The Effects of Chronic Stress on our Minds and Bodies: Special Risks for Sexual and Gender Minorities

Overview

- Health disparities among sexual and gender minorities
- Minority stress model
- Biological pathways and health effects
- Special case of early adversity
- From “risk” to “sensitivity”
- Strategies for positive change
Mental/Physical Health Disparities

- We have long known that sexual and gender minorities (SGM) show elevated rates of multiple mental and physical health challenges
- So much so that the NIH has (finally!) defined them as a population of special interest for health equity research and intervention

SGM Health Disparities

- Anxiety, depression
- Suicidal ideation and self-harm
- Disability, physical limitations, overall self-perceived health
- Cardiovascular disease and risk
- Some cancers
- Overweight and obesity
- Asthma
- Eating issues
- Substance use
- Pregnancy and STI rates
Health Inequalities Among Sexual Minority Adults
Evidence from Ten U.S. States, 2010

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Background: Improving the health of lesbian, gay, and bisexual (LGB) individuals is a Healthy People 2020 goal; however, the IOM highlighted the paucity of information currently available about LGB populations.

Purpose: To compare health indicators by gender and sexual orientation statuses.

Methods: Data are from Behavioral Risk Factor Surveillance System surveys conducted January–December 2009–2010. Population-based samples of non-institutionalized U.S. adults aged over 18 years (N=93,614) from 10 states that asked about respondents’ sexual orientation (response rate=66.5%). Analyses were stratified by gender and sexual orientation to compare indicators of mental health, physical health, risk behaviors, preventive health behaviors, screening tests, health care utilization, and medical diagnoses. Analyses were conducted in March 2013.

Results: Overall, 2.4% (95% CI=2.2, 2.7) of the sample identified as LGB. All sexual minority groups were more likely to be current smokers than their heterosexual peers. Compared with heterosexual women, lesbian women had more than 30% decreased odds of having an annual mammography exam, and bisexual women had more than 2.3 times the odds of not seeking medical care owing to cost. Compared with heterosexual men, gay men were less likely to be overweight or obese, and bisexual men were twice as likely to report a lifetime asthma diagnosis.

Conclusions: This study represents one of the largest samples of LGB adults and finds important health inequalities, including that bisexual women bear particularly high burdens of health disparities. Further work is needed to identify causes of and interventions for these disparities.

Women (n = 52,705)
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- Mental distress
- Poor sleep >14 days
- Poor health >14 days
- Dissatisfied with life

Men (n = 34,124)

- Mental distress
- Poor sleep >14 days
- Poor health >14 days
- Dissatisfied with life

Legend:
- Heterosexual
- Lesbian
- Bisexual
Men (n = 34,124)

- Mental distress
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Percentage

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Women (n = 52,705)

- Smoking
- Binge drinking
- Drink/drive
- Sexual risk
- Low care due to cost

Men (n = 34,124)

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- Binge drinking
- Drink/drive
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Legend:
- Green: Heterosexual
- Red: Lesbian
- Yellow: Bisexual
Why?

- Multiple factors, but *minority stress* is key
- Individuals who are socially stigmatized and marginalized face elevated levels of stress (more on this in a bit)
- AND obstacles to seeking competent care
- This is true for ALL individuals facing social marginalization and oppression
  - Gender, ethnicity, social class, religion, immigration, body size, ability, etc.
**Intersectionality**

- Oppression and marginalization aren’t additive, they are interactive
- I.e., it’s not the stress of being a lesbian “plus” the stress of being Latina “plus” the stress of being non-binary
- These social experiences interact dynamically with one another
- You move through the world as a whole person. Being a lesbian MEANS something different for a Latina cisgender woman than a White nonbinary transwoman

**Groups at Increased Risk**

- Youth
- Bisexuals: “Double dose” of minority stress via biphobia?
- Trans and nonbinary individuals: Most studies are smaller in scale, but EVERY SINGLE ONE has found greatly increased mental and physical health risks, beginning in adolescence
- Those who have also experienced early life adversity (more on this in a bit….).
**Distal and Proximal Stressors**

- Distal: External events such as harassment, discrimination, lack of access to resources, violence

- Proximal stressors: Internal anticipation of these events (even if they never occur), along with internalized homophobia and transphobia, shame, fear, etc.

- Personality traits and personal experiences can magnify proximal stressors through appraisal processes AND can magnify the consequences of distal stressors

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**Crash Course in the Biology of the Stress Response System (SRS)**

- First, a little self-study……
- What did you experience?
Crash Course in the Biology of the Stress Response System (SRS)

- The SRS comprises three anatomically distinct systems:
  - Sympathetic (SNS) and parasympathetic (PNS) branches of the autonomic nervous system
  - Hypothalamic-pituitary-adrenal (HPA) axis
  - All involved in “fight or flight” response
    - Goal: Mobilize BLOOD and energy in preparation for action

Sympathetic Nervous System

- Under acute stress, increases in cardiac output are effected via coupled PNS withdrawal and SNS activation.
  - facilitate fight/flight responses
- With SNS activation, the adrenal medulla secretes epinephrine (E) and norepinephrine (NE)*
  - increase heart rate, respiration, blood supply to skeletal muscles, and glucose release in the bloodstream.**
Parasympathetic Nervous System

- Under stress, PNS responds by withdrawing its inhibitory influence (i.e., vagal withdrawal)
  - Allows excitatory SNS to operate unopposed
  - Results in rapid increases cardiac output to cope with stressor
- PNS withdrawal promotes rapid, flexible responding to stress and coping with mild to moderate stressors
  - Ex: solving a difficult puzzle.

Individual Differences

- Another little experiment..... RSA
- Some individuals have more “robust” PNS systems than others
- Implications for emotional functioning
- Origins of these differences
- Can they be modified?
**HPA Axis**

- Slower acting but more lasting response
- Key output? Cortisol (peaks about 10-30 min after stress begins)
- Helps to mobilize energy by regulating blood glucose and narrowing arteries
- Feedback system: When the body detects that enough cortisol is circulating, it secretes hormones to shut down its release (like a thermostat)

**HPA Axis**

- BUT some individuals’ feedback mechanism is “dysregulated”
- i.e, they have chronically dampened levels of cortisol or chronically elevated levels of cortisol
- Individuals under chronic stress typically show chronically elevated cortisol (body is always in state of alarm)
- Individuals exposed to extreme neglect or abuse may show dampening
Negative Effects of Chronically Elevated Cortisol

- Impaired cognitive performance, memory
- Suppressed thyroid function
- Elevated blood pressure
- High blood sugar
- Weight gain
- Sustained chronic inflammation (more on this in a bit)
- “Allostatic load”

Signs of Chronic Stress

- Fatigue, lethargy, depressive symptoms
- Irritability, racing thoughts
- Headaches
- Dry mouth
- Intestinal problems (brain-gut connection!)
- Increased blood pressure
- Sleep disruption
- Disrupted sex drive or functioning
- Menstrual problems
- Appetite, weight disruption
Key Health Endpoints

- Cardiovascular functioning
  - Heart rate, blood pressure, condition of arteries
  - Cardiac events: Risk and recovery
  - Metabolic syndrome (increased BP, blood sugar, abdominal fat, cholesterol)

- Endocrinological functioning
  - Acute and chronic disruptions

- Immune functioning
  - Proinflammatory cytokines, killer cells, response to wounds and infections, systemic cellular inflammation

Some Cancers

Frailty

Rheumatoid Arthritis

Type 2 Diabetes

Alzheimers

Osteoporosis

CVD

Fatigue

Periodontal Disease

CHRONIC CELLULAR INFLAMMATION
Not all Stressors are Alike

- We are a social species that evolved to live with, and depend on, close groups
- So we are MOST sensitive (psychologically and biologically) to social stressors: Exclusion, rejection, hostility, shame, loss of status
- But it’s a two-way street -- We are also highly sensitive (psychologically and biologically) to social connection: Affection, love, attachment, friendship, companionship, therapeutic alliance

The Special Toll of Hostility

- People show significant increases in blood pressure, even when just ANTICIPATING a conflict, especially if they expect to feel judged (again, remember the significance of social stress)
- 10 minutes of interpersonal conflict with someone who has a hostile attitude can compromise your immune system for 24 hours
- Hostility even during non-conflict interactions can delay wound healing by 60%
- So imagine if this happens every single day.....
The Relevance of Emotions

- “Highway” from the outside world (your job, your family, your life) to your body
  - Life experiences are processed *emotionally*, which then influences physiological functioning
- But there are also individual differences in emotional reactivity and regulation
  - Some have stronger emotional reactions to life events than others
- Why? Personality, previous experiences, cognitive appraisals, mental health, etc.

Am I Overreacting?

- Common question, ESPECIALLY for marginalized individuals
- Helpful to remind clients that emotions evolved to get our attention, to signal “HEY, something important is happening that needs attention NOW!!!”
- For some individuals, that “attention-getting” mechanism is highly sensitive
- But the alarm system is a signal, not a plan! When your alarm clock goes off at 6am, it doesn’t know WHY you have to get up, or what you should do first!
Individual Differences

- Anecdote…… Two queers go to a hotel…
- Hypervigilance to threat
- Who is most vigilant? Those who have been hurt before
- Especially in early life
- EARLY ADVERSITY has pronounced, long-lasting effects on stress sensitivity at both a psychological and biological level
- Elevated early adversity among SGM

But Let’s Reframe “Risk”

- WHY do early experiences of adversity have such lasting effects? Wouldn’t it be better for the species if we were all able to just bounce back and “forget” early hardship?
- No – because early life experiences provide important clues to the developing organism about what life is likely to be like
- Adaptive calibration
Life History Theory

- If you’re born into a harsh environment, where you can’t count on nurturance and support, it pays to grow up fast, to be HYPERVIGILANT to threats
- If you’re born into an extremely nurturant environment, you can afford to grow up slowly and take advantage of the care that is provided
- “Fast” versus “Slow” strategies

### Fast LH Strategy

- Poverty; parental instability; high stress/danger
- Harsh, rejecting, insensitive, inconsistent caregivers
- Vigilance to threat, attention shifting, high risk behavior; impulsiveness, rejection sensitivity
- Earlier puberty, earlier sex, more sexual partners, more sexual risk taking
- ↑Sympathetic adrenomedullary signaling; ↑glucocorticoid resistance; ↑proinflammatory cytokine gene expression

### Slow LH Strategy

- Ecological and Family Context
  - adequate food, resources; household harmony, stability; safety
- Caregiving During Infancy & Early Childhood
  - Sensitive, supportive, responsive, affectionate caregivers
- Psychological/Behavioral Development
  - Secure attachment; inhibitory control; cooperative interpersonal style; delay of gratification
- Sexual Development
  - Later puberty, later sex, fewer sexual partners, less sexual risk taking
- Autonomic, adrenergic, and immune signaling
  - ↓Sympathetic adrenomedullary signaling; ↑glucocorticoid receptor expression; ↑antiviral immune response gene expression
**Different, not Deficient**

- Why so important? Elevated rates of early childhood adversity for SGM
- Individuals with early adversity (and hence, fast life history strategies) are not “doomed,” and they are not “deficient”
- They have particular adaptations to the stressors they have faced
- There may be long-term health drawbacks to those adaptations, but there are also hidden strengths and resiliencies
- Hence, the “orchid/dandelion” model

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**The Dandelion and the Orchid**

- Dandelions grow everywhere, even in the cracks of sidewalks. You don’t even need to WATER them and they will crop up anywhere

- Orchids are totally different. They need (1) specific soil – a mix of peat moss, cork, charcoal, and sometimes finely milled bark (2) shallow planting in an east-facing or south-facing room with bright but indirect light, (3) moderate temperatures that vary 15 degrees from warmest to coolest
The Dandelion and the Orchid

- BUT if you're willing to put in the effort, you get something rather extraordinary.
- If the orchid gets sufficient care, it thrives and becomes more beautiful than a dandelion every could. But without that extra care, it'll perish.

The Dandelion and the Orchid

- High levels of stress sensitivity are like indices of “orchidness”
- Individuals who have been exposed to early adversity may be especially biologically reactive to stress, and for sexual and gender minorities this includes the stress of social marginalization
- But they are also biologically reactive to CARE, SUPPORT, AND NURTURANCE
- In other words, social support may have ESPECIALLY STRONG benefits for marginalized
**Key Affirmative Message for Clients**

- Your experiences of stress – even if they occurred early in life, are NOT lasting deficits
- They are *adaptations*. Your orchid body and mind are doing the best they can to protect and defend you *in the immediate term*
- Sometimes this means that your “alarm” system is on “high” all the time (which has costs for your *long-term* health)
- So you’ll need to take more active steps than the average dandelion to turn off those alarms and seek health-protective support

**The Power of Social Support**

“RR” = Reduced risk of death

- Receiving tangible, emotional, or practical help
  - 22% RR
- Perceiving that such help is available to you
  - 35% RR
- Romantic relationship quality
  - 50% RR
- Feeling an overall sense of belonging and connection
  - 29% RR

**All three? Having a high number of subjectively positive functional ties? 90% reduction in risk for death**
### Comparison of Decreased Mortality across Social Connection and Leading Health Indicators

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<thead>
<tr>
<th>Metric</th>
<th>Social Connections</th>
<th>Leading Health Indicators</th>
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<tbody>
<tr>
<td>Being socially integrated</td>
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<td>High social support</td>
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<td>Not divorced vs. divorced</td>
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<tr>
<td>Feeling socially involved</td>
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### Other Strategies

- **Mindfulness and meditation**: Known to shift patterns of sympathetic and parasympathetic functioning
- **Caregiving**: Studies have found that providing support to OTHERS is a powerful way to reduce your own stress (group therapy can be one context for this)
- **Social justice activism**
- **Self-care and self-love**