Gender Bias in Academic Medicine: Pitfalls, Promise and Progress

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Objectives for today

• Review some of the issues
• Introduce some key constructs from social psychology that account for the tenacity of gender bias
• Apply constructs to a representative case
• Review some effective interventions to reduce the application of gender bias
What we believed...

• That the lack of women leaders in any field would fix itself when the pipeline was full
• That if women just behaved like men, they would succeed at the same rate
• That the workplace was a meritocracy where women’s and men’s accomplishments would be viewed and rewarded equally
What we now know…

• That unconscious gender-based assumptions and stereotypes are deeply embedded in the patterns of thinking of both men and women

• That women and work performed by women consistently receive lower evaluations than men and work performed by men (by both men and women evaluators)

• That these cumulative disadvantages impede women’s progress toward leadership
Tremendous gains in medicine

• In 2007-08, women comprised:
  – 49% of medical students
  – 45% residents & fellows
  – AMCs
    • 34% faculty
    • 12% chairs
    • 10% deans
  – 25% NIH R01 applicants and recipients
Gender issues remain in medicine

• Research = pathway to leadership in academic medicine
  – Women are more likely to be clinicians and educators
    Tesch et al., JAMA, 1995; Wright et al., Acad Med, 2003
  – Women more likely to be assigned “institutional housekeeping” Bird & Wang, NSWA, 2004

• Gender-based and frank sexual harassment remain prevalent

• Women physicians earn less with comparable productivity
  Wright et al, Acad Med, 2003; Ash et al., Acad Med, 2002

• “Climate” less supportive of women’s careers
  Foster et al., Acad Med, 2000; Carr et al., JWH, 2003
Constructs:
1. Social Categories
2. Expectancy Bias
Gender is a Social Category

- Sex is biological (xx = female; xy = male);
  - Gender is socially constructed
- Social categorization
  - People assigned to groups based on common attribute
  - Stereotyping can emerge if most members share certain characteristics
- Biology irrelevant to most professional roles occupied by men and women
  - Men and women continue to have different social roles outside the workplace
  - These social roles can influence gendered reactions and interactions in the workplace
Expectancy Bias: Expecting a certain behavior or characteristic based on assumptions about a social category

- Wisconsinite = likes cheese
- Cardiologist = male
- Nurse = female

Expectancy bias can distort our assessment of individuals who are members of the stereotyped group.
Expectation that men are better scientists than women biases evaluation

- 114 applications for prestigious research postdocs to Swedish MRC (52 women)
- Reviewers’ scores vs standardized metric from publication record = impact points
- Women consistently reviewed lower, especially in “competence”
- Women had to be 2.5x as productive as men to get the same score
- To even the score, women needed equivalent of 3 extra papers in a prestigious journal like Science or Nature

Expectancy Bias = Academic work done by men better than work done by women

- Curriculum vitae sent to 238 academic psychologists (118 male, 120 female)
- Randomly assigned male or female name to cv
- Academic psychologists gave cv’s with male names attached higher evaluations for
  - Teaching
  - Research
  - Service Experience
- More comments on cvs with female name
- Evaluators were more likely to hire the male than the female applicant

Steinpreis et al., Sex Roles 41: 509 1999
Construct: Prescriptive Gender Norms
Prescriptive Gender Norms

DESCRIPTIVE: How men and women actually behave

PRESCRIPTIVE: Assumptions about the way men and women in the abstract “ought” to behave:

– **Women**: Nurturing, nice, supportive, helpful, sympathetic, dependent = *Communal*
– **Men**: Decisive, inventive, strong, forceful, independent, willing to take risks = *Agentic*

RELEVANT POINTS:

– **Leaders, scientists, professors, cardiologists**: Decisive, inventive, strong, independent
– **Social penalties** for violating prescriptive gender assumptions
– **Unconscious gender stereotypes** are easily and automatically activated and once activated readily applied
Construct:
Role Congruity for men and Role Incongruity for women in high authority positions
Penalties for success: Reactions to women who succeed at male gender-typed tasks

- 48 participants (20 men)
- Job description; Assist VP; products made suggested male (e.g. engine parts, fuel tanks). Male and female rated in two conditions:
  - Performance ambiguous
  - Performance clear
Achievement-related Characteristics:
- Unambitious - ambitious
- Passive - active
- Indecisive - decisive
- Weak - strong
- Gentle - tough
- Timid - bold
- Unassertive - assertive

Interpersonal Hostility:
- Abrasive - not abrasive
- Conniving - not conniving
- Manipulative - not manipulative
- Not trustworthy - trustworthy
- Selfish - not selfish
- Pushy - accommodating

Competence Score:
- Competent - incompetent
- Productive - unproductive
- Effective - ineffective

Likeability:
- Likeable - not likeable

How much do you think you would like to work with this person?
- Very much - not at all

Comparative Judgment:
- Who is more likeable?
- Who is more competent?
Results

Performance ambiguous
- Likeability and hostility comparable
- Men more competent
- Men more achievement-related characteristics

Performance clear
- Competence comparable
- Achievement-related characteristics comparable
- Women less liked
- Women more hostile

Congruity of roles for men and incongruity for women

Penalty for gender role violation
Why Are Women Penalized for Success at Male Tasks?:
The Implied Communality Deficit

- Similar design – evaluating VP’s in male-gendered position
- Memo from CEO introducing each VP; sentence varied in last paragraph:
  - Communal ("caring and sensitive" to employees; encourages "cooperation and helpful behavior")
  - Positive non-communal ("worked hard to maximize employees’ contributions")
Results

• No effect of participant sex
• Positive non-communal or no information:
  – Women vs men
    • Less likable
    • More hostile
    • Less desirable as boss
• Communal information
  – Men - no effect
  – Women vs men
    • More likable
    • Comparable hostility and boss desirability

Construct:
Redefining Merit to Justify Discrimination
Redefining Merit to Justify Discrimination:
Adjusting the value of specific credentials
that a candidate of the desired gender
happens to have
Constructed Criteria: Redefining Merit to Justify Discrimination
Uhlmann and Cohen, Psychol Sci, 16: 474-480, 2005

- Mock hiring situation – 3 studies
- Male and female applicants with identical credentials
- Police Chief – criteria constructed to favor male applicant
- Women’s Studies Professor – criteria constructed to favor female applicant
- Self-perceived objectivity predicted gender bias
Fig. 2. Results from Experiment 1: the interaction of applicant’s gender and self-perceived objectivity in predicting biased criteria. Low self-perceived objectivity is defined as one standard deviation below the mean; high self-perceived objectivity is defined as one standard deviation above the mean. Higher numbers indicate greater favoritism toward the applicant.
Study 3 -

• Half of the evaluators rated importance of criteria before seeing applications (commitment vs no-commitment)

• No-commitment: Criteria constructed to favor male applicant

• Commitment: Male and female applicants – similar hiring evaluations

Uhlmann and Cohen, Psychol Sci, 16: 474-480, 2005
Construct:
Shifting Standards of Reference
Shifting Standards of Reference:
Occurs when reliance on a group trait or stereotype leads to evaluation using a different referent standard (e.g., strong, for a woman; sensitive, for a man)
Shifting Standards of Reference cause cognitive distortions in judgment

- Height of men overestimated and women underestimated despite standard reference

- Woman judged lower than men on actual wages but higher in financial success

- Women applicants as likely to be shortlisted but less likely to be hired for male gender-typed job
Figure 1. Schematic depiction of stereotyped representation of competence and minimum-standard levels for low- and high-status groups.
Constructs:
1. Gender Priming
2. Stereotype Threat
• **Gender Priming:** “Priming” an individual with words, pictures, or media images that align with gender stereotypes promotes gender bias in subsequent behavior.

• **Stereotype Threat:** A member of a social category about which a negative stereotype exists can underperform relative to his/her ability if being a member of the stigmatized group is made salient.
Clearing the Air: Identity Safety Moderates the Effects of Stereotype Threat on women’s Leadership Aspirations
Davies, Spencer & Steele, J Pers Soc Psych 88:276-287, 2005

- 61 Ss (30 M, 31 F)
- Gender Priming = viewed commercials that reinforced female gender stereotypes or neutral
- Stereotype Threat = women are less able to lead
- Asked to select role as “leader” or “problem-solver” in a subsequent group task
Results

- Men in all conditions and women after neutral commercials
  - No clear role preference
- Women after gender priming
  - Strong preference for problem-solver rather than leader

Davies, Spencer & Steele, J Pers Soc Psych 88:276-287, 2005
Study 2 –
Was it stereotype threat?
Impact of counteracting the threat?

• 116 Ss (58 F, 58 M), similar design
• After viewing commercials
  – Response time to words on computer screen = female stereotype, neutral, nonwords
  – Randomized to read that *research shows no gender differences in performance of either task*

Davies, Spencer & Steele, J Pers Soc Psych 88:276-287, 2005
Results

• Women with female-stereotype priming:
  – Female stereotype activated (shorter time to identify female-stereotype adjectives)
  – Less preference for leader; greater preference for problem solver role (same as Study 1)
  – Level of stereotype activation predicted level of leadership aspiration

• Affirming sentence eliminated stereotype threat for leader selection

Davies, Spencer & Steele, J Pers Soc Psych 88:276-287, 2005
Gender difference in NIH Award rates, 2003-07

Ley & Hamilton Science, 2008
NIH K23
- Mentored (usually by senior male)
- Lower status than reviewers
- Lower budget
- Less competitive

Communal

NIH R01
- High prestige
- Scientific leadership
- Keen competition for scarce resources with high status

Agentic

Study Section

MALE

FEMALE
The Cardiovascular Institute for Super Science (CISS) issued a program announcement for the second year in a row seeking grant proposals for high risk research with the potential for major impact in cardiovascular disease.

One criterion for review is whether applicants have the potential for scientific leadership. This prestigious, 2 million dollar award goes to a single recipient.

"willing to take risks" strongly associated with male. Bem, 1974


Shifting standards; women short-listed but not hired. Biernat & Fuegen, 2001

Mental model of leadership strongly male. E.g. Sczesny et al., 2006

Role congruity for men – high prestige, big budget. Eagly & Karau, 2002
Assistant Professor Dorinne Leroy was a finalist for this award and was invited for an interview. Her work is interdisciplinary, spanning social and biological science fields. As she walked down the hall of the administrative building to her interview, she passed 15 portraits of previous senior CISS scientists, all of whom were white males.

A female staff assistant greeted her and escorted her into the room with 5 men and 1 woman seated at a large table. Although the interview was pleasant, she felt unduly nervous and did not think she performed at her best.

Activation of stereotype threat:
women are not as good as men at science or leadership. Davies, et al. 2005

Potential for gender stereotype priming: scientists are men; women are in support roles. Banaji et al. 1993
Dr. Leroy received a letter several days later indicating that she had not been selected for the award. The letter indicated that her research was deemed too broad and she was a little too early in her career.

Dr. Leroy was somewhat surprised by this because the award was given to Dr. Jason Priestley at Prestigious University, a scientist whose work is exceptionally broad and interdisciplinary – even more so than Dr. Leroy’s.
The award this year went to Dr. Richard Dare, a colleague of Dr. Leroy’s. Dr. Dare’s primary research is in a narrow area in molecular electrophysiology. Dr. Dare and she had been fellows together at the renowned Ichiban Center for Cardiovascular Research and their career benchmarks have largely been parallel – faculty appointments in the same year at comparably ranked major research universities, successful R01 proposals from NHLBI in the same year, and similar publication rates in journals of comparable impact.

Accomplishments of academic psychologists rated lower if performed by a woman. Steinpreis et al., 1999

Her success may imply communality deficit and unlikability. Heilman, 2004
## Breaking the Prejudice Habit

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<tr>
<th>Institutional</th>
<th>Self-regulation</th>
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<td>• Evaluation processes that allow individuation</td>
<td>• Recognize, label and replace stereotype (personal and societal)</td>
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<td>• Increase presence of women in key decision-making</td>
<td>• Counter-stereotype imaging</td>
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<tr>
<td>• Promote <em>Bias Literacy</em></td>
<td>• Perspective-taking</td>
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<td>• Increase exposure</td>
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Conclusion/Summary

• Gender as a social category leads to expectancy biases that causes cognitive distortions that disadvantage women in career advancement in academic medicine

• The subtlety of these distortions allows gender bias against women to enter decision-making processes without being overt

• Individuals and institutions must be committed to “breaking the prejudice habit” to overcome implicit biases to achieve our explicit egalitarian goals
Questions?