Prevention of eating disorders: challenges and opportunities

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Prevention of Eating Disorders: Challenges and Opportunities

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Abstract: Objective and Methods: On April 25, 2000, the National Institute of Mental Health (NIMH) convened a Roundtable on the Prevention of Eating Disorders to review the state of prevention science in eating disorders and formulate recommendations regarding future steps to be taken in this area of research. Results and Discussion: This report summarizes the roundtable discussion. The discussion focused on four major areas: the state of the art of risk factors research, translational research, prevention research in related fields, and cutting-edge efforts in eating disorder prevention. Conclusions: The report concludes with specific recommendations. © 2002 by Wiley Periodicals, Inc. Int J Eat Disord 31: 233–239, 2002; DOI 10.1002/eat.10014

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INTRODUCTION

On April 25, 2000, the National Institute of Mental Health (NIMH) convened experts for a Roundtable on the Prevention of Eating Disorders to update the state of the science for risk factors and preventive interventions for eating disorders, to address the issue of whether and how the field is ready to proceed with the development of preventive efforts, and to make recommendations for the future. Experts (listed at the end) presented and discussed these areas with staff from the National Institutes of Health (NIH).

STATE OF THE ART FOR RISK FACTORS RESEARCH

Several challenges have impeded progress in identifying risk factors for eating disorders. These include the lack of nationally representative epidemiologic data on full syndrome eating disorders; the low base rate of eating disorders; the multifactorial, complex etiology of eating disorders; and the lack of data illustrating the public health significance of symptoms of eating disorders (e.g., binge eating, purging).
**Lack of Nationally Representative Data**

It is assumed that eating disorders begin during adolescence, yet no nationally representative study has been conducted with adolescent participants. Reliance on clinic samples has led to underestimates of low socioeconomic status (SES) and ethnic minority populations, contributing to the myth that eating disorders are a problem of “the young, rich and white.” Indeed, a growing number of surveys indicate that ethnic minority groups are not immune to developing these disorders (Smolak & Striegel-Moore, 2001). Because the Epidemiologic Catchment Area study (ECA) was designed before the introduction of the bulimia nervosa (BN) diagnostic category in the Diagnostic and Statistical Manual of Mental Disorders (DSM-III; American Psychiatric Association [APA], 1980), the ECA only screened for anorexia nervosa (AN). The first National Comorbidity Survey excluded eating disorders because they were seen as too rare to warrant inclusion. However, the currently fielded National Comorbidity Survey-Replication and National Survey of African Americans will administer an eating disorders diagnostic module to the adolescent sample and to a proportion of the adult sample. Up-to-date data are needed on the prevalence of all eating disorders as recognized in DSM-IV (APA, 1994).

**Eating Disorders Are Relatively Uncommon.**

Estimates of lifetime incidence of eating disorders range from less than 0.5% in adult women for AN to 3% for binge eating disorder (BED; Van Hoeken, Lucas, & Hoek, 1998). Female adolescents comprise the population group with the highest rate of current disorder, the peak period of onset occurring between 16 and 18 years of age (Lewinsohn, Striegel-Moore, & Seeley, 2000; Woodside & Garfinkel, 1992). Eating disorders among males appear to be even more rare with an estimated female-to-male gender ratio of 10:1 (Garfinkel et al., 1995; Woodside et al., 2001). Recent data suggested an increase in hospitalization rates for males with an eating disorder (Braun, Sunday, Huang, & Halmi, 1999). In the absence of epidemiologic data, it is not clear, however, whether this increase reflects a true increase in incidence or prevalence or improved awareness of eating disorders in male populations among service providers.

**Risk Is Multifactorial**

Few studies have employed designs conducive to testing risk factor hypotheses (for review, see Striegel-Moore & Cachelin, 2001). Multiple domains (personal vulnerability including genetic, biological, and personality factors; familial factors; peers and larger social context variables; cultural factors; traumatic events) contribute to risk, yet most studies focus on limited subsets of the risk domains. Among risk and protective factors, research is needed to determine the attributable risk (potency) of individual and combinations of factors (Kraemer et al., 1999). There is considerable scientific evidence that eating disorders aggregate in families, suggesting a genetic liability as well as social learning mechanisms (Klump, Kaye, & Strober, 2001). Personal vulnerability factors have been shown to contribute to risk, including childhood obesity, body image dissatisfaction, low self-esteem, and dieting (Crago, Shisslak, & Ruble, 2001; Stice, 2001). Because eating disorders are relatively uncommon, prospective risk
factor studies need to include very large samples and are, therefore, very costly. To make up for the low number of cases, prospective studies have focused on symptoms of eating disorders, rather than on syndromes. This approach may obscure possible differences in risk profile between individuals with AN compared with those with BN or BED.

Public Health Significance of Eating Disorders Symptoms

Because full-syndrome eating disorders are relatively uncommon, the impact of eating disorders on public health often is not appreciated fully. However, they are associated with considerable impairment in health and interpersonal adjustment, have high relapse rates (Herzog et al., 1999), and carry increased risk for death (Agras, 2001; Herzog et al., 2000). Moreover, some symptoms also contribute to impaired health and psychosocial functioning, even when they occur in the absence of a full-syndrome eating disorder. Epidemiologic studies have found that disordered eating is associated with nutritional deficiencies (Neumark-Sztainer, Story, Resnick, & Blum, 1998). There also is an incomplete consideration of obesity as a risk factor for, or consequence of, eating disorders. Recent studies have shown that binge eating is associated with obesity (de Zwaan, 2001), a major public health concern. The lack of data about eating disorders among ethnic minority groups contributes to the perception that prevention initiatives are irrelevant for minority populations.

TRANSLATIONAL RESEARCH: CONTRIBUTIONS FROM NEUROSCIENCE

The science of preventing eating disorders would benefit from the translation and application of several basic science research areas. For example, there is little translation of the social psychology of how certain groups perceive media ads or public health messages with regard to overeating or undereating, or how certain media campaigns could be evaluated for their effectiveness in reducing eating disorders. A second area of translational research considered at the roundtable was the application of animal models of ingestive behaviors. Watts (2000) presented a general scheme for the neural control of ingestive behaviors in animals. This scheme proposed that the expression of specific ingestive behaviors is controlled by the integrated output from separate but interacting neural control networks (behavioral controllers). Each of these networks has individual component cell groups located in the hindbrain, midbrain, telencephalon, and particularly the hypothalamus, which can stimulate, inhibit, or disinhibit specific behaviors. Anorexia in animals often results from the impact of homeostatic challenges (e.g., dehydration or cytokines) on these behavioral controllers, or from cognitive influences (as occurs during stress). For human eating disorders, dysfunctional inputs to these core networks likely emanate from the cortex, hippocampus, and amygdala to affect ingestive behaviors. The influence of social, emotional, and cognitive factors on the components of the neural control networks in humans needs to be explicated further. The study of animal models will contribute to our understanding of the interface between cognitive-behavioral inputs and the neural networks responsible for controlling ingestive behaviors.
WHAT CAN BE LEARNED FROM OTHER PREVENTION RESEARCH APPROACHES (E.G., DEPRESSION, SUBSTANCE ABUSE)?

Approaches in other prevention fields could be applied to eating disorders prevention. Psychosocial treatments have been developed to reduce depression risk in offspring with depressed parents. These interventions appear to be effective, regardless of the route of transmission of risk (genetic or learning). Targeting offspring of parents with eating disorders, a group that has been shown to be at risk, has not been attempted yet in the field of eating disorders. An important lesson taken from the substance abuse prevention area is that certain levels of intervention potency must be developed and maintained for effectiveness. The Drug Awareness Resistance Education (DARE) program, for example, was based on an effective intervention, but its translation into applications lacked potency and fidelity, despite its popularity (Brown & Liao, 1999).

Perhaps, the most important lesson learned from other prevention research efforts is the need for carefully designed intervention trials. One of the most common methods of improving internal validity is the random assignment of individuals. When random assignment can be performed from both a practical and ethical standpoint, it should be used, particularly in this early stage of research on eating disorders when questions of efficacy versus iatrogenic effects still need to be addressed.

A second approach is the consideration of designs that may assign groups of subjects to intervention, rather than single individuals, particularly when the interventions focus on group change, as well as individual change, or when the effectiveness of policies is the focus of evaluation (Mann, Nolen-Hoeksema, & Huang, 1997). Group-based interventions have been shown to have beneficial effects (Botvin, Baker, Botvin, & Diaz, 1995, for school-based interventions to prevent adolescent drug use; Kelly et al., 1997, for community-based interventions to prevent HIV; and Ialongo et al., 1999, for classroom-based interventions to prevent aggression and school achievement), including effects that can be obtained through “social norms marketing” as described by Dr. Mann. However, group-based interventions can result occasionally in harmful effects (Dishion, McCord, & Poulin, 1999, for drug use). This suggests that particular components of group interventions need to be assessed carefully for effectiveness and safety because subjects within groups may represent a wide range of susceptibility to risk. Group-based intervention trials have units of random assignment at a level believed to be most salient for the effect of the intervention—what one calls the unit of intervention (Brown & Liao, 1999). In addition, some trials have multiple levels of randomization to improve the power of the design (Ialongo et al., 1999) and often form blocks or stratifications on higher-order levels such as schools and neighborhoods for a classroom-based intervention (Brown & Liao, 1999). It is likely that similar designs would be useful for the study of eating disorders.

STATE OF THE ART OF CURRENT EATING DISORDERS PREVENTION PROGRAMS

Universal and targeted (selective and indicated) interventions have been developed to reduce the burden of suffering from eating disorders. To date, the majority of eating disorders preventive interventions have been universal approaches, typically using a classroom as a setting and the curriculum as the intervention (Franko & Orosan-Weine, 1998; Levine & Piran, 2001). Of the approximately 20 controlled studies of universal interventions, few have reported a positive behavioral effect. Many programs resulted in
increased knowledge or they produced at least one significant long-term attitudinal effect. A number of programs produced significant improvements from pretest to posttest, but the effects dissipated over the follow-up or were matched by inexplicable improvements in the control group. These findings suggest that more intense or sustained universal approaches may be needed to affect behavioral outcomes. Because the strengths of universal interventions include their integration into existing social structures (e.g., classrooms, athletic teams), as well as their potential to address risk factors for multiple outcomes (e.g., self-esteem, tolerance of diversity, physical fitness, as well as eating behaviors), universal prevention approaches warrant further study.

Targeted approaches to eating disorders prevention involve intervening with those exhibiting risk factors and/or mild symptoms of disorders. Common targets in these selected intervention approaches include the reduction of excessive weight concerns and body dissatisfaction. The typical mode of delivery for these interventions has been psychoeducational, either delivered in group or classroom settings, with more recent efforts including the utilization of computer technology (CD-roms, Internet-based homework, guided chat rooms). Initial studies in this area have found promising results (Taylor, Winzelberg, & Celio, 2001) with several recently NIMH-funded prevention trials have focused on reducing excessive weight concerns and negative body image.

A number of prevention efforts have noted that there is substantial variation in response to interventions, including the worsening of risk factors for some subgroups (Huon, Roncolato, Ritchie, & Braganza, 1997; Mann, et al., 1997; O’Dea & Maloney, 2000). Research is needed to understand why some youth exposed to these programs benefited, whereas others maintained or increased the severity of risk factors. Because the NIMH now requires a data and safety monitoring plan to be submitted with applications that involve interventions (see http://WWW.nimh.NIH.GOV/research/safetymonitoring.cfm), the field would benefit from articulating more systematic approaches to assessing and minimizing negative side effects of preventive interventions.

**RECOMMENDATIONS**

In order to further the development of eating disorders prevention research, the roundtable participants agreed that the following would be facilitative:

1. Develop common definitions of symptoms, syndromes, risk factors, and outcomes to better assess progress in epidemiology and prevention trials.

2. Encourage the integration of basic social science research in prevention approaches, such as assessing the effects of social norms marketing to reduce risk factors.

3. Encourage research on neural mechanisms of eating disorders at the animal level. Foster cross-discipline interactions among animal experimentalists, clinicians, and other researchers in the field.

4. Develop guidelines for assessing the scientific merit of eating disorders prevention trials, using guidelines developed for clinical trials for other disorders, such as substance abuse, as a model.

5. Develop approaches to assess and minimize iatrogenic effects. Research that determines whether certain approaches are iatrogenic for certain subgroups may diminish unwarranted concerns and/or determine that some approaches are indeed harmful.

6. Encourage research in biology, personality traits, family and social groups, and societal norms and values, all of which influence the development of eating disorders. This could include “downstream” interventions at an individual level, “midstream”
interventions aimed at organizations, worksites, health care settings and communities, and “upstream” interventions that involve social norms and policies.

7. Increase awareness that eating disorders are a public health problem and that prevention efforts are warranted. It may be helpful to develop common goals with advocates with similar interests. For example, the goal to improve healthy eating behavior may be shared by eating disorders prevention advocates as well as advocates promoting improved physical fitness and the prevention of obesity.

8. Adopt an approach that considers the public health impact of these disorders. Analyze perceptions, attitudes and policies that contribute to the stigmatization of eating disorders.

9. NIMH should designate an “eating disorders point person” to facilitate systematic growth and help interface with other NIH institutes (National Institute of Diabetes and Digestive and Kidney Diseases [NIDDK], National Institute of Child Health and Human Development [NICHD], National Institute on Drug Abuse [NIDA]). (Authors’ note: Since the workshop, Dr. Regina Dolan-Sewell was appointed to serve as the NIMH contact for eating disorders research. She can be contacted at Rdolan@mail.nih.gov).

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