

Social Epidemiology – Integrative Question

For centuries the conventional wisdom has been that depression causes people to be physically ill. Over the last 15-20 years a number of epidemiologic studies have attempted to test this conventional wisdom, arriving at conclusions both in support and not in support of this assertion. The Office of Behavioral and Social Science Research (OBSSR) at NIH has conducted a thorough review of the literature and have concluded that five papers, attached here, are the key empiric studies available that best capture the state-of-the-science on this issue, warts and all. All these papers attempt to demonstrate that depression is an independent risk factor for cardiovascular disease. As a consultant to OBSSR you have been asked to do the following:

KEY ANSWER POINTS ARE IN BULLETS BELOW

1. Summarize the key findings in these studies and the areas of agreement and disagreement among these studies [25 points]

- Changes in depression experimentally had no influence on cardiac disease free survival
- There may be an association between depression and CHD incidence (in both women and men), but not CHD mortality; however evidence of a relation between depression and heart failure exists only among elderly women
- There is evidence for an association between depression and markers of cardiac pathology in women
- There is some evidence of an association between depression and sudden cardiac death

2. Identify methodological and analytical reasons for any differences in findings. You should probably touch on issues of study design, measurement of exposure and outcome, bias, confounding, mediation, analytic methods, and considerations about causality. [50 points]

- Different end points, including pathology (MIs, heart failure), mortality (cardiac mortality, overall mortality), and biological markers (coronary and aortic classification)
- Different measures of depression including severity scales including Hamilton severity scales, CES-D, and the short Zung depression scale. Different scales have different external validity and different cutpoints used.
- Different study designs, including longitudinal, experimental, cross-sectional
- Very different set of covariates considered as potential mediators/confounders
- Different study populations, effectively including different confounders accounted for (via restriction) at baseline, including age and gender

3. OBSSR is interested in funding a new study to “settle this question once and for all”. Using your observations in 2 above as a guide, discuss what you think might be two key

design features that should be central considerations in the design of this new study. [25 points]

- Fundamentally depends on which question should be settled. However, assuming that the question is concerned with whether depression is a risk factor for cardiac disease, a new study needs to include (A) a disease free population that is followed longitudinally and (B) a study that includes measures of biological markers for cardiac disease together with “hard” endpoints such as MI and cardiac death. Sufficient repeat measures to consider the time varying patterns of depression would be necessary.

Please make sure to appropriately and adequately cite the papers you are discussing in your answer. You may choose any citation format you wish.