

# Jobs in the Garden (JIG): An Evaluative Study of the Chicago Botanic Garden Veteran Internship Program (CBG-VIP)

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## Introduction/Background

- Mental health disorders are a major global health concern with an increasing global prevalence.<sup>1</sup>
- Stress and anxiety are challenges relevant to conflict-affected populations; this study focuses on veteran populations<sup>1-2</sup>
- Time in nature reduces stress and anxiety.<sup>3</sup>
- CBG-VIP is a summer transitional job training program providing work experiences, mentorship, and therapeutic horticulture.

## Study Aims

- To evaluate CBG-VIP and identify the contribution of program components to reducing stress and anxiety
- To contribute to the evidence base on transitional support programs and the mental health of conflict-affected populations

## Methods

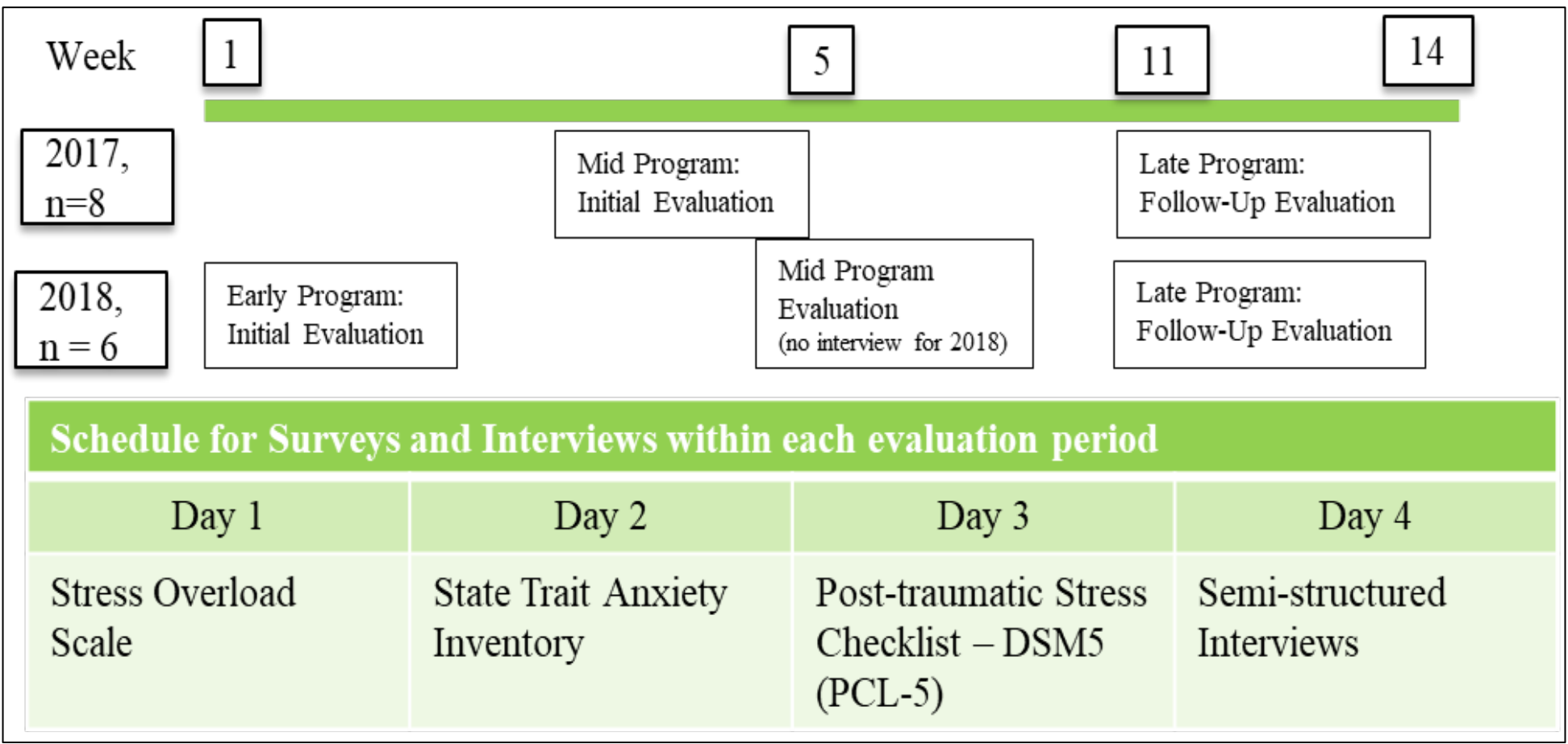


Figure 1. JIG Study Design: A mixed methods design was employed across the 14-week internship program. Administration of stress and anxiety psychological surveys listed at Early Program, Mid Program, and Late Program evaluation points for 2017 and 2018. Semi-structured interviews were conducted twice.

## Quantitative Results

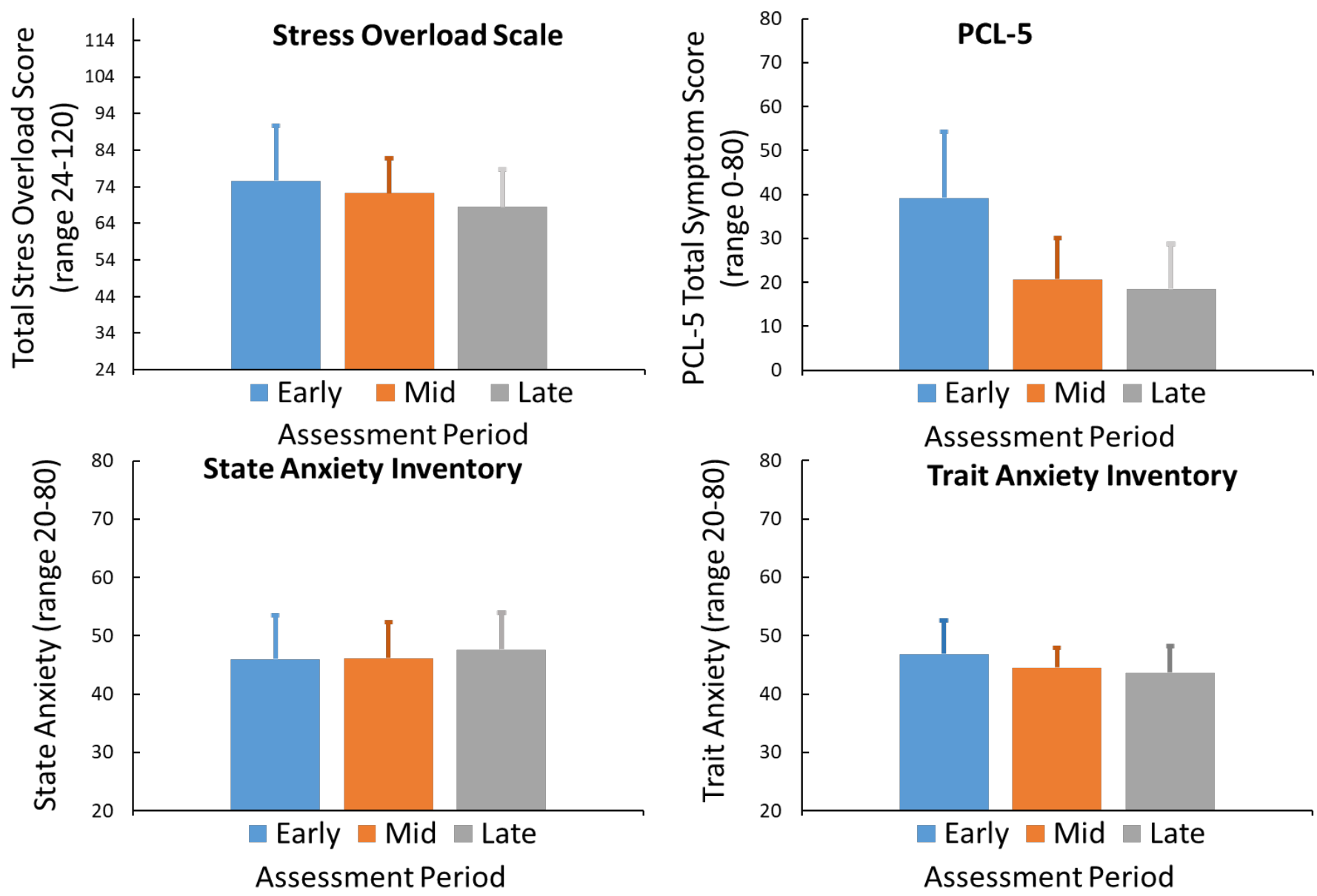


Figure 2: Average Scores for Stress and Anxiety Psychological Surveys (Means + SD, both years).

**Graphical trends suggest improvements in stress and anxiety**

- Stress Overload Scale: no significant difference, ANOVA (2018)  $F = 0.03$ ;  $p = 0.97$
- **PCL-5: Trend toward improvement, ANOVA (2018)  $F = 2.74$ ,  $p = 0.1$**
- State Anxiety: no significant difference, ANOVA (2018)  $F = 0.03$ ;  $p = 0.97$
- Trait Anxiety: no significant difference, ANOVA (2018)  $F = 0.91$ ,  $p = 0.42$

## Qualitative Results

"I will be forever changed; this was an ethereal experience...so peaceful, so serene...it's just meditative being here in the presence of plants." (JIG002b)

**Job Training:** increased self-confidence and self-efficacy in job performance/search, acquisition of vocational skills, transition of skills to civilian workplace  
**Professional Development:** familiarity with resume/cover letters, mock interviews, expanded professional network  
**Therapeutic Horticulture:** increased nature engagement, use of nature for wellness, interest in life science careers

**Supportive Workplace** (emergent theme): positive workplace culture and community, veteran-specific resources and programming

- **100% of participants discussed benefits of CBG-VIP**



## Results

- Overall trends: **Declines in stress and anxiety, especially PTSD and Trait anxiety**, observed in survey results and interview responses
- Three project components, **especially engagement with nature**, and emergent theme of supportive workplace contributed to additional benefits and **psychological resources to aid improved mental health outcomes**
- Small sample size and large degree of variation limit power of inferential statistics

## Conclusions and Implications

- **CBG-VIP may reduce stress and anxiety overall in participants**
- Participants started with low stress (Stress Overload Scale)
- Decrease in PTSD symptoms, trending decreases in anxiety (Trait)
- High degree of variability in quantitative data due to range of age and background, differing academic interests
- Qualitative results support trends observed in quantitative data and identify contributions of the program components
- **Next steps:** Additional year of data with all evaluation periods.

## Relevance to Global Health

- Gardens connect people to other humans and nature, which reduces stress and anxiety
- Studies the impact of a transitional support program on a vulnerable, conflict-affected population: military veterans
- Explores the emerging field of health benefits of nature and use of nature-based interventions to improve health

## References

- <sup>1</sup>Charlson, F.; van Ommeren, M.; Flaxman A.; Cornett J.; Whiteford, H.; Saxena S. "New WHO Prevalence Estimates of Mental Health Disorders in Conflict Settings." *Lancet* 2019; 394: 240-48.
- <sup>2</sup>Wilcox SL, et al. A scope of the problem: Post-deployment reintegration challenges. *Work*. 2015;50(1):73-83
- <sup>3</sup>Frumkin, H., et al. (2017). "Nature Contact and Human Health: A Research Agenda." *Environ Health Perspect* 125(7): 075001.