physician. A recommended approach[5] is to educate patients about the disorder and effective psychiatric treatment. It is probably best to avoid cosmetic procedures. Simply trying to talk patients out of their concern is usually futile.

Although body dysmorphic disorder has been described for over a century and reported around the world, it remains underrecognised and underdiagnosed.[2] Men and boys are often reluctant to reveal their symptoms because of embarrassment and shame, and they typically do not recognise that their beliefs about their appearance are inaccurate and due to a psychiatric disorder. Physicians can diagnose body dysmorphic disorder in men with a few straightforward questions.[5 12] These determine whether the man is concerned about and preoccupied with minimal or non-existent flaws in his appearance and whether this concern causes significant distress (depression, anxiety) or interferes with social, occupational, or other aspects of functioning. The challenge is to enhance both physicians' and the public's awareness of body dysmorphic disorder so that effective treatments can be offered and unnecessary suffering and morbidity avoided.

Katharine A Phillips *director, Body Dysmorphic Program*

Butler Hospital and the Department of Psychiatry and Human Behavior, Brown University School of Medicine, Providence, Rhode Island 02906, USA (Katharine_Phillips@Brown.edu)

David J Castle *professorial fellow*

Mental Health Research Institute and University of Melbourne, Parkville, Victoria 3052, Australia

1 Pope HG, Phillips KA, Olivardia R. *The Adonis complex: the secret crisis of male body obsession*. New York: Free Press, 2000.
2 Phillips KA. *The broken mirror: understanding and treating body dysmorphic disorder*. New York: Oxford University Press, 1996.
3 Phillips KA, Diaz S. Gender differences in body dysmorphic disorder. *J Nerv Ment Dis* 1997;185:570-7.
4 Perugi G, Akiskal HS, Giannotti D, Frare F, DiVaio S, Cassano GB. Gender-related differences in body dysmorphic disorder (dysmorphophobia). *J Nerv Ment Dis* 1997;185:578-82.
5 Phillips KA, Dufresne RG Jr. Body dysmorphic disorder: a guide for dermatologists and cosmetic surgeons. *Am J Clin Dermatol* 2000;1:235-43.
6 Cotterill JA, Cunliffe WJ. Suicide in dermatological patients. *Br J Dermatol* 1997;137:246-50.
7 Phillips KA, Castle DJ. Body dysmorphic disorder. In: Castle DJ, Phillips KA, eds. *Disorders of body image*. London: Wrightson (in press).
8 Cotterill JA. Body dysmorphic disorder. *Dermatol Clin* 1996;14:457-63.
9 Phillips KA. Pharmacologic treatment of body dysmorphic disorder: a review of empirical data and a proposed treatment algorithm. *Psychiatr Clin North Am* 2000;7:59-82.
10 Veale D. Cognitive behavior therapy for body dysmorphic disorder. In: Castle DJ, Phillips KA, eds. *Disorders of body image*. London: Wrightson (in press).
11 Phillips KA, Grant JD, Siniscalchi J, Albertini RS. Surgical and nonpsychiatric medical treatment of patients with body dysmorphic disorder. *Psychosomatics* (in press).
12 Dufresne RG, Phillips KA, Vittorio CC, Wilkel CS. A screening questionnaire for body dysmorphic disorder in a cosmetic dermatologic surgery practice. *Dermatol Surg* 2001;27:457-62.

Tackling coronary heart disease

A gender sensitive approach is needed

Coronary heart disease is the commonest cause of death in the United Kingdom, with marked gender differences in incidence, presentation, referral, recovery, and rehabilitation.[1–6] Current policy on coronary heart disease is written in gender neutral language at a time when treatment has been moving towards a more behavioural model, where cardiac rehabilitation is a therapeutic option and changing cardiac health behaviour a major objective. Given the importance of this there is a need for health strategy that is gender sensitive.

The government views the national service framework for coronary heart disease as its "blueprint" for tackling heart disease.[7] It lays out 12 standards and sets out services that should be available throughout England. Although the framework acknowledges gender differences, there is no clear recognition in the guidelines of how these are to be addressed.

In part this is due to the evidence on which the guidelines have been based. Relatively small numbers of women, older people (both men and women), and ethnic minorities have been included in biomedical research into coronary heart disease, which has largely ignored women and treated white low risk men presenting with their first acute episode as a convenient sample. This is possibly due to the difficulties associated with controlling for comorbidity in older men and women, and the ethical and legal problems associated with fertile women who may be pregnant.[8] Therefore it has been customary to apply the conclusions of research to populations not studied, since it has been thought reasonable to assume there is no biologically plausible reason to expect findings to vary between the sexes. There is evidence, however, that women have not been well catered for by services underpinned by existing research. Studies that have included women appear to have had deficiencies in recognising and treating coronary heart disease.[5]

These difficulties for women are compounded by the existing consensus among both the public and health professionals that coronary heart disease is a disease of men.[9 10] In a recent study in which women with coronary heart disease were interviewed, one participant talked of men she knew being potential coronary candidates but she did not view herself as at risk as she was a woman and could not think of any famous women who had had a heart attack.[11]

The current research focus therefore has meant that women's experience has not been captured and used in service delivery—but neither, it may be argued, has men's. Despite most research being undertaken on men we are not much closer to an understanding of how men experience coronary heart disease. This is due to the failure of much research to acknowledge the gender sensitive nature of coronary heart disease and thus to treat gender as a variable to be controlled. Gender effectively becomes invisible, resulting in research that does not consider the issue of masculinity and men's acknowledged difficulty in managing their health.[12 13] Despite coronary heart disease being

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stereotyped as a male disease, men display a high degree of ignorance and avoidance of both coronary heart disease and the risk factors associated with it. For instance, though women may avoid considering their risk of developing coronary heart disease by assuming it is a male disease, men too delay in seeking medical help when experiencing chest pain.[5 14] Thus coronary heart disease is the greatest cause of premature death in men, yet it is relatively unresearched from the perspective of men's health behaviour.

Though the aims as set out in the national service framework are laudable, the fact that the framework does not include male and female specific standards makes it harder to create the environment for research and health strategy development that addresses men and women's separate needs. This is already evident by the relative dearth of social research into gender and coronary heart disease. Both women's health groups and the Men's Health Forum (www.men'shealthforum.org.uk) have noted that only a few practitioners have set up gender sensitive initiatives.

Gender must be seen as an important factor in health care planning and delivery. Coronary heart disease is a prime example of where there are known gender differences. We need investment in research and inclusion of gender within educational programmes, without which health professionals will remain ignorant of the problems created by gender neutral health care.

Alan White *senior lecturer in nursing*

School of Health and Community Care, Leeds Metropolitan University, Leeds LS1 3HE (a.white@lmu.ac.uk)

Lesley Lockyer *research fellow*

School of Healthcare Studies, University of Leeds, Leeds LS2 9UT (l.j.lockyer@leeds.ac.uk)

1 Petersen S, Rayner M, Press V *Coronary heart disease statistics 2000*. Oxford: British Heart Foundation, 2000.
2 Department of Health. *Health survey for England: Cardiovascular disease*. London: HMSO, 1999.
3 Milner KA, Funk M, Richards S, Wilmes RM, Vaccarino V, Krumholz HM. Gender differences in symptom presentation associated with coronary heart disease. *Am J Cardiol* 1999;84:396-9.
4 Ruston A, Clayton J, Calnan M. Patients' actions during their cardiac event: qualitative study exploring differences and modifiable factors. *BMJ* 1998;316:1060-5.
5 Radley A, Grove A, Wright S, Thurston H. Problems of women compared to those of men following myocardial infarction. *Coronary Health Care* 1998;2:202-9.
6 Thompson DR, Bowman GS, Evidence for the effectiveness of cardiac rehabilitation. *Clinical Effectiveness in Nursing* 1997;1:64-75.
7 Department of Health. *Coronary heart disease national service framework*. London: HMSO, 2000.
8 Angell M. Caring for women's health: what is the problem? *N Engl J Med* 1993;329:271-2.
9 Healy B. The Yentl syndrome. *N Engl J Med* 1991:325:274-6.
10 Davison C, Smith GD, Frankel S. Lay epidemiology and the prevention paradox: the implications of coronary candidacy for health education. *Sociol Health Illness* 1991;13:1-19.
11 Lockyer L. *The experience of women in the diagnosis and treatment of coronary heart disease*. PhD thesis, University of London, 2000:240.
12 Baker P. The state of men's health. *Men's Health Journal* 2001;1:6-7.
13 White AK. Men's response to illness. *Men's Health Journal* 2001;1:18-9.
14 White A, Johnson M. Men making sense of their chest pain: niggles, doubts, and denials. *J Clin Nursing* 2000;9:534-41.

Prophylactic treatment of anthrax with antibiotics

Indiscriminate use of antibiotics will lead to resistance in organisms

Bacillus anthracis has long been considered a potential biological weapon. The Scottish island of Gruinard was contaminated with spores for 45 years and the Aum Shinrikyo terrorists made unsuccessful attempts to release aerosols of anthrax and *Clostridium botulinum* spores in Tokyo.[1] In addition, anthrax spores were inadvertently released from a microbiological facility in Sverdlovsk in the former Soviet Union, resulting in at least 79 people getting anthrax and 68 deaths.[1] In response to the recent anthrax attacks in the United States, the US and other governments have bought large amounts of ciprofloxacin, and in the US many potentially exposed individuals have started prophylactic treatment. Unofficial use of ciprofloxacin will be common in the light of the worldwide panic. Ciprofloxacin has been chosen to treat anthrax for its ease of administration, good safety profile, and predictable activity. The alternatives are amoxicillin or doxycycline, but these too have side effects and can induce resistance. The important thing is to ensure that prophylactic treatment is given only to those who really need it, and to discourage its mass use by an understandably alarmed public. Indiscriminate use of antibiotics can induce resistance in *B anthracis* and other organisms. To induce antimicrobial resistance on a mass scale would be an even greater triumph for the terrorists.

Anthrax is a zoonosis, accidentally transmitted from herbivores to humans with no onward person to person transmission. The clinical presentation and outcome depend on the route by which anthrax is acquired.[1] Cutaneous anthrax, which is the commonest form (95% of patients), follows inoculation of spores into damaged skin and has the best outcome, with less than 1% mortality. Eating badly cooked meat contaminated with anthrax spores leads to oropharyngeal or gastrointestinal anthrax. This is the least common form but has a high mortality. Inhalation of spores leads to pulmonary anthrax, which is usually fatal.

B anthracis, including the strains isolated from the recent cases in the US, is sensitive in vitro to a range of antimicrobials, including penicillin, amoxicillin, doxycycline, tetracycline, clarithromycin, clindamycin, and ciprofloxacin. Benzylpenicillin is the treatment of choice, but treating anthrax after inhalation of spores is particularly difficult since the disease progresses rapidly to death. This has led to the introduction of chemoprophylaxis for individuals at risk.[1 2]

In animal models, penicillin, ciprofloxacin, or doxycycline given 24 hours after exposure to a lethal aerosol provided significant protection against death, but combining antimicrobials with vaccination provided optimal protection.[3] Currently oral ciprofloxacin is recommended after known exposure to spores.[1 2] Disease can present 50 days or more after exposure,[1] so prophylaxis should continue for 60 days unless exposure has been excluded.

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