

groups. I was also wondering about the validity of making a personality disorder diagnosis in such young individuals. Overall, if the diagnosis of anorexia could become bulimia, EDNOS or no eating disorder, the authors failed to consider the reverse being true (with the relative exception of bulimia to anorexia) at the important initial stage of this study.

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Authors' reply: Dr Sekar has concerns that the individuals in our study had other eating disorders before the onset of anorexia in adolescence. The aim of the original study, that took place in 1985, was to investigate the prevalence of adolescent-onset anorexia (and to examine background factors in this sample), not the prevalence of bulimia nervosa or eating disorder not otherwise specified. The mothers of the individuals, who were diagnosed with anorexia at the time of the original study, were interviewed thoroughly regarding premorbid eating disturbances.¹ Furthermore, the individuals themselves were interviewed regarding the same topic. No individual in the anorexia group (or the comparison group) had another eating disorder before the onset of anorexia. The school nurses at the schools in Göteborg continued to follow all pupils born in 1970 regarding weight and height until leaving school, usually after age 18 years. In the process, individuals with a later adolescent-onset of anorexia were also found. We believe that we have missed no cases of anorexia born in 1970 with anorexia onset before age 18 years. Since the original study focused on adolescent-onset anorexia we have not continued the screening of individuals born in 1970 after leaving school. Mean age of anorexia onset in our sample was 14.3 years. Bulimia typically presents during or after late adolescence and it is rare for onset to occur before the age of 14 years.^{2,3}

The study has a prospective and not a cross-sectional design, i.e. we have examined all individuals at four occasions, but we have interviewed them both regarding current eating disorders (and other psychiatric disorders) as well as eating disorders during the follow-up period.^{4,5} Data regarding eating disorders during the last follow-up period, between Study III and Study IV, are available from the first author.

Dr Sekar is also worried about the two subgroups being too diverse; the birth cohort with individuals born in 1970 was pooled together with a group of individuals with adolescent-onset anorexia born in adjacent years (in most cases 1971–1973). In the original study, the two groups were compared using several hundred background parameters and found to be similar in virtually all key respects.¹

The use of personality disorder diagnoses with teenagers is arguable, but we considered (and still consider) it justifiable in cases persistently (over a period of several years) showing the essential characteristics of a personality disorder described in the DSM–III–R (the diagnostic manual used at the time of the original study). This is explicitly suggested by DSM–III–R

guidelines. In the original study, apart from the age criterion, all DSM–III–R criteria had to be fulfilled for a diagnosis of personality disorder to be made. All individuals receiving a diagnosis of personality disorder showed significant impairment in social functioning and/or subjective distress.¹

To conclude, since the aim of the original study was to investigate prevalence of adolescent-onset anorexia, we did not screen for other eating disorders. Nevertheless, from the time of entering our study, all participants (anorexia group and comparison group) were examined in great detail regarding eating disorders (past, present, and longitudinally at several follow-up occasions). We believe that we can safely say that there were no individuals who had crossed-over from another eating disorder to anorexia before the onset of anorexia in adolescence.

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Fallacies in standardised mortality ratios in anorexia nervosa

The article by Papadopoulos *et al*¹ adds to the evidence of high mortality rates in anorexia nervosa. An impressively large cohort was obtained through the Swedish Cause-of-Death Register which includes all Swedish persons who died since 1952. The crude mortality rate for 6009 females with at least one hospital admission for anorexia nervosa was 4.41% over a mean follow-up of 13.4 years (averaging 0.33% per annum). This rate compares favourably with other studies (0.5–2.2% per annum),² yet the authors, after much manipulation of their data, conclude that the mortality rate in Swedish women was 'astonishingly' high.

We contest this finding based on misleading calculations of standardised mortality ratios (SMRs). Standardised mortality ratios are a means of comparing mortality in a specified patient population with a standard population. The SMR value will exceed 1 in proportion to the risk of death from the disease under study.

The authors have two different usages of SMR. The first is the customary one when the calculation is applied to a cohort of persons who have been given a specific diagnosis at the outset. In Table 3 this SMR is given as 6.2 for the 6009 patients with anorexia nervosa, among whom there occurred 265 deaths whereas the expected deaths were 42.6. So far, so good.

Their second approach was to count the number of deaths according to each specific cause of death, yielding a different kind