

Role of Epidemiologic Research in Addressing Health Inequalities

Sheetal Singh

Department of Health Sciences, All India Institute of Medical Sciences, Andhra Pradesh, India

Corresponding Author*

Sheetal Singh

Department of Health Sciences, All India Institute of Medical Sciences,
Andhra Pradesh, India

E-mail: Sheetal123@gmail.com

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Abstract

To conduct relevant epidemiologic research on racial and ethnic health disparities, racial and ethnic samples must be made comparable on other socioeconomic status and contextual features using statistical controls of those unrelated factors. Aside from equal access to research opportunities, equal representation of their respective populations, and similar familiarity with and responsiveness to the procedures and metrics used to collect health data, racial and ethnic groups must also be equally sensitive to them. In the absence of such quantitative parity, numerous unmeasured, uncontrolled factors of race and ethnicity hinder studies of racial and ethnic health disparities. This makes samples, procedures, and measures incomparable between racial/ethnic groups and makes it more difficult to attribute observed health differences to racial/ethnicity rather than to their correlates.

Patterns of health known as health inequalities resemble patterns of socioeconomic position. There are health disparities when people with high social status positions have better health and people with low status positions have inferior health. A group's position (rank) in terms of its power (ownership and control of resources and products), privilege (access to those resources and things), and prestige socio-moral judgement, with some people considered as "better" than others, is referred to as social status in a hierarchical (stratified) society. In order to understand health disparities, social status hierarchies based on race and ethnicity, socioeconomic status (SES) position, and other factors have been studied in the United States.

Introduction

The core knowledge on health inequalities is provided by epidemiologic research, which compare the health of high and low status groups. The distribution of funding and the evaluation of healthcare options are all influenced by these statistics, which also serve as an inspiration for new initiatives and legislation. The creation of disparity reduction initiatives and the evaluation of their effectiveness both rely heavily on epidemiologic research on health disparities. To conduct fruitful research on health inequalities, the social status groups being researched (such as racial and ethnic groupings) must be rendered equal on other status and social contextual variables by statistical controls on such unrelated traits. In

addition, all status groups must respond to the methods and measurements in a comparable way, have an equal probability of participating in the study, and be representative of their respective populations. In the absence of such measurement equivalency, group comparisons are complicated by a number of variables that are connected with group membership, making results challenging to interpret. If sampling, procedures, and measures are incomparable between groups due to uncontrolled, linked factors, group disparities in health cannot be attributed to group membership. In light of this, the challenge of equivalency measurement in research on health inequalities is not a trivial psychometric issue with negligible to no ramifications for science, policy, or medicine. Measurement equivalence is instead essential for comprehending health disparities and influencing public policy.

Furthermore, some equivalence types may be more important than others in particular research on health inequities. Last but not least, some of our proposed methods for measuring equivalence may be related; for instance, measures of wealth may be related to measures of segregation and the prevalence of non-English proficiency, and REM response patterns may be more prevalent among non-English speakers or in segregated communities. The majority of these measures' potential interactions are still unknown, and analyzing the few interactions that have been observed is outside the scope and purpose of this work. We suggest that researchers examine potential interactions between these measures in the same way that they do with more normative measurements.

Despite these limitations, the concerns of sample, technique, and scalar non-equivalence were thoroughly examined, along with reasons and examples. Similar to this, more precise, uncomplicated techniques for boosting measurement equivalence were proposed to enhance epidemiological studies of racial-ethnic health disparities. It is difficult for epidemiologists to abandon non-equivalent methods and assessments, switch to alternatives that are comparable across racial and ethnic groups, and make measuring equivalence the standard in research on health inequalities. This is necessary because epidemiologic information on health inequalities is used to forecast population growth, allocate resources, and change resource distribution. It also influences attempts to close health gaps.

Adequate and quality sleep is crucial for overall health and functioning. Sleep plays a vital role in physical and mental restoration, and a chronic lack of sleep can lead to a range of health issues, including increased stress, impaired cognitive function, and a higher risk of chronic diseases such as diabetes and cardiovascular disease.

Chronic stress can have a profound negative impact on health. Prolonged exposure to stress hormones can weaken the immune system, increase the risk of mental health disorders, and contribute to conditions like heart disease and hypertension. Effective stress management techniques, such as mindfulness, meditation, and relaxation exercises, can help mitigate these adverse effects.

The use of substances such as tobacco, alcohol, and illicit drugs can significantly impact health. Smoking, for example, is a leading cause of preventable deaths worldwide, increasing the risk of lung cancer, heart disease, and respiratory disorders. Excessive alcohol consumption is associated with liver disease, certain cancers, and mental health problems. Illicit drug use can lead to addiction and a range of physical and psychological health issues.

This study has given a thorough assessment of the complex connection between lifestyle decisions and health outcomes. The way a person eats, moves about, sleeps, manages stress, and uses drugs all have a big impact on how healthy they are. The development of chronic diseases and other health-related problems can be influenced by informed decisions about these lifestyle factors, which can either promote optimal health or contribute to it. People should strive for a balanced and healthy diet, partake in regular physical activity, prioritize getting enough sleep of the right kind, and use efficient stress management techniques in order to achieve optimal health. Tobacco, alcohol, and illicit drugs should all be avoided or used in moderation as little as possible for overall wellbeing.

Conclusion

In order to improve sample, technique, and scalar equivalence, this work reviewed the issue of measuring non-equivalence in epidemiologic research on racial-ethnic health inequalities. Comprehensive evaluations of issues (such as cultural characteristics, segregation, etc.) with all conflicting data provided were not presented because our focus was on defining and exposing non-equivalence and then recommending measures to increase

equivalence. Although it is outside the scope and intent of this work to provide thorough, current literature evaluations, their lack is nonetheless a drawback. Similarly, due to space restrictions, several factors, such as racial and ethnic discrimination, which should be evaluated and controlled in research and are extremely relevant to racial and ethnic health inequalities, could not be considered.

Additionally, due to space restrictions, it was not possible to cover the other important categories of measurement equivalence (such as item, construct, translation, impact, etc.), with item equivalence being the most overlooked. Item equivalence refers to the extent to which all social status groups understand the items in surveys and interviews to mean the same thing; it is the extent to which experiences (such as sadness), objects (such as cigars), and behaviors (such as smoking, engaging in strenuous physical activity, and consuming fruits and vegetables) have the same referents for everyone. We draw attention to the fact that numerous ostensibly simple, uncomplicated questions in health surveys and interviews may not signify the same thing to different racial and ethnic groups and have been demonstrated to be inequivalent across those groups, even when asked of the same people.