Academic Stress & Biobehavioral Profile of Senior Nursing Students

Duck-Hee Kang, PhD, RN, FAAN
Lisa Boss, PhD, RN
University of Texas at Houston School of Nursing
Learner Objectives

- Explain the significance of biobehavioral interactions within the study setting
- Interpret the meaning of correlations between psychosocial and biological responses

- Supported by Lee & Joseph D. Jamail Endowment to DK
- No conflict of interest
Background

- ↑Intensity of nursing education with ↑complexity of care need
- Both academic & clinic competencies must be met
- Stress, mood, loneliness, and fatigue
- Biomarkers: cortisol, alpha amylase, crp, IL-1, estradiol, & testosterone
- Need to investigate biobehavioral interactions
- Consideration of diversity in student population & curricular tracks
Definitions

- **Biobehavioral research**: research exploring links among psychosocial, behavioral, and biological factors in relation to health and health-related outcomes (Kang et al., 2010)

- **Biobehavioral research** encompasses the interactions among biological, behavioral, and social factors and their effect on outcomes (NIH NINR)
Purposes of Study

- To determine the levels of stress, mood, loneliness
- To examine associations b/w psychosocial factors and salivary biomarker responses
- To compare biobehavioral responses b/w 2 curricular tracks (traditional vs. pacesetter), age groups (<26 vs. older), & prior degree status in senior graduating nursing students in a baccalaureate program
Methods

- **Design:** A cross-sectional descriptive study
- **Sample:** 77 undergraduate senior nursing students
- **Inclusion criteria:** senior nursing student; ability to provide saliva
- **Exclusion criteria:** psychiatric and physical illness with active treatment; use of CS or antidepressant; current infection; substance abuse
Data Collection & Analysis

- Stress: College Readjustment Rating Scale
- Mood: Profile of Mood State
- Loneliness: R-UCLA Loneliness Scale
- Salivary biomarkers: all saliva collection 0800-1200; batch processing with enzyme immunoassays

Data Analysis:
- Biological data were transformed
- Pearson’s correlations
- Student’s t-test
Participant Characteristics

- Age: 26.6 yo
- Gender: F-58; M-18 (23.7%)
- BMI: 23.1
- Ethnicity: C (53%); Hisp (18.5%); Asian (22.4%)
- Marital status: single (71%); married (25%)
- Finance: family (41%); self (22.4%)
- Prior degree: yes (39.5%)
- Curr. Tracks: Traditional (60.5%); pacesetter
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<th>Mean</th>
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<td>IL-1b (pg/ml)</td>
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## Psychological Factors: Correlations

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Group Differences

- **By Age:**
  - No differences in psychological or biological factors
  - Younger group – tendency for higher CRP & estradiol

- **By Curricular Track:**
  - No differences in psychological or biological factors

- **By Prior Degree:**
  - Students with a prior degree had significantly higher stress, p=.039
Conclusion & Discussion 1

- Overall levels of stress, mood, loneliness not particularly high
- However, 26% moderate; 5% high levels of stress - ↑health risk
- Stress → depression → suicidal tendency in other studies with students → caution and early counseling
- Loneliness – internet addiction & ↓self-esteem
- Loneliness → anxiety → poor sleep quality
Conclusion & Discussion 2

- Overall profile of biomarker response – unremarkable & similar to other findings
- Inverse correlations of alpha amylase with stress and fatigue are intriguing – dysregulation?
- Estrogen protective against anxiety & depression – consistent
- Testosterone – positive corr with anger – consistent
- Test & confusion – literature mixed findings
Nursing education is rigorous \(\rightarrow\) can be stressful \(\rightarrow\) generally normal response \(\rightarrow\) good coping?

**Limitations:**
- Cross sectional
- Small sample
- Limited generalizability

**Strong biobehavioral contribution**

**Identifying a vulnerable subgroup \(\rightarrow\) support \(\rightarrow\) future studies**
Acknowledgment

- Study is designed to expose undergraduate honor’s students to fun of research
- Several honor’s students participated in the design, finding instruments, subject recruitment, and data and sample collection
- Students earned co-authorship in a published paper
Thank You