

**Title:**

Effect of Full spectrum + Near-infrared Low-Level Light Therapy (LLLT) on quality of sleep, mood, stress and burnout.

**Authors:**

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**Objective:** To investigate the effect of Full spectrum + Near-infrared Low-Level Light Therapy (LLLT) on quality of sleep, mood, stress and burnout.

**Methods:** Healthy participants (n= 9) signed an Informed Consent Form, were asked to complete online questionnaires - Pittsburgh Quality of Sleep Index (PQSI), Perceived Stress Scale (PSS), Profile of Mood States (POMS) and the Maslach Burnout Inventory (MBI) - at baseline and after 4 weeks of undergoing daily 15-minute exposure to Full spectrum light mode (FSL) followed by an additional 15-minute exposure to Near-infrared (NIR) mode of the SOL PhotoVites™ LLLT device.

**Results:** Results indicate that 4-week daily exposure to FSL followed by NIR LLLT significantly affected mood ( $p < 0.05$  when comparing baseline with post-intervention evaluation in the POMS questionnaire - Figure 1), decreased self-reported anger and increased self-reported vigor ( $p < 0.05$  in the corresponding POMS subscales - Figure 2); and decreased stress ( $p < 0.05$  in the PSS questionnaire - Figure 1). Additionally, intervention increased quality of sleep (PQSI) and signs of burnout (MBI - Figure 3), although data was not statistically significant.

**Conclusion:** 4-week daily exposure to Full spectrum light followed by Near-infrared Low-Level Light Therapy with the SOL PhotoVites™ device positively affected mood, decreased self-reported anger and increased vigor, as well as decreased stress. Additional effects were also present in increased quality of sleep and reduced signs of burnout, although these data need to be further validated. Given the positive outcomes obtained with a small sample size, additional research is awarded.

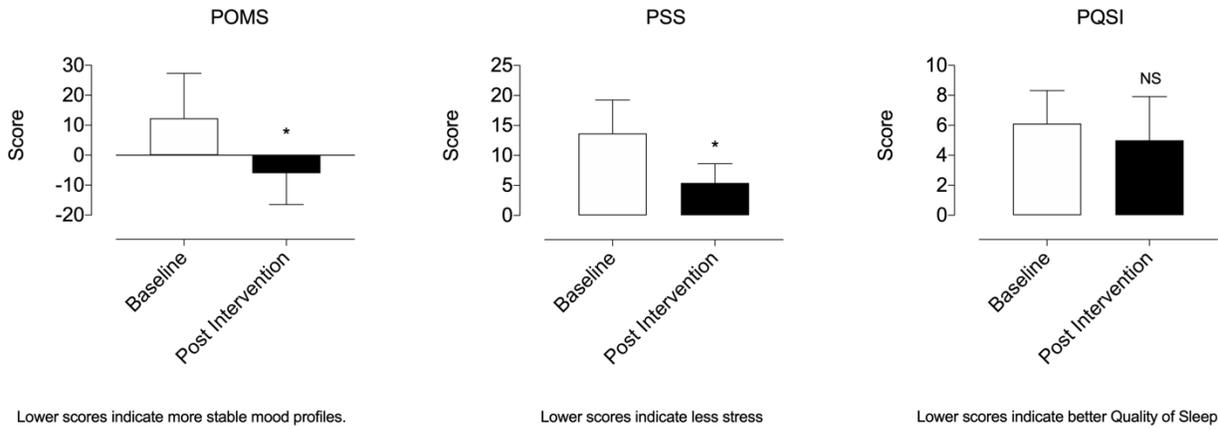
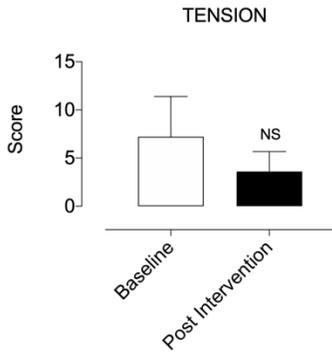
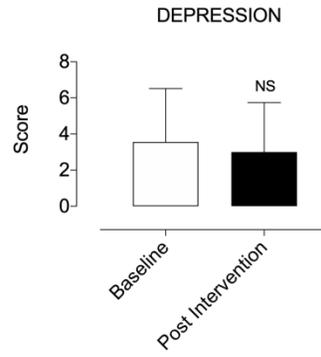


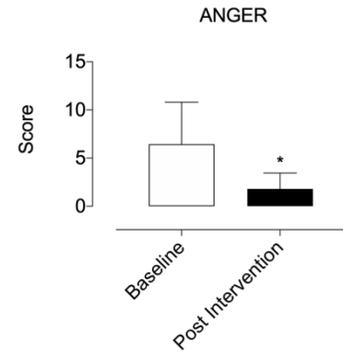
Figure 1 - Effect of Full spectrum + Near-infrared Low-Level Light Therapy (LLLT) on Mood (Profile of Mood States - POMS), stress (Perceived Stress Scale - PSS), and Quality of Sleep (Pittsburgh Quality of Sleep Index – PQSI). NS = Not statistically significant. \* $p < 0.05$  (paired T-Test 95% with a confidence interval - Graphpad Prism software, USA).



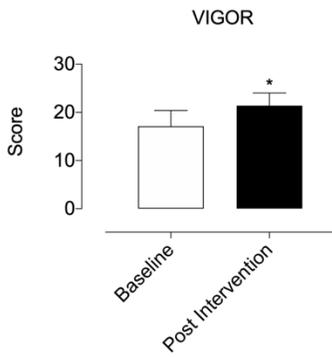
Lower scores indicate more stable mood profiles.



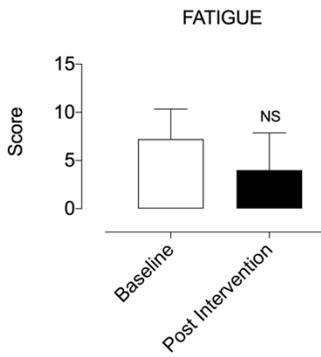
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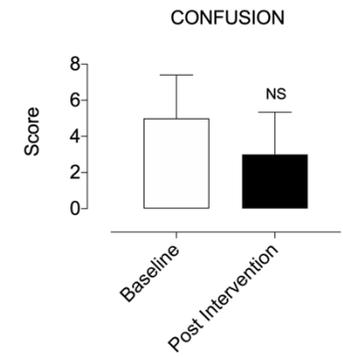
Lower scores indicate more stable mood profiles.



Higher scores indicate more stable mood profiles.



Lower scores indicate more stable mood profiles.



Lower scores indicate more stable mood profiles.

Figure 2 - Effect of Full spectrum + Near-infrared Low-Level Light Therapy (LLLT) on mood subscales (Profile of Mood States - POMS). NS = Not statistically significant. \* $p < 0.05$  (paired T-Test 95% with a confidence interval - Graphpad Prism software, USA).

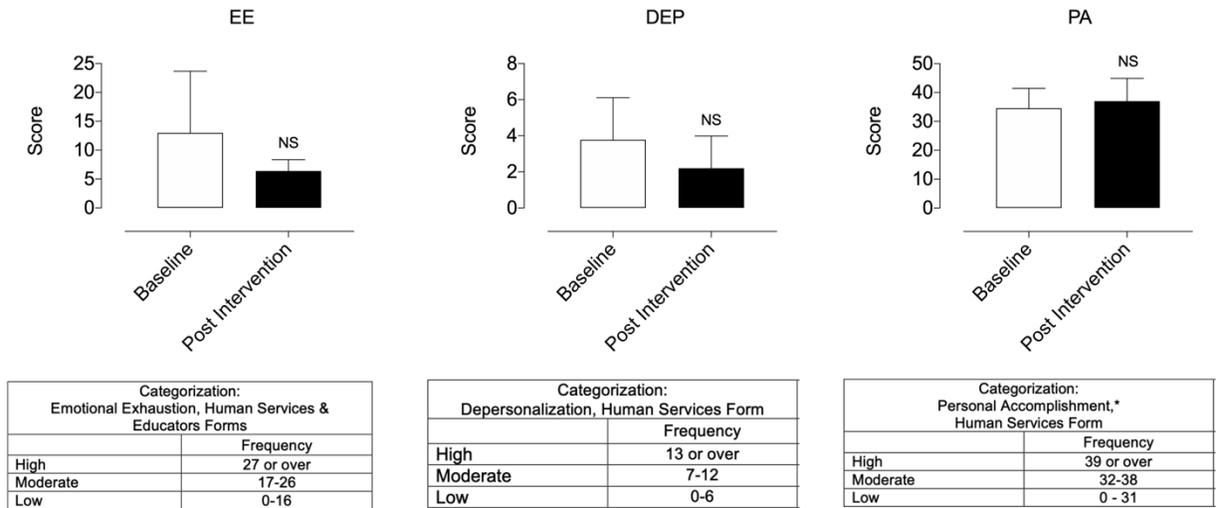


Figure 3 - Effect of Full spectrum + Near-infrared Low-Level Light Therapy (LLLT) on burnout (Maslach Burnout Inventory). NS = Not statistically significant. \* $p < 0.05$  (paired T-Test 95% with a confidence interval - Graphpad Prism software, USA).