

Effects of Sex and Gender on Suicide Risk

An Example of Confounding vs. Effect Modification

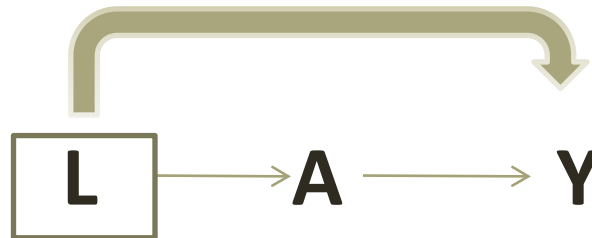
Learning Objectives

1. Clarify the differences between effect measure modification and confounding, and show how they could work simultaneously in one example
2. Clarify the concepts of sex and gender, and demonstrate their use in an Epi example
3. Highlight the importance of focusing on these effects within men's health specifically

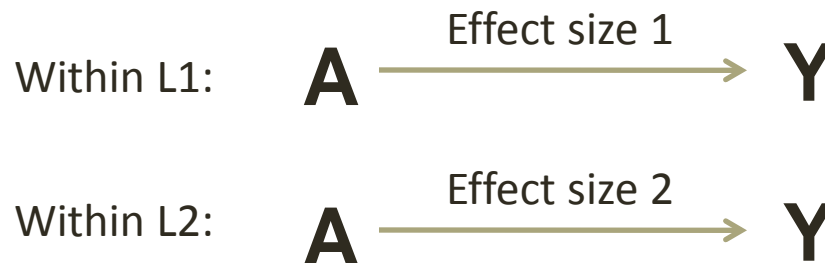
(Insert slides (3-12) or (4-12) into appropriate lecture set)

Confounding vs. Effect Modification

If an observed association is not correct because a different (unobserved) variable is associated with both the potential risk factor and the outcome, but it is not a causal factor itself.....

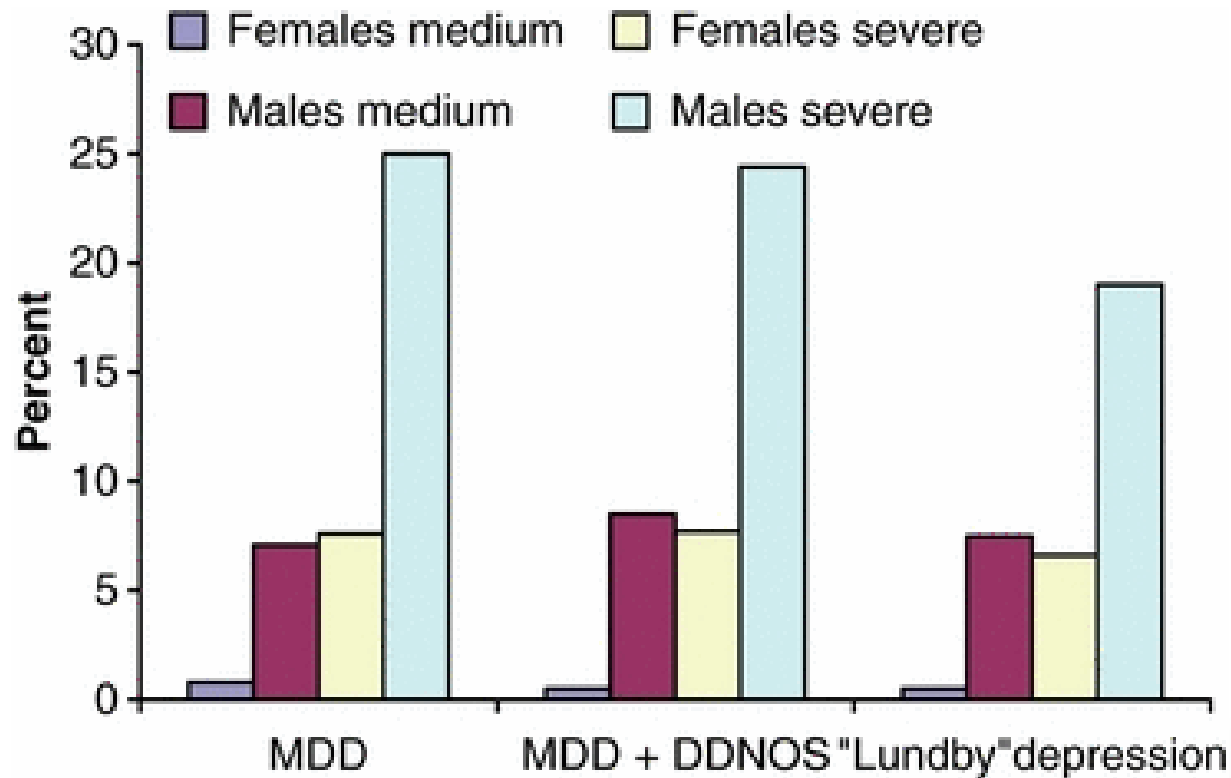


If an effect is real but the magnitude of the effect is different for different groups of individuals (e.g., males vs females or blacks vs whites).



Differences between men/women and suicide risk

Long-term suicide risk of depression in the Lundby cohort 1947-1997 - severity and gender



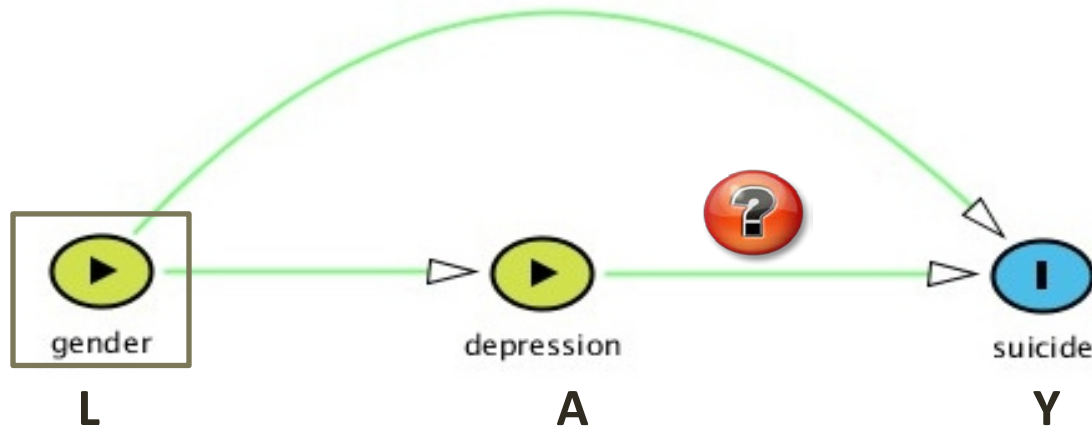
Are these differences all due to confounding? Or to effect measure modification?

Should you stratify? Or adjust?

Unpacking gender/sex in suicide risk

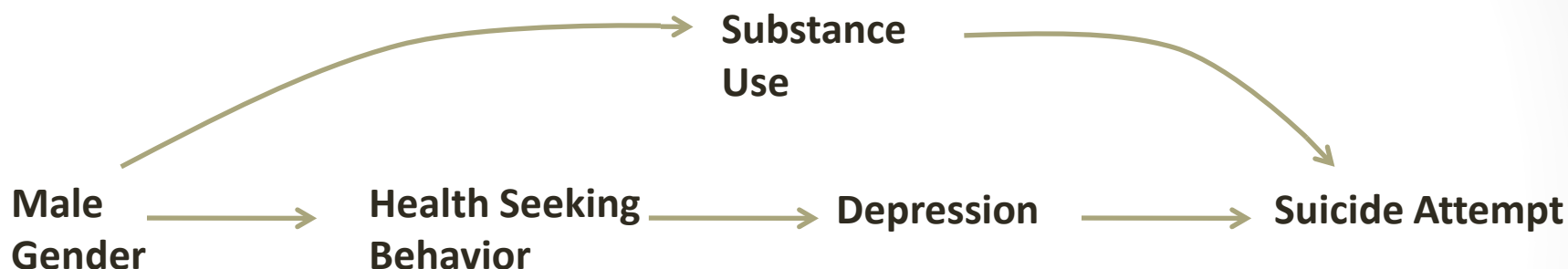
- In Epi examples, automatically adjusting for sex (M/F) can be problematic when effect modification arises
- Gender refers to the socially constructed roles of men and women implicating different social norms and cultural expectation for both sexes
- Sex refers to biological differences between male and female persons (hormonal, genetic, physical etc.)

How could gender act as a confounder?



Commonly cited components of Western masculine norms : anti-femininity, competitiveness, emotional stoicism, self-reliance, physical toughness, and financial success. Could these norms affect risk of depression and risk of suicide independently?

How could gender act as a confounder?



How to present the data?

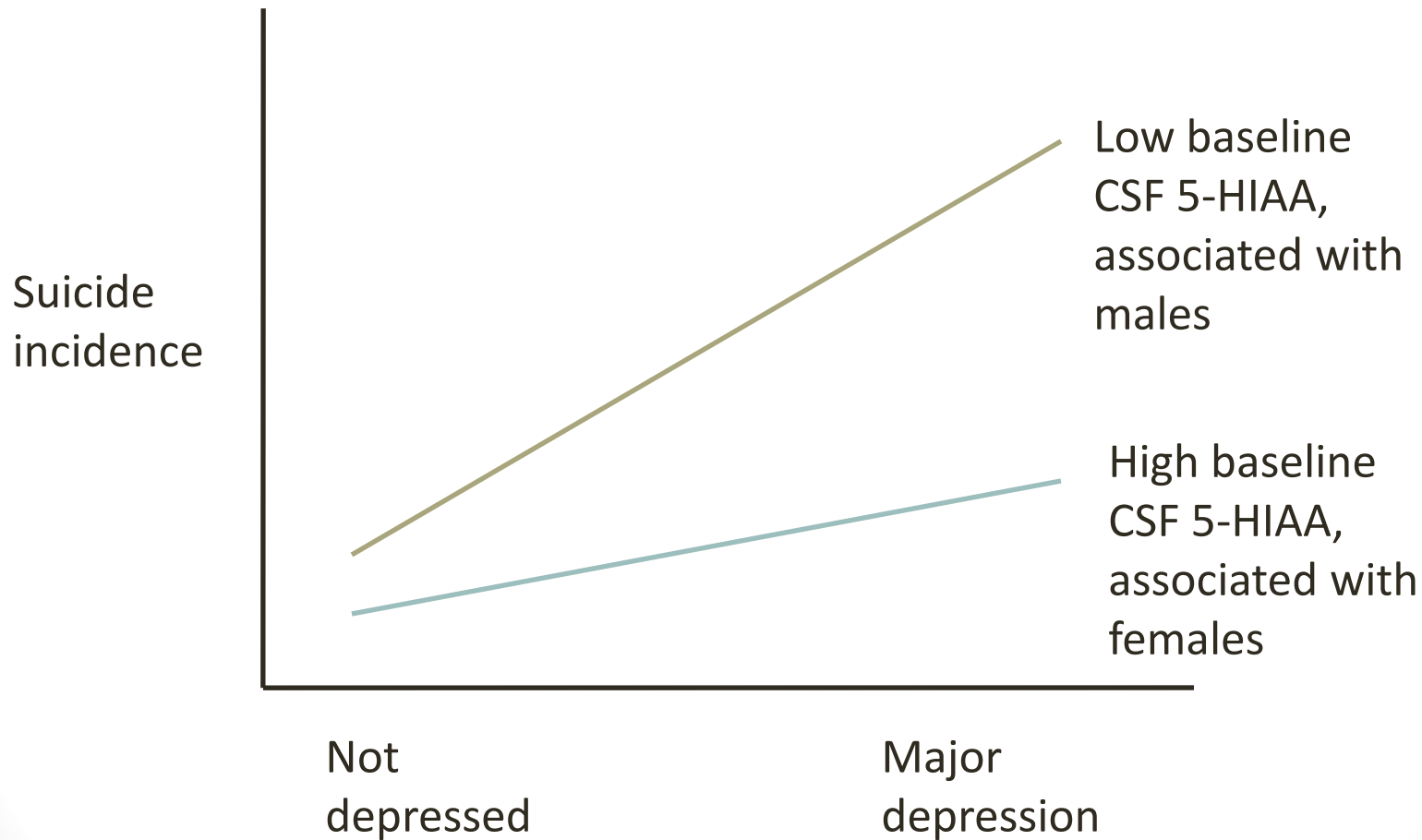
It would be important to present unadjusted and gender-adjusted point estimates of suicide risk/odds to indicate the effect of confounding by gender and to discuss program implications

How could sex act as an effect modifier?

- Low serotonergic function has been shown to be associated with past and future suicidal acts and aggressive behavior
- Males have been reported to have lower baseline levels of CSF 5-HIAA (a marker of serotonergic activity) than females

Mann JJ et al. The neurobiology of suicide risk: a review for the clinician. *J Clin Psychiatry* 1999; 60:7

How could sex act as an effect modifier?



How could sex act as an effect modifier?



So how should you present the data?

- Adjusting would hide the effect measure modification
- Best to STRATIFY and give results for men and women individually
- This prompts areas of concern and focus for future research and prevention programs