

HS 404: Principles of Epidemiology

Worksheet Assignment #3

Purpose: The purpose of this assignment is to critically analyze the use of certain variables in public health research, such as body mass index (BMI) and exposure to racism, to understand their advantages and disadvantages. Additionally, the assignment aims to explore alternative measures for assessing health outcomes and exposures. It seeks to promote an understanding of the challenges in defining and measuring racism, and the need for improved measurement and prevention strategies. Furthermore, it encourages students to reflect on the oversimplification of variables in research and the potential impacts on public health outcomes. Lastly, it aims to help students identify and define social and behavioral factors that influence health and recognize the complexities in measuring these factors.

Learning Outcomes:

- Students will critically evaluate the use of BMI and propose alternative measures for assessing health outcomes and exposures.
- Students will analyze the challenges and barriers related to defining and measuring racism as a social determinant of health and propose strategies for reducing and preventing racism.
- Students will recognize the limitations of oversimplifying variables in research and the potential dangers of homogenizing groups, particularly minority groups.
- Students will reflect on their learning and consider how it may impact their future work in the field of public health.

Assignment Instructions: Answer the following questions after reading the provided articles.

You will need to read the following three articles:

1. *The Impact of Racism on Child and Adolescent Health*
 2. *Racism, the public health crisis we can no longer ignore*
 3. *The Conceptualization of Everyday Racism in Research on the Mental and Physical Health of Ethnic and Racial Groups: a Systematic Review*
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Questions to Answer:

Think about variables we use out of convenience or habit in public health research, even if they may not be the best choice of measurement to most accurately capture an exposure or a health outcome. For example, let's first think about body mass index (BMI).

When answering these questions, you may want to read about the Health at Every Size movement described [here](#).

Understanding BMI and Health Outcomes

- a. Define Body Mass Index (BMI)
- b. Discuss the advantages and disadvantages of using BMI as a measure of health outcomes and fitness in research. (3 sentences)
- c. Propose five alternative variables to assess overall body health and fitness, and explain your choices.
 - 1.
 - 2.
 - 3.
 - 4.
 - 5.
- d. Why do many studies and healthcare providers continue to use BMI as a measure?

Section Points: 3 points

Next, we are going to examine other “exposures” which are critical to public health, but that can be difficult to measure and which we may actually not be measuring very well. One example is exposure to racism.

Social Determinants of Health - Racism

The questions in this section will primarily use the article *The Impact of Racism on Child and Adolescent Health*. Feel free to use the other articles or other credible sources as well to support your ideas.

- a. Explain how the World Health Organization defines social determinants of health (as per "The Impact of Racism on Child and Adolescent Health").
- b. Describe the biological mechanisms and health impacts of chronic stress caused by exposures like discrimination, racism, and other social determinants (as discussed in "The Impact of Racism on Child and Adolescent Health").
- c. Identify challenges and barriers related to reducing and preventing racism, considering the quotes below from "The Impact of Racism on Child and Adolescent Health."
 - Racism is a “*system of structuring opportunity and assigning value based on the social interpretation of how one looks (which is what we call ‘race’)* that unfairly disadvantages some individuals and communities, unfairly advantages other individuals and communities, and saps the strength of the whole society through the waste of human resources.”

- *“Racism is a social determinant of health that has a profound impact on the health status of children, adolescents, emerging adults, and their families.”*
- *“Pediatrics as a field has yet to systematically address the influence of racism on child health outcomes and to prepare pediatricians to identify, manage, mitigate, or prevent risks and harms. Recognizing that racism has significant adverse effects on the individual who receives, commits, and observes racism, substantial investments in dismantling structural racism are required to facilitate the societal shifts necessary for optimal development of children in the United States.”*
- *“Strategies to address health and developmental issues across the pediatric life span that incorporate ethnicity, culture, and circumstance are critical to achieving a reduction in health disparities.”*

Section Points: 3 points

Measuring and Addressing Racism

The questions in this section will primarily use the article *Racism, the public health crisis we can no longer ignore*. Feel free to use the other articles as well to support your ideas.

- Discuss the dangers of primarily focusing on health outcomes by race/ethnicity.
- Propose strategies for preventing health disparities, particularly those caused by racism.

The authors in the article state that race remains a powerful measure but that it must be better measured, carefully used, and potentially replaced. Since race has no biological construct and is instead a social construct, there must be a better way to measure (and prevent) the underlying exposures that give rise to health inequities. In other words, measuring race is not the same thing as measuring exposure to racism or the actual causes of racism.

- Suggest potential replacement measures for assessing the underlying factors that drive health disparities, emphasizing the need for more accurate measurement and prevention of racism. Explain why you chose the replacement measures you chose.

The authors state, "However, racism is more than this, it is a fundamental cause of ill health. At all socioeconomic levels, people of color have poorer health outcomes. Racism cumulates over the life course, leading to the activation of stress responses and hormonal adaptations, increasing the risk of non-communicable diseases and biological aging. This trauma is also transmitted intergenerationally and affects the offspring of those initially affected through complex biopsychosocial pathways. The root of these so-called biological causes is racism, not race itself."

- d. Utilize insights from "Racism, the public health crisis we can no longer ignore" to support the urgent need for better measurement and prevention of racism.

Section Points: 4 points

Everyday Racism and Measurement

The questions in this section will primarily use the article *The Conceptualization of Everyday Racism in Research on the Mental and Physical Health of Ethnic and Racial Groups: a Systematic Review*. Feel free to use the other articles as well to support your ideas.

"Individuals confronted with discrimination or racism have a higher chance of depression, anxiety, and psychological distress. It also increases the chance of hypertension, chronic health diseases, and breast cancer. The severity of the health risks of discrimination also depends on the type and intensity of discrimination that individuals experience. In recent years, scholars have highlighted the major effects of "everyday racism" and "everyday discrimination" on a variety of health indicators."

- a. Define "everyday racism" as presented in "The Conceptualization of Everyday Racism in Research on the Mental and Physical Health of Ethnic and Racial Groups."
- b. Explore methods to measure racism on both micro (individual) and macro (systemic) levels. Explain the need for multiple measurement approaches.

Micro:

Macro:

- c. Analyze what is missed when measuring racism solely on the micro or macro level.

Micro:

Macro:

Section Points: 3 points

Oversimplification and Health Factors

The questions in this section will primarily use the article *The Conceptualization of Everyday Racism in Research on the Mental and Physical Health of Ethnic and Racial Groups: a Systematic Review*. Feel free to use the other articles as well to support your ideas.

- a. Reflect on the challenges of oversimplifying variables in research, particularly the categorization of people into groups (e.g., age, race, sex). Highlight the potential dangers of homogenizing groups, especially minority groups, and explain why researchers tend to oversimplify variables despite limitations.

Section Points: 2 points

Behavioral and Social Factors Influencing Health

- a. List at least 10 underlying behavioral or social factors that can influence someone's health and provide a brief explanation for each factor.

Examples of factors:

- Being part of a family that regularly engaged in outdoor recreation opportunities (or the opposite)
- Being part of a family that regularly cooked healthy meals and ate meals together (or the opposite)
- Being part of a family that experienced divorce
- Having a parent who was incarcerated

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Specific Definitions and Measurement

Imagine you are doing a research study and that you need to have a way to actually define and measure the variables. Here, you would think of actual specific questions to ask study participants or actual data to use to measure these variables. You want to write definitions here that are so specific someone could actually start a research study using your definitions to categorize study participants.

- b. For each of the 10 factors listed in question 15, create specific, measurable definitions for those variables as if you were conducting a research study.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

- c. Identify which behavioral or social factors on your list are the most challenging to measure and explain why.
- d. Choose three variables from your list that could be measured in various ways. Describe different measurement methods and their advantages and disadvantages for each variable.

Variable 1:

Variable 2:

Variable 3:

Section Points: 4 points

Reflection on Learning

- a. Reflect on what you have learned from the readings and this assignment. Discuss how this newfound knowledge may influence your current or future work in the public health field.

Section Points: 1 point