



**Project CHAI
for 2**

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Research Institution/Setting



- This study was a Community Academic Partnership (CAP) among Rutgers, The State University of New Jersey, Sai Datta Peetham temple in Edison NJ, and St. George's Syro-Malabar Catholic Church in Paterson NJ

Study Population

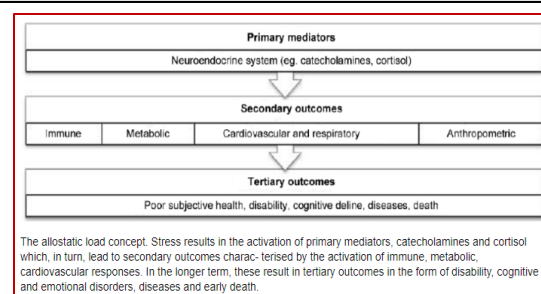
- First generation Asian Indian (AI) immigrants, 18-70 yrs of age, living in New Jersey ($n = 42$). AI immigrants are the second largest immigrant group in the US; NJ has the 3rd largest population of AI immigrants, with a mix of new and older immigrants from many regions of India.
- Als have a high prevalence of elevated BMI, truncal obesity and premature cardiovascular disease (CVD), often beginning during the 30s and 40s.

Background, Unmet Need

- Among AI immigrants, acculturation stress may impact CVD risk.
- Cortisol levels are typically highest in the morning, decreasing across the day and evening. With acute stress, cortisol levels are often high. With chronic stress, cortisol levels may be lower, with a flattening of the diurnal pattern.
- There is a lack of studies addressing cortisol norms among Als.

Casual Diagram/ Theoretical Framework

Figure 1



Aims of the Project

The aims of this study were to:

- 1) Establish reference values for salivary cortisol among AI immigrants enrolled in the Cardiometabolic Health of Asian Indians (CHAI for 2) dyadic pilot intervention.
- 2) Determine if the CHAI for 2 intervention was successful in decreasing stress levels.

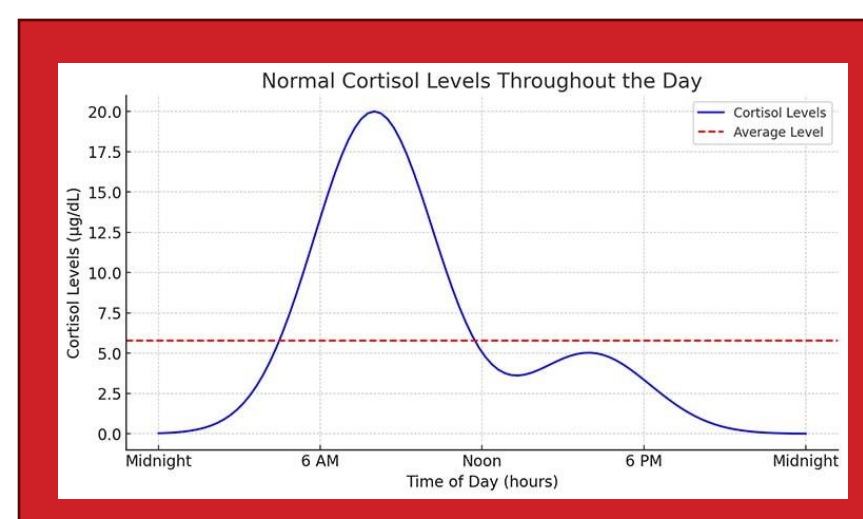
Pilot Project Design/ Procedures

- Participants were given Passive Drool sample kits along with instructions to collect three salivary cortisol samples in a 24-hour period- upon rising, ½ hour later, and at bedtime. Samples were collected on 2 dates, 1 before and 1 after the intervention.
- Samples were stored in a -80-degree Celsius freezer, then shipped to d to Salimetrics Core Lab and analyzed.

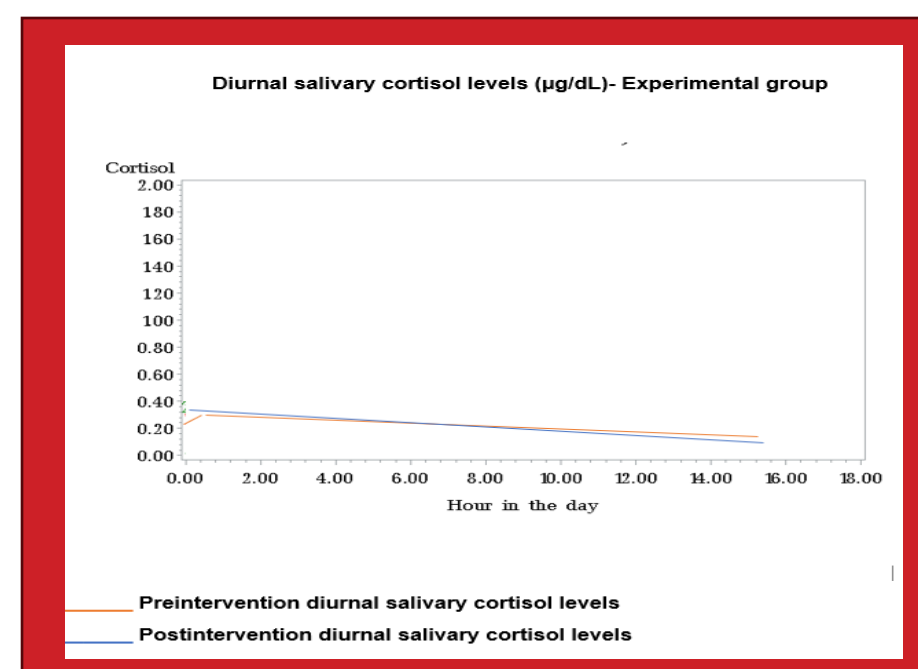


Results

- Mean age of sample participants ($n= 42$) was 46.60 years ($SD = 6.68$, $R= 33-61$ yrs).
- Five cortisol parameters were calculated pre- and post-intervention (in micrograms/dL): 1) waking level; 2) ½ hour later; 3) bedtime level; 4) area under curve (AUC) and 5) diurnal slope.
- In this study, the range of pre and post intervention values ran from .100-.418 μg (.276-1.153 nmol) . These values were significantly lower than levels reported in adult majority populations in Europe and the US (CRICORT Study) (Miller et al, 2016). (Figure 1)
- Figure 1. *Normal diurnal cortisol levels*



- Salivary cortisol levels in CHAI for 2 followed the typical circadian response, and while there was a trend toward significance ($p = 0.07$), there were no statistically significant within-subjects differences in salivary cortisol levels pre- and post intervention for any of the five parameters (Figure 2).
- Figure 2. *Differences in pre and post intervention diurnal cortisol levels-CHAI for 2 study*



Key Partners/ Community Engagement

- Community partners-Sai Datta Peetham Hindu temple in Edison, NJ and St. George's Syro-Malabar Catholic Church in Paterson NJ. Peer leaders/community health workers in the photos.



Takeaways

- In this small sample, as compared to White European-American norms, cortisol values for Als were lower and curves were relatively flat. Similar results were obtained in a pilot study last year ($n = 83$).
- Flattened cortisol slopes are normally associated with chronic stress. Chronic psychosocial stress due to acculturation may contribute to cortisol dysregulation and a flatter cortisol slope.
- The 12-week CHAI for 2 intervention may not have been long enough to have a significant impact on stress levels. It may be that a longer intervention is needed.
- Further testing with larger samples to establish salivary cortisol norms in the AI immigrant population is advised.

References

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