
NIDA NOTES

Director's Column

Volume 13, Number 4 (November, 1998)

Gender Matters in Drug Abuse Research

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Through this research, we are learning more and more about differences between women and men in the origins of drug abuse, the consequences of drug abuse and addiction, and the factors that influence drug abuse relapse and recovery.

Accumulating evidence indicates that drug abuse may begin and progress differently, have different consequences, and require different prevention and treatment approaches for women and men. Therefore, NIDA has strongly supported research to identify gender differences and gender-specific aspects of drug abuse and addiction and to apply these findings toward more effective drug abuse prevention, treatment, and services for both women and men.

Historically, NIDA has supported a broad program of research on the effect of women's drug use on pregnancy, maternal health, and childhood development. A little more than 5 years ago, NIDA broadened the scope of its gender-related research by issuing program announcements calling for research to examine the causes and consequences of drug abuse among women of all ages, regardless of their parental status. In the fall of 1994, NIDA sponsored a landmark national conference on addiction and women's health. This meeting launched our expansion of research on the role of gender in all aspects of drug abuse and addiction. Since then, our Women and Gender Research Group, which is made up of representatives from every NIDA Division and Office, has been working to further develop NIDA's research on women's health and gender differences and to disseminate the findings to professionals in the field and the general public.

Today, gender-related research is integrated throughout NIDA's entire portfolio. This research extends from basic molecular and cellular studies to clinical and epidemiologic studies and is grouped into four major areas: etiology, consequences, prevention, and treatment and services. Through this research, we are learning more and more about differences between women and men in the origins of drug abuse, the consequences of drug abuse and addiction, and the factors that influence drug abuse relapse and recovery.

Our research on the origins of drug abuse has found gender differences in factors affecting initiation, progression, and

maintenance of drug use. For example, basic behavioral and neurochemical research has suggested that women may be more sensitive than men to the rewarding effects of drugs, perhaps due to differences in brain chemistry. Animal studies also have shown that females respond more than males to the stimulating and reinforcing properties of abused drugs. Other studies indicate that the intensity of a drug's effects on women varies during different phases of the menstrual cycle. These physiological differences may help account for data indicating that women may proceed to drug abuse and addiction more rapidly than men do after initial drug use.

Evidence also indicates that psychosocial factors, such as childhood physical and sexual abuse, depression and posttraumatic stress disorder, relationships with a significant other, and partner violence play a more important role for women than for men in beginning and continuing drug use. For example, one research study suggests that women's tobacco use is controlled more by social and sensory factors and less by dependence on nicotine itself, compared to men's tobacco use.

NIDA-supported research also is finding gender differences in the consequences of drug abuse. For example, both animal and human studies indicate that men may be at greater risk than women for strokes and for mental deficits from chronic cocaine abuse. Other research suggests that the female hormone estrogen may play a role in reducing cocaine toxicity in women.

One of the most devastating health consequences of illicit drug use for both women and men is AIDS, with half of all new HIV infections now linked to injection drug use. Approximately two-thirds of AIDS cases in women and more than half of pediatric AIDS cases in the United States are related to injection drug use by women or their sexual contact with an injecting drug user.

NIDA's comprehensive AIDS initiative is uncovering significant gender-related differences in factors that contribute to and protect from HIV risk. For example, one study of female injecting drug users has found that the family plays a more important role for women than for men in resistance to needle-sharing behaviors.

Other studies in our AIDS research portfolio are identifying gender-specific strategies to decrease injection drug use and high-risk sexual behaviors among women and men. For example, researchers at Northern Arizona University in Flagstaff have found that male drug abusers are more likely to reduce their high-risk sexual behaviors if given HIV risk-reduction information on the street, while female drug abusers respond better if this information is given along with counseling in the more protective

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environment of an office (see "[Researchers Find Gender Differences in How Drug Abusers Respond to HIV Prevention Strategies](#)").

The ultimate goal of our research is to apply our increased understanding of gender-specific drug abuse factors to the development of prevention and treatment interventions that better meet the unique needs of both women and men. For example, a recent NIDA-supported study indicates that treatment interventions need to address differences in psychosocial factors that influence women's and men's relapse to drug use following treatment. In the study, researchers at the University of Pennsylvania found that negative emotions and interpersonal relations are linked to relapse among cocaine-dependent women while men are more likely to experience positive emotions prior to relapse (see "[Men and Women in Drug Abuse Treatment Relapse at Different Rates and for Different Reasons](#)").

In the last 5 years, NIDA has greatly increased scientific knowledge about gender-related differences in almost every aspect of drug abuse and addiction. However, we still have tremendous gaps to fill in that knowledge. We need to learn more about how gender relates to the impact of violence and victimization, devise better gender-specific treatment for comorbid mental disorders, and learn how to adequately address gender-related cultural factors in prevention and treatment, to name just a few.

To fill those gaps and build on our current knowledge, we are encouraging research that addresses gender-specific issues and gender differences in such diverse drug abuse areas as origins and pathways, biomedical factors, comorbid mental disorders, epidemiology, medical and health consequences, health services, special populations, HIV/AIDS, prevention, and treatment. Evidence from NIDA's gender-related research indicates that prevention and treatment strategies that address gender differences can be more effective than one-size-fits-all approaches in preventing drug abuse and relapse following treatment. Through our continued strong emphasis on the role of gender throughout our research portfolio, NIDA is working to speed the day when gender differences are successfully addressed in all areas of drug abuse prevention and treatment.

For More Information An overview of NIDA's research program on women's health and gender differences, details of research advances and opportunities, program announcements, publications, and research reports can be found under "[Women's Health and Gender Differences](#)," on NIDA's home page on the World Wide Web at www.nida.nih.gov. Information about

women and drug abuse also is available from Infobox, NIDA's automated information retrieval system, at 1-888-644-6432. In addition, the "[Bulletin Board](#)" includes a description and ordering information for a recently released NIDA publication, [*Drug Addiction Research and the Health of Women*](#).

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