Morbidity, mortality and health seeking behavior in rural Senegal: local understanding and representation of disease across modality of treatment

CUGH 2014
Session CS36
Washington, D.C.

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Outline

• Overview of ethnomedicine/biomedicine problematic in Sub-Saharan Africa
• Description of data used and study site
• Cultural models of disease causation and therapy (ethnomedical and biomedical)
  – Hierarchical cognitive schemas
• Health seeking behavior: diagnosis and treatment
  – Comprehension, social context, perceived efficacy
• Integrating cultural models into survey instrument
Illness and Treatment in Sub-Saharan Africa

• Biomedicine
  – Naturalistic causation/treatment (e.g., contagion, parasites)

• Ethnomedicine
  – Culturally specific naturalistic causation/treatment
    • (e.g., Green’s Indigenous Contagion Theory)
  – Personalistic (supernatural) causation/treatment
  – Conflict w/biomedicine (‘Lotions and Potions’)
    • Preventable, curable disease/illness left untreated
    • Examples in current study area: only treatable by ethnomedicine
      – Childhood and cerebral malaria
      – Congenital syphilis
      – Variety of potential bacteriological infections

• Health seeking behavior linked to a complex of related cognitive schemas (the ‘cultural model’)
  – Cognitive frameworks (providing both models of and for reality, cognitive templates for situated action: c.f. Geertz)
The Niakhar Demographic & Health Surveillance System Study Site

Institut de Recherche pour le Développement (IRD)

- Study zone: 35,000 people monitored in 30 villages since 1983
- Three Health Centers (Really only Two)/Maternity Clinics
  - Regional Hospitals/Dakar
- Hundreds of ethnomedical practitioners
  - High degree of specialization
- Qualitative project
  - Need to develop survey measures of ideational context that discriminate cognitive schemas related to health
  - 10 in-depth interviews w/ethnomedical practitioners
  - 2 in-depth interviews w/biomedical practitioners (and one key informant)
  - 1 focus group with health post staff
  - 98 in-depth interviews w/random sample of adult population: disease narratives
Hierarchical Schema Related to Health and Health Seeking Behavior

Higher level schemas
(morality, motivation)

Good/evil, supernatural cosmology reflect moral economy and interpersonal responsibility, dangers of human and natural environment

Mid-level schemas
(organizing, & proximal manifestations of higher level)

- Interpersonal relations (institutional and non-institutional) including obligations, rights, and dangers from others
- Gender system/norms
- Human development/aging
- Environmental dangers

Disease and diagnosis
Symptoms
Context of symptoms/onset

Behavior & experience:
exchange relations, sexuality, parenting and infant care, food preparation

Behavior and experience w/health seeking

Lower level Schemas
(Behavioral: routine and expected/concordant)
Health Seeking Behaviors

- Almost all subjects differentiate between illness that can be treated by biomedical therapy, illness which can only be treated with ethnomedical therapy and illness for which both can be effective
  - 70% of subjects discussed specific ‘Sereer’ illnesses which biomedical therapy cannot treat

  “You know when you're sick, the treatment at a (biomedical) clinic might not work, because it can be a disease that the doctor cannot cure. Whereas with traditional medicines you can regain health very quickly. On the other hand, it can also happen that you follow the treatment of ethnomedical therapist, but it’s a disease that’s treatable only in a clinic.”

43 year male salaried worker, father w/some primary school

- Despite this, movement between automedication, ethnomedical and biomedical therapy serial, sometimes simultaneous
  - Why?
Comprehension of Causation/Therapy

• Biomedical therapy
  – Biomedical causation poorly understood; lack of supporting schemas
  – Individuals most often do not know what diagnosed with, why biomedical therapy is (supposed to be) efficacious (“they gave me some pills”)
  – Exceptions
    • Some chronic diseases: The role of ‘blood’ and heredity

• Ethnomedical therapy
  – Differentially more supported by cultural model
    • Higher level, e.g., ancestors, malevolent agents
    • Mid-level, e.g., susceptibility/gender, danger from others
    • Lower level, rituals/massage/baths/ethnobotanicals

• Individuals often comprehend mechanisms of neither
  – Exception: Redressing transgressions against ancestors (personalistic illness)
The Social Context of Diagnosis and Treatment

• Higher and mid-level schemas shape
  – Who is perceived as susceptible to illness
  – What counts as illness
  – What their treatment options are
    • e.g.,
      – Adult males rarely admit/treat illness (and seek out-of-area help when they do)
      – Women more susceptible to personalistic (supernatural) illness
        » Potentially form of social control
      – Older people’s illness more likely attributed to naturalistic causes
      – Infant and children’s mortality differentially attributed to personalistic causes

• The Role of Social Networks
  – Diagnosis moves from close kin/co-residents to wider network of kin/neighbors
    • Social learning from previous experiences
  – Perceived seriousness of symptoms shape network deployed
  – Women (mothers) autonomous for ethnomedical auto-medication
  – Older males key to making treatment decisions (cost)
  – More educated/urban kin often associated w/decision to seek biomedical care outside of region
Perceived Efficacy

- Perceived efficacy of treatment works through individual experience and social learning/feedback, reinforcing/undermining particular schemas
  - Iterative causal attribution

- Roughly equivalent numbers of efficacious/non-efficient biomedical and ethnomedical therapy
  - Small percentage exclude ethnomedical therapy
    - Linked to signal curative event in family

- Biomedicine’s advantage
  - Historic elimination of measles, meningitis
    - Vaccination programs
  - Reductions in infant and child mortality
    - Not universally perceived
  - Legacy of itinerant physicians
  - Efficacy of appropriate treatments
    - e.g., diarrhea; ‘simple’ malaria
Perceived Efficacy

• Ethnomedicine’s advantage
  – Limited resources of health centers
    • *Inefficacy* of biomedical diagnosis/treatment
      – e.g., Bacteriological and parasitological infections
    – When biomedical intervention ineffective/not available
      • Interpreted as failure of biomedical model
      • Turn to traditional schemas of causation and treatment
  – When ethnomedical intervention ineffective
    • Not necessarily interpreted as failure of ethnomedical model
      – Plurality of ethnomedical causes
      – Plurality of ethnomedical practitioners/therapies does not vitiate diagnosis
      – Association of schemas related to disease w/broader cultural models
    – To gain against ethnomedicine, curative biomedicine must be more efficacious instrumentally
  – Integrate biomedical therapy into existing cultural models (analogy)
Survey Measures of Schema

• Higher, Mid, and Lower Level Schema
• Multiple Response Questions (12)
  -- Response categories for biomedical/ethnomedical automedication/traditional treatment/biomedical treatment
  -- You had a cold sensation, accompanied by shivers after meeting someone. What will you do first? (and second, and third?) (Lower level schema, associated with Ngeune, Satanic Illness)
  -- What do you do first when you have a sore stomach (burns, aches, diarrhea)? (and second, and third?) (Lower level schema)
    • You'll take some pills at home. (Biomedical automedication)
    • You'll take some herbs or a herbal drink at home. (Ethnomedical automedication)
    • You'll consult a clairvoyant or a traditional healer (Ethnomedical consultation)
    • You'll consult a nurse or doctor (Biomedical consultation)
    • You do nothing.
    • You do something else.
    • Don’t know

• Ordering of responses indicates adherence/practice across biomedical and ethnomedical ideation/treatment options
Survey Measures of Schema

• Use: Identifying dimensions of belief/health seeking behavior
  – Classification of respondents (LCA)

• In Network analysis-model learning/influence of ideas/behaviors between social network members

Table 1. Unrotated factor analysis higher and lower level schemas of disease causation/treatment, Niakhar, Senegal n=24

<table>
<thead>
<tr>
<th>Variable</th>
<th>Bio/MCH</th>
<th>Bifurcated</th>
<th>Mixed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache/dizziness: cause</td>
<td>0.1844</td>
<td>0.3726</td>
<td>-0.462</td>
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<tr>
<td>Stomach Ache/Diarrhea: cause</td>
<td>0.0559</td>
<td>-0.0144</td>
<td>0.5895</td>
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<tr>
<td>Child death: cause</td>
<td>0.6297</td>
<td>0.4502</td>
<td>0.201</td>
</tr>
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<td>Fatigue/body aches: cause</td>
<td>-0.1958</td>
<td>0.3636</td>
<td>0.1903</td>
</tr>
<tr>
<td>Soreness, Bones/Eyes: cause</td>
<td>0.177</td>
<td>-0.2885</td>
<td>0.0983</td>
</tr>
<tr>
<td>Nguene (Satanic wind) symptoms: cause</td>
<td>-0.284</td>
<td>-0.0506</td>
<td>0.3295</td>
</tr>
<tr>
<td>Fear/cold after meeting someone: treatment</td>
<td>0.1607</td>
<td>0.4902</td>
<td>-0.0338</td>
</tr>
<tr>
<td>Rash/dry skin: treatment</td>
<td>-0.3816</td>
<td>0.4853</td>
<td>-0.0786</td>
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<tr>
<td>Stomach Ache/Diarrhea: treatment</td>
<td>0.3457</td>
<td>-0.375</td>
<td>-0.3264</td>
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<tr>
<td>Prenatal care: treatment</td>
<td>0.7479</td>
<td>-0.0099</td>
<td>0.1703</td>
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</tbody>
</table>

Source: compiled by author
Cultural Models of Causation

• Biomedical naturalistic theories
  – Vector borne transmission of malaria
  – Nutrition

• Ethnomedical naturalistic theories
  – Disease related to infectious agents
  – Disease associated w/heredity
    • Concept of non-communicable disease not available as cultural schema
  – Disease associated w/food handling/preparation
  – Disease associated w/agricultural labor
  – The special case of ‘blood’ and anemia
Cultural Models of Causation

- Ethnomedical personalistic theories
  - Totems (Animal spirits associated w/matriline & patriline)
  - Other animal spirits
  - Pangols (Ancestral spirit)
    - Covers mental illness,
  - Djinn
  - Sorcerers
    - Main source of ‘nungenge’ (‘hot wind’); evil magic
  - ‘Soul eaters’ (c.f. vampires) & ‘Death avoiders’ (c.f. astral projection)
    - Magically hidden or disembodied humans w/powers
    - Often old/sick individuals
    - Seek to drain life-force (blood) from victims (particularly young, infants) to prolong own life
  - ‘Baby Snatchers’
    - Humans with powers ‘attach’ a mystical cord to fetuses/infants, drain life force
Social Interaction and the Moral Economy

- Peasant/subsistence economy
  - Household economic/social organization
- No social welfare programs, capital/insurance markets
  - Other individuals only source of security/well being
- Need to cultivate/maintain extra-household exchange (patronage relationships)
  - Institutionalized forms
    - Kin/faux kin
    - Matrilineal/patrilocal
    - Teasing relations
  - Informal relations (e.g., neighbors)
- Others individuals also major source of insecurity
  - Reputation is everything - ‘cloud of evaluation’
  - Real risk of health/social harm
Supernatural personalistic agents revisited

• Moral economy associated with set of higher level, organizing schema(s) – morality and motivation
  • Good and evil/supernatural forces/interpersonal responsibility
  • Illness in individual lives: environmental and human(istic)

• Structures mid-level schemas
  – Expectations of support to/from others
    – Pangol and the necessity of maintaining kin ties
  – Expectations of harm from others
    – Strangers/neighbors/kin
  – Danger of deviance from group (nguenge)
  – Gender, sexuality and reproduction
    – Djinns, soul eaters, death evaders, animal spirits, etc.
  – Human development/aging/mortality
    – ‘Blood’
Behavioral schemas: moral/normative transgression and personalistic illness

- Leaving house at dusk, after dark (*Djinn, soul eaters*)
- Bathing after dusk (*tchiit paxere*)
- Eating food of unknown provenance (*mystic poisoning*)
- Undressing/nudity in front of strangers (*soul eaters*)
- Talking loudly/agitation, public exposure while pregnant (*baby snatchers*)
- Children in contact with the very old (*Soul eaters*)
- Children left to sleep alone (*soul eaters and death evaders*)
- Abuse mistreatment of animals
- Abuse/mistreatment of trees/crops