

Salivary Cortisol as a Biomarker of Daily Stress in the PSID

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Paper Outline

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I. Introduction of Cortisol as a marker of HPA regulation

A. Description of Hypothalamic-pituitary-adrenal axis (HPA) and its role in stress process

B. Function of Cortisol in the Mobilization of Energy in response to stressors

1. Laboratory studies

2. Field Studies

C. Diurnal Rhythm of Cortisol: Window into chronobiology

1. Cortisol Awakening Response

2. Daily Decline

3. Day to Day Variation: Effects of schedules, time use, and daily stressors

II. Links between Diurnal Cortisol and Health

A. Physical Health

1. Specific indicators (immune functioning, cardiovascular health, obesity)

2. Composite Measures (allostatic load)

B. Mental Health

1. Affective well being (depression, fatigue, psychological distress, overall well-being)

2. Cognitive Functioning III. Group and individual differences in Diurnal Cortisol

A. Sociodemographic (age, gender education, income, work schedules)

B. Psychosocial (Social support and strain, personality)

IV. Applications to the PSID

- A. Detailed economic predictors of diurnal cortisol (economic stress, episodic and persistent poverty, food insecurity)
- B. Time use and cortisol (PSID time diaries; work schedules are very important in regulation)
- C. Genealogical design allowing intergenerational assessments; Parent and child well-being
- D. Longitudinal assessments of chronic stress and strain (economic, health)
- E. Assessment over entire lifecourse
- F. Nationally representative sample

V. Measurement Issues

A. Description of ongoing saliva collections involving multiple within and across day sampling.

1. Collection Kits (instructions, Sallivettes)
2. Storing and sending samples (mailing samples)
3. Assaying technology

B. Respondent Burden

1. Multiple collections
2. Storing and sending samples
3. Potentially unpleasant experience
4. Effects on recruitment and compliance (Use of Smart Caps)
5. Effect on panel attrition

C. Reducing Burden

1. Advantage of committed participants (advantage of longitudinal studies)
2. Face to face vs. phone contact
3. Participant payment

VI. Statistical Issues

A. Complex data: Multiple measures on multiple days

B. Multilevel modeling approaches to capture within day, across day, and across people variation

VII. Ethical issues

A. Consent to use biological material

B. Deidentification

C. Storage of saliva for other assaying

VIII. Costs

A. Collection supplies

B. Assaying

C. Labor