

## Eating Disorders and Risk of Death

Eating disorders are common and well known to be associated with a variety of medical complications and elevated risk of mortality. For anorexia nervosa, these associations have been known as far back as some of the earliest descriptions of the illness. For example, in 1689, Richard Morton (1) described two cases of what in retrospect appear to have been anorexia nervosa; one of the two patients died, apparently of the illness. Similarly, in describing and naming anorexia nervosa, Sir William Gull (2) (in 1874) included mortality in his description. A substantial body of more recent work has systematically documented high mortality, including suicide risk (3, 4).

However, while these relationships are well known, the timing of mortality risk across the course of the illness remains unclear. One could imagine a scenario of elevated mortality early in the illness, wherein those particularly prone to medical complications from malnutrition would be at high risk for death. Conversely, risk of death might climb after prolonged illness as complications of starvation mount. Similar predictions about the timing of suicide risk might be made as well. A

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number of potential predictors of mortality, including certain medical complications, severity of weight loss, severity of co-occurring psychopathology, and severity of the eating

disorder symptoms themselves, may be important. However, our knowledge of predictors of mortality in eating disorders is limited (5).

In this issue of the *Journal*, Franko et al. (6) report on a long-term follow-up study of a cohort of individuals with eating disorders. The report examines mortality both in those with anorexia nervosa and in those with bulimia nervosa. The main findings of the study were that mortality was concentrated mostly in those with anorexia nervosa. Notably, standardized mortality ratios were high early in the study (7.7 in the first 10 years) but dropped with increasing length of follow-up. On the other hand, standardized mortality ratios increased with duration of illness (3.2 for duration under 15 years and 6.6 for duration over 15 years). The authors had previously reported very elevated standardized mortality ratios for suicide in this sample (greater than 50), but over the course of this much longer follow-up period, no further suicides occurred. Thus, the standardized mortality ratios for suicide remained high for the sample as a whole (25.2) but appeared to decrease with time.

This study has many strengths. The sample was well defined, and participants underwent careful follow-up assessment. The period of observation was long (a median of 20 years). Long-term mortality studies can be confounded by methods of vital status assessment, unless linkage to computerized death records is available—and fortunately, such linkage was used in this study (7). Limitations include the fact that detailed data were not available at intervals throughout the entirety of the follow-up observation period. In addition, the standardized mortality ratio for individuals with bulimia nervosa and no history of anorexia nervosa was 2.3, but this did not represent a statistically significant increase. However, the sample size

with bulimia nervosa was relatively small, and it remains possible that a larger sample would have revealed elevated mortality in bulimia nervosa as well. An additional limitation is that while eating disorder not otherwise specified is the most commonly diagnosed eating disorder, it was not included as an entry diagnosis in this study (a limitation shared with most studies in the existing literature).

What are the implications to draw from this study? First, these findings of elevated mortality serve to further reinforce the public health importance of eating disorders. Second, the temporal course of mortality observed here argues strongly for increased emphasis on early identification of eating disorders and the potential importance of early treatment for these disorders. In this vein, there is considerable interest in psychotherapies delivered in adolescence, as opposed to adulthood, for anorexia nervosa and bulimia nervosa (particularly family-based therapies [8, 9]). There is evidence that such therapies could be more effective than corresponding therapies delivered to adults; the possibility of diminishing overall mortality by intervening early lends further emphasis to the importance of such efforts. Finally, there is widespread knowledge of the risk of suicide in a variety of psychiatric illnesses, but this risk may not be as well appreciated in eating disorders and thus deserves greater attention. The results would suggest that while suicide mortality risk in individuals with existing disorders is very high, it may be concentrated early in the illness. Thus, intensive monitoring of suicidality early in the illness course may be critical.

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