Ethnicity in Stroke: Practical Implications

To the Editor:

I read with interest the editorial of Drs Fustinoni and Biller on ethnicity and stroke.1 The authors give several examples to demonstrate the dark side of “ethnicity” as an epidemiological variable. I agree that ethnicity is a complex, inherently heterogeneous concept influenced by different cultural and socioeconomic factors.2 The authors make the point that ethnicity is neither precise nor easily measured. However, I would like to discuss some issues of potential interest.

First, ethnicity is derived from a Greek word meaning “population” or “tribe.” The criteria to define ethnicity have varied worldwide during the past decades. Therefore, criteria to classify ethnic groups may vary from one country to another.2,3 It is well known that most classifications have a bias. However, it is crucial to identify population subgroups to easily recognize and differentiate risk factors and, subsequently, patterns of disease. Thus, classifications are necessary in clinical practice and research, even if not perfect. It is the duty of the clinical investigator to use the most precise definition possible. Ethnic groups may be classified by using different criteria, such as geographic origin; migratory status; self-defined, past generation criteria; and tribe origin, among others. In addition, ethnicity depends on the context in which the definition is made.4 The same criteria are not necessarily valid for different countries.

Second, the authors mention that “ethnic categories are usually not defined in scientific reports, which results in dubious findings that are difficult to compare.” Of course, poorly defined groups will contribute more confusion than clarification to a given topic. However, the existence of poorly designed studies does not justify the elimination of all data derived from other good reports.

Third, Fustinoni and Biller cite questionable examples that have been used to criticize ethnicity, such as, “What is black to someone from the United States may be white to a Brazilian or a Caribbean from the United States.” Other authors have used erroneous definitions of ethnicity including skin color, phenotype, and socioeconomic characteristics.3–5 Moreover, ethnicity has erroneously been used as a synonym of race. All these variables are unquestionably related to ethnicity, but should not be used to define it. Additional confusion ensues when authors leave in the hands of the individuals studied the decision for their own classification (self-defined ethnicity) or use the family’s surname.1,3,6 Some journals have recommendations to describe ethnicity.2,7 Thus, there have been published guidelines on the use of race, ethnicity, and culture descriptions in an attempt to consistently measure all of them.7 The more descriptive the definition of ethnicity, the more reliable the classification for a given population.

Fourth, to my understanding, the authors transmit a negative perception of ethnicity as an epidemiological variable and use confusing examples to validate their opinion. They mention that “the consequences of flawed ethnicity research may lead to the assumption that ethnic minorities are an unhealthy social burden, that there are ‘ethnic’ diseases which separate specific groups, . . . and that whites are the gold standard of health.” This statement manifests the existing confusion between race and ethnicity and may be misinterpreted by the readers.

Fifth, most criticisms of ethnicity may apply to other frequently used epidemiological variables. In terms of clinical epidemiology, ethnic populations are mostly heterogeneous and influenced by important confounders (eg, socioeconomic status). However, its heterogeneous quality does not imply that there is “nothing that could be done” or that the ethnic differences in such a population should be ignored. Most epidemiologists recognize the generalizability (external validity of the study) but not the concept of ethnicity.10 The goal of an epidemiological study should be to analyze an appropriately defined ethnic subgroup within a population, with its specific risk factors, to predict the pattern of a disease. As a result, preventive strategies could be considered to reduce the stroke incidence in such population. Preventive measures for one ethnically defined population may be different from those for others. For example, it has been suggested in descriptive studies that native people (individuals born in South American countries without European origin) from South America have a higher frequency of hemorrhagic stroke and presenting small-artery disease. Certainly, prospective studies would be necessary to determine whether native people from different South American countries have the same risk factors and stroke subtypes. Thus, ignoring the concept of ethnicity will limit our knowledge of these important findings and, subsequently, the opportunity to implement appropriately distributed preventive strategies.

Finally, our goal should be to detect properly designed studies in which ethnic groups are adequately defined. A clarifying article; even in controversial scenarios, should include some recommendations, suggestions, or guidelines. If not, the authors translate their own uncertainty to readers. This is ultimately a defeatist and unproductive attitude. As former French President de Gaulle said, “Do you bring solutions or are you part of the problem?” Ethnicity is a necessary epidemiological variable for differentiating subgroups of individuals within a population who share disease variables different from those in other people within the same population. Recognizing the value of ethnicity will improve our knowledge of stroke epidemiology.

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Response

We are grateful for the comments of Dr Saposnik and for his interest in our editorial.1 We feel that, on the whole, his comments are in agreement with our own. Nevertheless, some points must be made.

First, Dr Saposnik states that, because ethnicity criteria “have varied worldwide during the past decades,” they “may vary from one country to another.” We take so many things for granted, but, clearly, confusion in nomenclature has become particularly acute in the last century. Dementia of the Alzheimer type or Parkinson disease have internationally defined diagnostic criteria, applicable in any country
in the world. So does stroke. In the United States, Russia, or China, everyone understands the meaning of these or other similarly defined diseases. This is not the case with ethnicity; many of the published studies are susceptible to bias and confounding. What is considered “European” in Australia is nothing but vague in Europe, because such an “ethnic group” may include such culturally (and probably ethnically) different subgroups as, say, Swedes, Hungarians, or Greeks, or even Celts or Slovaks. It is the same with “Hispanics” in the United States, which may include Spanish-speaking Chilenos of German descent to Peruvians of Inca or Mexicans of Aztec descent, a fact which also reminds us that, for example, the term “Indian” could likewise include widely differing “ethnicities.” Or “natives from Brazil,” as Dr Saposnik suggests: it is common knowledge that in the Brazilian Amazon jungle there are numerous different tribes and cultures, some possibly still unrecognized. The same argument holds for “native people from South America,” who allegedly “have a higher frequency of hemorrhagic stroke and penetrating small artery disease,” a fact for which, unfortunately, Dr Saposnik gives us no reference, but we suspect originates in the work of Del Brutto and colleagues in a population of “Hispanics” living in Guayaquil, Ecuador. In this article, as stated in the introduction, the authors study patients from “a major public hospital serving people of low socioeconomic status who belong to the Mestizo population (a racial admixture of Ecuadorian natives and Spaniards).” Under the heading of subjects and methods, they go on to say that the registry “included 500 consecutive Hispanic patients with a first stroke....” The reader initially learns that the population to be studied is “Mestizo,” which is defined racially, and is then told that the patients included are “Hispanic,” for which no definition is provided. Did this population also include Spanish-speaking natives without “admixture”? Did it exclude non–Spanish-speaking “Mestizos,” ie, people speaking only local languages? The authors do acknowledge that socioeconomic, dietary, and environmental factors may play a role in their findings. Perhaps these factors should be studied before concluding that the differences observed are ethnic.

Second, we did not state that “nothing could be done” or that “ethnic differences should be ignored.” Neither did we fail to offer recommendations or suggestions, as we did with genetic studies. Finally, because it seems reasonable to infer that there may be important epidemiological diversities in the occurrence of stroke in different ethnic subgroups which might point to necessary prevention and treatment strategies, it is essential that these groups be adequately and internationally defined. These definitions should take into account the historical, cultural, geographic, and, if possible, genetic peculiarities of the populations to be studied, and results should be adjusted for socioeconomic, environmental, and other confounders. Conclusions drawn from groups selected solely on the basis of skin color, language, vague geographical origin, self-classification, and other socially defined variables are questionable and should be avoided.

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