

Examining the Impact of Racial Stress on Fatigue and Inflammation in Black Adults with Heart Failure: Implications for Patient Care

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Our study reveals a strong link between institutional racism and heightened fatigue symptoms, reduced motivation, and chest pain, alongside elevated IL1-beta cytokine levels in Black adults with heart failure, underscoring the impact of social determinants of health on disease progression and symptom severity.

Introduction

Heart Failure (HF) poses a growing concern, marked by its escalating prevalence and a sobering 50% mortality rate within 5 years of diagnosis. Of particular concern is the disproportionate burden faced by Black individuals, experiencing higher incidence, earlier onset, and graver outcomes compared to other racial groups. This stark reality underscores the urgent need to delve into the intricate interplay of social determinants of health with chronic stress and inflammatory processes.

Purpose

The purpose of this study is to examine the connection between racial stress, inflammation (interleukin [IL]-1beta and IL-6), and fatigue in Black adults with HF.



Acknowledgements

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Methodology

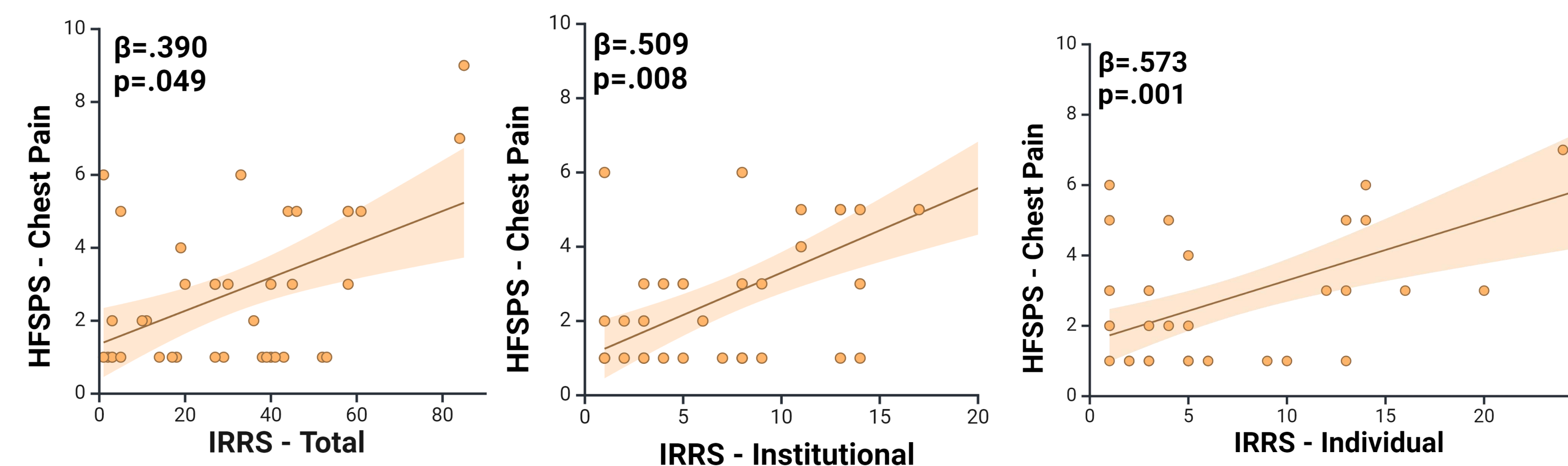
- **Participants:** 41 self-reported Black adults aged 30-80 with diagnoses HF
- **Questionnaires:** Racial Stress (IRRSB), Physical Symptoms (HFSPS, MFI, SF-36)
- **Cytokines:** Dried blood spot collection using Mitra microsamplers, measured via multiplex immunoassay
- **Statistical Analysis:** Correlation analysis, linear regression, identification of covariates included controlling for ejection fraction (LVEF), age, gender, and standard cardiovascular comorbidities (CCI).

Results

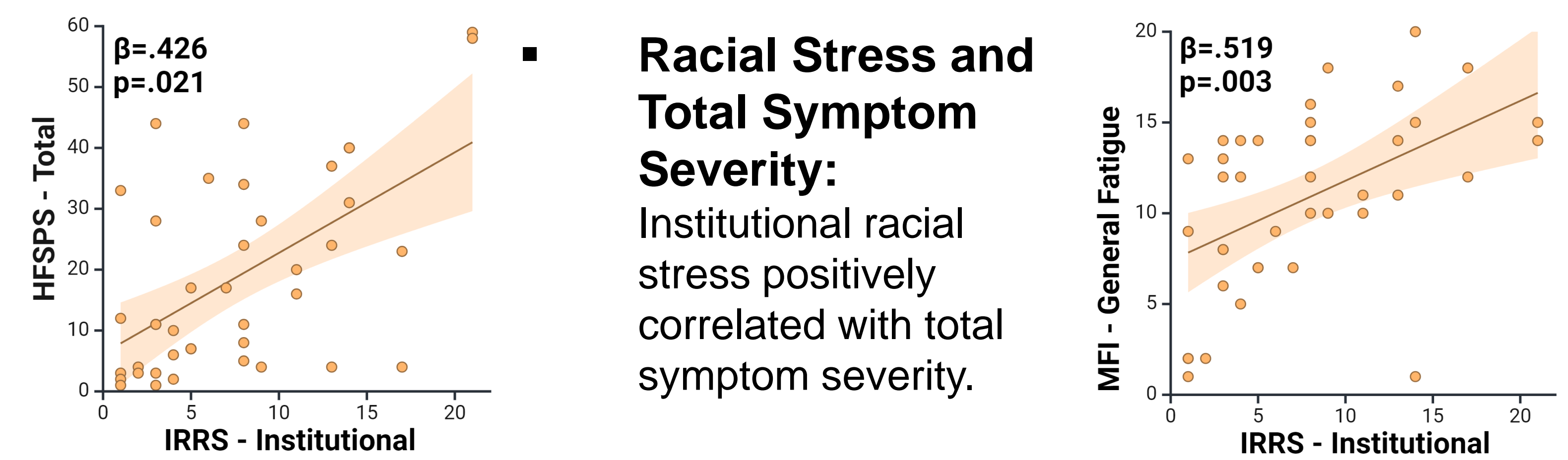
Study Sample:



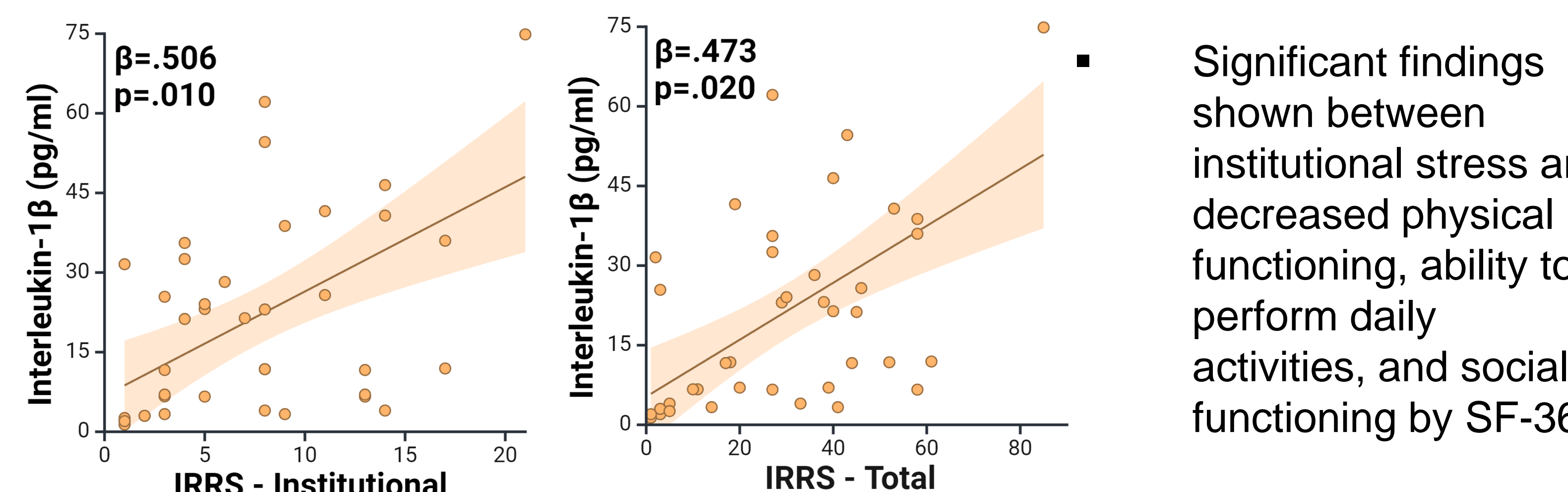
- **Racial Stress and Chest Pain:** Positive correlation between chest pain with institutional, individual, and total racial stress.



- **Racial Stress and MFI:** Positive correlation with increased general, physical, and mental fatigue and reduced motivation.



- **Racial Stress and IL1-beta:** Institutional and total racial stress showed increased levels of IL1-beta.



- Significant findings shown between institutional stress and decreased physical functioning, ability to perform daily activities, and social functioning by SF-36.

Conclusion

- **Impact of Institutional Racism on Fatigue:** Clear correlation with increased fatigue, decreased motivation, and physical symptoms.
- **Relationship Between Racial Stress and Somatic Symptoms:** Institutional racism's significant impact of fatigue, reduced motivation, and increased chest pain.
- **Connection Between Racial Stress and Cytokine IL-1beta:** Positively correlated with institutional and total perceived racism, emphasizing the link between psychosocial stressors and inflammation.
- No significant finding related to cultural race related stress or IL-6, indicating a need for further research.
- Race related stress is individualized and subjective for everyone, emphasizing the importance of holistic care

Implications

These preliminary findings suggest a vital association between racial stress and HF symptoms. Further research is essential to unravel the underlying pathways. Addressing racial stress in HF patient care may enhance holistic treatment strategies.