

Agenda
CIAHD Monthly Research Meeting
SPH I, Room 4645
April 28, 2009
1:30 – 3:30pm (Eastern)

- I. Administrative Items Ana Diez Roux, Center PI (10 minutes)
- a. CIAHD at JHS Symposium
 - b. CIAHD Call for Pilots due May 8, 2009
 - c. Last meeting of academic session
- II. 2008-2009 Pilot Project Updates (15 minutes)
- Pilot Project 1, PI – **Emily Nicklett**
 - Pilot Project 2, PI – **Briana Mezuk**
 - Pilot Project 4, PI – **DeMarc Hickson**
- III. Presentation – **Whitney Robinson**: "*Alcohol abuse and gene-environment interactions: two different approaches*: (55 minutes)
- IV. Meeting Wrap-up/Action Items (10 minutes)

Emily Nicklett (Jane Shim)

Pilot Project Update

Examining the Role of Sociodemographic Characteristics in Diabetic Experiences and Outcomes

Emily Joy Nicklett, Sarah Burgard, Renee Anspach
Presenter: Jane Shim
University of Michigan
Department of Sociology
Department of Health Management and Policy

CIAHD Meeting
Ann Arbor, MI
04/28/2009

Objectives of Pilot Study

- Extend emerging research on life-course disparities to chronic illness outcomes (trajectories) and bio-social interactions
- Obtain a textured analysis of disparities in outcomes among diabetics

Guiding Research Questions

- Why do individuals from socially disadvantaged populations report worse diabetic outcomes as they age?
- What are the mechanisms underlying these disparities?

Specific Aims

Examine the extent to which there are disparities in the trajectories of diabetes later in life by:

1. Race/ethnicity,
2. Socioeconomic position, and
3. Sex

Examining Specific Aims

Mechanisms:

1. *Race/Ethnicity*
Cumulative socio-economic disadvantage and racial/ethnic discrimination
2. *Socioeconomic Status/Social Class*
Proximal (health insurance, cost of medications, availability of equipment) and distal (stress, life stressors) sources
3. *Sex/Gender*
Provision/receipt of informal care
Relationship support

Data

- Institute of Gerontology
Mixed-method data collection from a small sample (30) of community-dwelling seniors from IOG Research Participant Program
- HRS
Triangulated from longitudinal (8-wave) Health and Retirement Study (HRS) data on diabetic older adults and HRS diabetic supplement.

Stages

- 1. Brief survey instrument
 - Co-morbidities, diabetes-specific data, socio-demographic characteristics (matching with HRS population)
- 2. Life History Calendars of Diabetics
 - Collect retrospective data on timing and sequencing of complex life events;
 - Estimated “trajectory” of adherence, functionality, self-assessed health status, and social support.
 - Disease history.
- 3. In-depth Interviews
 - Experiences and challenges related to diabetes
- 4. Triangulation with survey data
 - Group-based trajectory analysis (Nagin)

Progress to Date

1. Research Team
 - The Research group has expanded from 3 Co-Investigators to include 8 advanced undergraduates interested in health disparities.
2. Of the 30 interviews proposed in the project, 27 have been conducted in the greater Detroit area. Approximately 20 of these interviews have been transcribed and the qualitative coding process is currently underway.
3. Next Steps
 - Over the next several months, we will begin analyzing primary and secondary data as well as triangulating with HRS Data

Initial Observations

- Preliminary data suggest that race, class, and gender independently contribute to the circumstances under which one becomes diabetic—as well as the way in which the illness is perceived, treated, and conceptualized.
- Despite general satisfaction with the health care system and provider interactions, respondents report drastically different levels of adherence and outcomes.

Unexpected Surprises

- We confronted specific challenges in:
 - Difficulty recruiting respondents representing different levels of racial/ethnic and socioeconomic group membership
 - Our sample represents individuals from highly diverse socioeconomic backgrounds; however, despite stratified sampling by race, our sample remains predominantly non-Hispanic White.
 - We would recommend researchers interested in using this sample to interview individuals with specific diseases to also use the Wayne State Institute of Gerontology Research Participant Sample.

Unexpected Surprises

- The high response rate and enthusiasm expressed by research subjects
- The geographical diversity in which we were able to obtain samples
- The level of candidness and openness from respondents
- The degree to which the current economic crisis is reported as a primary concern by respondents

CIAMD Pilot Funding Allocations

- Recruitment:
 - The funds allocated toward recruitment materials mailings and incentives) likely contributed to the high response rate we've achieved thus far.
- Transportation and Travel:
 - Funding has enabled our diverse research team to conduct home visits, which the majority of respondents preferred. We were also able to conduct interviews of respondents from a wide geographical area.
- Task Allocation:
 - Investigators and students participating in the project for course credit were able to focus greater attention on conducting interviews, while the grant enabled us to hire students to transcribe qualitative interviews.

Whitney Robison,

**Alcohol abuse and gene-environment
interactions: two different approaches**

Presentation

Project Timeline (revised)

- January – March 2009:
 - Revising Survey Instruments
 - Recruit for Community-based sample
- March – May 2009:
 - Conduct interviews for Community-based sample (n=30)
 - Transcription of interviews and preliminary data analysis
 - Coding of Qualitative Interview Transcripts
 - Data Entry/Coding of Survey Instruments
- May 2009 – August 2009 :
 - Present preliminary results at the IAGG World Congress in July
 - Development survey instruments to interview informal caregivers
 - Apply for additional funding for caregiver follow-up
 - Triangulation of qualitative and quantitative data analysis
 - Development of manuscripts

Thank you...

- CIAHD
- Research Advisors and Co-Investigators
 - Renee Anspach, PhD
 - Sarah Burgard, PhD
 - Jersey Liang, PhD
 - Research Team Members:
 - Marissa Abraham
 - Rebecca Halpern
 - Jane Shim
 - Rachel Rifkin & Ry Imhoff

Alcohol abuse and gene-environment interactions: two different approaches

Whitney Robinson

CIAHD meeting

April 28, 2009

Relevant papers for today's talk

Theory: how sociology perspectives can enhance gene-environment research

- Freese J. Genetics and the Social Science Explanation of Individual Outcomes. *American Journal of Sociology*. 2008 Nov;114:S1-S35.

Alcohol Abuse articles

- Medical perspective
 - Blomeyer D, Treutlein J, Esser G, Schmidt MH, Schumann G, Laucht M. Interaction between CRHR1 gene and stressful life events predicts adolescent heavy alcohol use. *Biol Psychiatry*. 2008 Jan 15;63(2):146-51.
- Sociological perspective
 - Pescosolido BA, Perry BL, Long JS, Martin JK, Nurnberger JI, Hesselbrock V. Under the Influence of Genetics: How Transdisciplinarity Leads Us to Rethink Social Pathways to Illness. *American Journal of Sociology*. 2008 Nov;114:S171-S201.

Rationale of Paper 1: Medical

- Big genetic effects in heritability studies
- What are candidate biological systems?
 - Stress → alcohol dependence
 - HPA: biological system associated with stress
- Animal studies:
 - CRHR1 (receptor in HPA axis) has intxn's w/ stress on alcohol-seeking in rats
- Preliminary human studies
 - CRHR1 SNPs assoc w/ alcohol abuse
- Objective: CRHR1 x stress → alcohol abuse?

Rationale of Paper 2: Sociological

- Human studies: GxE intxns
 - GABRA * marriage, age → alcohol abuse
- Human studies: Mediation / Pathway
 - GABRA → marriage, conduct disorder
- Associations are there, but how do they work?
 - Genetic sociology emphasizes understanding the process, the pathway

Objectives of Paper 2: Sociological

- Objectives:
 - Gene x Environment Interaction:
 - Social advantage: ↓ (GABRA → alcohol abuse)
 - Social mediation of genetic effect
 - GABRA → alcohol abuse
 - GABRA → social advantage → alcohol abuse
- In genetic sociology, pathways are key

Example 1: Pathways matter

h → ★job

Example 1: Pathways matter

Gene_a → h → ★job

Example 1: Pathways matter

Gene_a → Facial → h → ★job
symmetry

Example 1: Pathways matter

Gene_a → Facial → attractiveness → h → ★job
symmetry

Gene → (Envr) → Health

- No purely environmental or purely genetic effects
- 100% genetic effect
 - Gene = drop dead from Y with Z pathology at age A (“destiny gene”)
 - Identical twins do not have identical health
- 100% environmental effect
 - Relive life if different egg & sperm unite
 - Intuitively, wouldn’t have exact same health destiny (“butterfly effect”)
 - Also wouldn’t have same environment

Example 2:
Gene → (Envr) → Health

Gene_b → allergy

Example 2:
Gene → (Envr) → Health

Gene_b → breast-feeding → allergy

Example 2:
Gene → (Envr) → Health

Gene_b → breast-feeding → allergy

- "Genetic effects" pick up things that might make more sense to frame as "environmental" for understanding and intervention
- For best framing, need to know pathway

Example 3:
G*E intxn's related to pathway
idea

Gene_b → L cancer

Example 3:
G*E intxn's related to pathway
idea

Gene_b → strength → L cancer

Example 3:
G*E intxn's related to pathway
idea

Gene_b → strength → job → L cancer

Example 3:
G*E intxn's related to pathway
idea

Gene_b → strength → job → coal dust → L cancer

Possible intxns:
Gene x residence coal community,
Gene x sex, Gene x occupation

Summary

Narrative: *why* do people w/ gene_z get sick?

1. Pathways matter
 - some genetic better framed as social or nutritional or toxic or . . .
2. No bright line b/t genes & environment
 - . . . envr → gene → envr → gene → envr . . .
3. G*E intxns can elucidate pathways if we keep very open minds

Conclusion of Paper 2: Sociology

1. complex interplay of gene w/ social structural factors
2. Examined social factors don't appear to mediate GABRA's effect
3. GABRA intxns: allele effect if childhood poverty or low family support (why?)
 - friend support irrelevant (why?)
 - no effect in women (why?)
