



Evaluation FastFacts

from the Evaluation Center@HSRI



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This is one in a series of briefings on new and current mental health services evaluations, resources, and methods. We hope FastFacts will be a quick and easy way for you to learn important information in the field of evaluation. If you have any ideas on how FastFacts could be more useful to you, please contact Dow Wieman, Ph.D. at 617-876-0426 x2503 or dwieman@hsri.org.

Research Shows Ethnicity a Factor in Medication Response

by Susan Milstrey Wells

Sociocultural, genetic, and environmental factors have long been known to play a role in everything from how people express their emotions to the kind of foods they eat. More recently, a growing body of research has begun to highlight differences in the way racial and ethnic groups respond to psychiatric medication.

Noted researcher Keh-Ming Lin, M.D., M.P.H., of the University of California at Los Angeles School of Medicine, reports “dramatic cross-ethnic and cross-national variations in the dosing practices and side-effect profiles in response to practically all classes of psychotropics.”¹ Though results vary depending on the research design, a number of recent studies indicate that many Asians, African Americans, and, to a lesser extent, Hispanics, respond to lower doses of many psychiatric medications, and they may have greater side ef-

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The Evaluation Center@HSRI

is a technical assistance center funded by the federal Center for Mental Health Services (CMHS), Substance Abuse and Mental Health Services Administration (SAMHSA), and operated by the Human Services Research Institute (HSRI). The mission of the Center is to provide evaluation technical assistance to state and non-profit and private entities including, but not limited to, consumers, families and provider groups. The Center presently has six programs designed to fulfill this mission—

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fects even at the lower doses. The mechanisms that explain these differences are discussed in brief below.

Pharmacokinetics and Pharmacodynamics

Pharmacokinetics is the study of how a drug is absorbed, distributed, metabolized, and excreted from an individual's body.¹ Drug metabolism is controlled by a number of specific enzymes, and the action of these enzymes varies among individuals. For example, most individuals show normal activity of the IID6 isoenzyme that is responsible for the metabolism of many tricyclic antidepressant medications and most antipsychotic drugs. However, studies have found that one-third of Asian Americans and one-third of African Americans have a genetic alteration that decreases the metabolic rate of the IID6 isoenzyme, leading to a greater risk of side effects and toxicity.²

Though enzyme activity is genetically determined, it can be altered by such cultural and environmental factors as diet, the use of other medications, alcohol use, and disease states. In fact, Dr. Lin notes that as immigrants are exposed to these factors, their metabolism may change.¹

Pharmacodynamics refers to the role that specific receptors or site of action play in mediating the effect of the drug. According to David Henderson, M.D., a psychopharmacologist and Senior Associate with the Multicultural Mental Health Research Center at Boston University Medical Center, this action is more difficult to study because it takes place at the cellular level.

However, when everything else is equal--i.e., two individuals have the same blood level of a medication and they clear it at the same rate--pharmacodynamic differences may explain why one individual may experience a greater number of side effects

than another, or may experience side effects at a lower dose. Pharmacodynamic responses may also be influenced by racial and cultural factors.

Cultural Factors

In addition to biology and environment, culturally determined attitudes toward illness and its treatment may affect how an individual responds to psychiatric medication.

In addition to biology and environment, culturally determined attitudes toward illness and its treatment may affect how an individual responds to psychiatric medication. Some cultures see suffering and illness as unavoidable and not amenable to medication,³ while others treat symptoms with polypharmacy, often mixing medications with herbal drugs.⁴ The practitioner who is not aware of these beliefs runs the risk of having patients disregard the recommended treatment plan, according to Dr. Henderson.

“An African American man who is agitated is assumed to be violent, is given a more serious diagnosis, and is more heavily medicated,” Dr. Henderson says, though this response is at odds with the patient's genetic makeup. Formal diagnostic instruments, such as the SCID-DSMIV, generally yield more accurate diagnoses for minority patients, he adds. Recommendations for Research and Practice

The differential response of many ethnic minorities to certain psychiatric medications raises important concerns for both research and practice.

Include Ethnic Groups. Most studies of psychiatric medications have white male subjects, notes Dr. Henderson. “We need to include different populations in these studies to determine whether they respond at different doses, whether they metabolize at different rates, and whether they become toxic at

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different levels,” he says.

A number of methodological concerns must be addressed. Because there is often a greater difference within racial and ethnic groups than between them, researchers must be certain they choose prototypical representatives of these groups, or use a larger random sample.⁵

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Further, because broad racial and ethnic groups have many different subgroups, it may not be enough to characterize individuals as Asian, Hispanic, Native American, or African American.⁵ Even within the same ethnic group, there are no reliable measures to determine important cultural differences.⁶

“Start Low and Go Slow.”

Individuals who receive a higher dose of psychiatric medication than needed may discontinue treatment because of side effects, or they may develop toxic levels that lead to serious complications. A reasonable approach to prescribing medication to any psychiatric patient, regardless of race or culture, is to “start low and go slow,” Dr. Henderson says. Doctors need to be receptive to hearing about side effects, and be open to lowering medication doses or trying a different class of drugs, he adds.

Looking Forward

As scientific understanding advances, Dr. Henderson is hopeful that someday there may be a simple blood test to predict how an individual will respond to a specific class of drugs. In the meantime, he believes, practitioners should follow some simple advice. “Physicians must take the time to understand how the patient, the family, and the culture interpret mental health problems and what they expect from treatment,” Dr. Henderson says. This allows the provider to integrate Western medications with appropriate cultural interpretations.

Psychopharmacology Across Cultures: The Science and Practice of Ethnopsychopharmacology

Friday, October 23, 1998

Boston, MA

This conference brings together national experts in the field of ethnopsychopharmacology to increase the understanding and knowledge about cultural, racial, and ethnic differences in response to psychotropic medications. It is sponsored by Harvard Pilgrim Health Care with contributions from the Multicultural Mental Health Research Center and Tufts Managed Care Institute. It is supported in part by Eli Lilly, Solvay Pharmaceuticals, Bristol-Meyers Squibb, SmithKline Beecham Pharmaceuticals, and Pfizer.

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