

# Tuberculosis and anorexia nervosa

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Co-morbidity (with anorexia nervosa<sup>1</sup> and tuberculosis<sup>2</sup>) is uncommon,<sup>3</sup> but does occur and has been reported in South Africa.<sup>4</sup> There are aspects of both conditions which make this co-occurrence within the South African setting interesting. Anorexia nervosa is a rare, self-initiated psychiatric illness occurring almost exclusively in white, predominantly middle-class individuals.<sup>5,6</sup> Tuberculosis is a relatively common, acquired physical (infectious) illness occurring predominantly in our black population,<sup>7</sup> more commonly in those who live in deprived socio-economic conditions.<sup>8,9</sup> Thus described they would appear to be conditions affecting specific sections of the community, although sharing a gender bias in that both conditions have a female preponderance during adolescence,<sup>9,10</sup> with diverse aetiology but with similar sequelae and potential outcome, i.e. significant weight loss with consequent impact on multiple organ systems<sup>2,11</sup> and a significant mortality rate.<sup>2,12,13</sup> Given that both conditions may manifest themselves with weight loss and lassitude, the occurrence of tuberculosis may go unrecognised within the context of anorexia nervosa. This may be due to overlapping symptoms or because demographic stereotyping tends to make medical personnel anticipate one condition rather than the other. Each condition requires treatment in its own right and failure to recognise one would most certainly contribute to poor outcome in the other, more specifically, where tuberculosis goes unrecognised in an anorexia nervosa sufferer. This was recently our experience in the Eating Disorders Unit at Tara, where three patients with pulmonary tuberculosis were only diagnosed after admission for treatment of anorexia nervosa.<sup>4</sup> It appears that despite the presence of a persistent dry cough in each case, no investigation was undertaken.

Did demographic stereotyping of either condition play a role in these cases, in such a way that the diagnostic process ended with anorexia nervosa? All of the patients were white and middle-class. Failure to recognise and treat tuberculosis in such individuals has potentially serious implications, not only for the patients concerned but also for the community at large, specifically fellow patients in medical wards to which anorexia nervosa sufferers might be admitted and serve as sources of infection for already compromised individuals. Physicians who work with anorexia nervosa sufferers are often struck by the fact that despite their physical frailty, they seldom present with infectious illnesses. Research into this phenomenon has confirmed this, specifically with regard to viral infections.<sup>14</sup>

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The explanation for this would appear to be that despite being significantly malnourished, these individuals have intact immune systems. The findings of research in this regard are varied, with recent work on immune status in adolescent anorexia nervosa sufferers finding no abnormalities relative to age-matched non-anorexic controls.<sup>15</sup> (None of the patients described who were admitted to the unit<sup>4</sup> were adolescents.) However, this is clearly not the case for all sufferers. Compromised cell-mediated immunity appears to be a factor in *Mycobacterium tuberculosis*<sup>16</sup> infection and such compromise appears to exist in anorexia nervosa sufferers who have lost more than 60% of their original mass.<sup>17</sup> The current weight would therefore appear to be less of an issue in immune status than degree of weight loss. This would potentially explain why immune status is not generally compromised in anorexia nervosa sufferers given that restrictive eating will often commence at a weight only slightly above the normal range for height and age.<sup>18</sup> All of the patients described who were admitted to the unit<sup>4</sup> were pre-morbidly obese, as determined by a body mass index (BMI) > 30 (BMI = weight (kg)/height (m) x height (m)).<sup>19</sup>

While specific study of putative risk factors for those anorexia nervosa sufferers most at risk of acquiring tuberculosis is desirable, the paucity of patients with co-morbidity is a limiting factor. Based on the recent experience of the unit,<sup>4</sup> sufferers over the age of 19 with a duration of anorexia nervosa longer than 5 years, whose original weight placed them within an obese range and in whom the degree of weight loss was approximately 60% of original mass, should be considered at risk. In addition, a persistent cough, even if non-productive, should be thoroughly investigated. The co-occurrence of tuberculosis and anorexia nervosa raises questions of immunocompetence. Given that anorexia nervosa sufferers appear resistant to viral infections and the current quest for effective prophylaxis against HIV, it may be worthwhile to consider more specific investigation of immune status in anorexia nervosa sufferers. Finally, the association of the two conditions is intriguing for a reason other than their co-occurrence, namely the glamorisation through the ages of the physical appearance — of women — resulting from either illness. The glamorisation of tuberculosis sufferers occurred in the 19th century, where the frail appearance of female sufferers was deemed genteel, delicate and sensitive. Anorexia nervosa is a predominantly 20th century phenomenon, seemingly media-inspired,<sup>20</sup> where thinness is a prevalent fixation and the admired qualities pertain to control and achievement.

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