were observed in the mean scores for resilience (28.20 [5.7] vs 32.70 [5.4]; p < .001) and self-efficacy (31.46 [4.3] vs 34.20 [4.5]; p <.001). Similarly, we found statistically significant differences in the mean scores for gratitude, which improved immediately following the intervention and did not change significantly at the following checkpoints (C1 to C4: 36.99 [5.4] vs 38.42 [4.8]; p <.001).

**Impact of the intervention on quality of life:** At C4, statistically significant differences from baseline were observed in mean (SD) scores for all four domains of Quality of Life as defined by WHO: physical health (14.58 [2.5] vs 16.35 [2.4]; p <.001), psychological health (12.07 [2.2] vs 14.03 [2.2]; p <.001), social relationships (11.82 [3.5] vs 13.57 [3.6]; p <.001) and environmental health (13.25 [2.6] vs 16.01 [2.5]; p <.001).

**Comparison group:** In order to determine the effect of the DWD mind-body intervention, we have recruited a comparison group of 699 participants using the Qualtrics online polling company platform. The Qualtrics platform allows rapid access to representative sample of the adult population in USA through online surveys. Recruited participants have met the same eligibility requirements as the intervention group, and have been matched to the intervention cohort using propensity score matching. A majority of the comparison group members are women (65.8%), most have bachelor’s degrees (43.4%) or master’s degrees (20.9%). People who identified as Caucasian, European, or White were the most dominant of all races, at 58.2%, followed by people who identified as Latino or Hispanic, at 19.7%. An income between $50,00 and $200,000 was reported most commonly (62.9%). These participants have been given the same psychometric surveys as the intervention group.

**intention-to-treat analysis**: An intention-to-treat analysis approach will be implemented for this longitudinal trial, and all participants will be included in the data processing. The core analysis strategy in this project is longitudinal mixed effects modeling (previously described by our group, CITE), where we fully utilize the repeatedly measured study outcomes. Differences between the groups will be tested using mixed-model analysis assessed at baseline, day-6 (end of intervention), one month later, and 3-, 6-, and 12-months post-baseline. The dependent variables will be the study outcomes, and the independent variables will be time (T1-T6), group (LASTING-CHANGE and control), and interaction between the time × group. The difference between the outcome variables will be measured using the entry values (T1) and the final values gathered at the end of the follow-up (T6). Control for multiple comparisons will be done using the Bonferroni approach [Cite]. An analysis of the research hypotheses of the categorical variables and variables without normal distribution will be performed according to the general estimated equation. The similarity of baseline (T1) demographic characteristics of participants in the comparison and intervention groups will be assessed using the χ2 test for categorical variables and independent samples t-test for continuous variables. To ensure the appropriateness of our analysis, we will plot distributions for all measures and changed scores. Data points that are missing due to subject attrition or dropout will be handled assuming that data are missing at random (MAR) conditional on observed information, which is a well- accepted practical approach in modern longitudinal analysis. In this procedure, all available cases including the ones with missing information will be included in the analyses. In this estimation framework, all group comparison analyses will be conducted in line with the intention to treat principle (i.e., compare groups “as randomized”). All data will be processed independently by 2 researchers. *P* values are 2-sided, and statistical significance will be set at *P* = .05.