# Abstract 1-v.3: Leadership Pilot

## *MetaBrain App Feasibility for Leadership Development.*

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**Abstract:** Leadership development programs are common, however, there is a need for new methods of delivering leadership development. (McKinsey Quarterly, 2017).[1] Cognitive Mindset restructuring program for leadership coaching is a novel application that is feasible to implement in the workplace. MetaBrain (previously branded as GenoEmote) integrates electroencephalogram (EEG) data collection with a chatbot interface, aims to enhance leadership qualities among employees in the food manufacturing and distribution sector.

**Study Design:** A pilot was conducted between August 22, 2022, and October 17, 2022, at a site in Lancaster County, PA. The convenience sample comprised six individuals undergoing a Shank workplace leadership development program with 1 hour of training over fourteen days. Different modes of delivery (app-based versus in-person) were implemented to evaluate leadership-related attribute improvement. A randomized pilot intervention was structured to evaluate the Meta Brain Leader Program App, utilizing an EEG-enabled headset for real-time data analysis. Participants were divided into three groups: a control group (n=2) performing relaxation breathing exercises, an in-person therapeutic session group (n=2) employing cognitive reframing techniques and a MetaBrain App group (n=2) using the chatbot to identify and perform cognitive reframing.

The total Intervention was scheduled for 30 days with assessments at time 0, mid-point (day 14 or 15) and post intervention, day 30. A pre-post questionnaire, developed by Ed Krow and Cytometrix was implemented at time 0-baseline 2 questions (n=6) followed by post test assessment for the Adaptive Therapy Live (9 questions), Meta Brain App (14 questions), and control (2 questions). The leadership interventions consisted of the Shank traditional in person coaching program from day 0 to Day 14 followed by assigned interventions over a second two-week period comparing the 3 groups described above with twice-daily reinforcement. Data collection involved both qualitative and quantitative measures, with qualitative assessments utilizing Cykometrix evaluations in key developmental areas, including Dependability, Empathy, Conscientiousness, and Agreeableness.

**Results:** Six participants completed the intervention and details on the baseline demographics are not available for the 6 participants. All participants responded to baseline question that emotions in the workplace lead to success always or Usually (67%). Shank qualitative survey results resulted in the following leadership improvement themes: awareness (4 comments), acceptance (3comments); usability and application (6 comments), positive behaviors (4 comments). Cykometrix evaluations resulted in Incremental improvements(2 to 16%) were observed across all attributes measured: Dependability, a 2% increase; for Empathy, a 5% increase; for Conscientiousness, a 5% increase; and for Agreeableness, a 16% increase.

| ATTRIBUTES | BEFORE | AFTER | IMPROVEMENT |
|---|---|---|---|
| Dependability | 73.39 | 75.07 | 2% |
| Empathy | 77.78 | 81.83 | 5% |
| Conscientiousness | 72.22 | 76.29 | 5% |
| Agreeableness | 70.42 | 84.17 | 16% |
| Team Effectiveness | 81.12 | 87.42 | 7% |
| Team Climate | 70.46 | 73.90 | 5% |

**Conclusions:** Leadership improvement interventions are feasible to implement in the work setting and participants demonstrated benefits with all three interventions. The MetaBrain app is a viable tool for leadership development, meriting further investigation in larger sample sizes to substantiate these findings.

1Ref: McKinsey Quarterly. What's Missing in Leadership Development. August 1, 2017. Available at URL://https://www.mckinsey.com/featured-insights/leadership/whats-missing-in-leadership-development