

and 70% of such attacks were executed by Kurdish women in Turkey (Pope, 2005). There is also a high proportion of women suicide bombers in the Tamil Tigers (30%). al Qa'ida, which associates itself with Islamic fundamentalism, never used female suicide attackers from its formation in 1993 until the tragic attack in Jordan in 2005.

In general, women are at a lower risk of suicide than men and a protective effect of child-bearing in terms of suicide risk has been postulated (Catalan, 2000). This does not appear to apply to female suicide bombers or to some countries and cultures in which gender representation in suicide is reversed. A higher female:male suicide ratio is not unique to China. The significantly higher rate of female suicide observed outside China is not an 'ecological fallacy' but a sad reality.

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**Authors' reply** Salib & Tadros highlight the important issue of high female suicide rates among Indian migrants and the use of female suicide bombers. Like the high suicide rates among young females in rural China (Yip & Liu, 2006), these deviations from the general pattern should not be discounted as mere exceptions but should be considered as representative of the distressing situations faced by some women in Asia.

We also believe that socio-economic deprivation and poor social support – the 'sad reality' – faced by young women in rural China are underlying causes of the high suicide rates. Like the young married Indian women in Britain, there is some indication that young married women in rural China might be at high risk (Pearson *et al*, 2002). This reminds us that the lives of married women differ greatly across regions, countries, cultures and economies, and there is a need to avoid oversimplification when describing suicide in different countries; one size does not fit all.

Over 60% of the world's suicides occur in Asian countries where low male:female ratios for suicide are common (Yip *et al*, 2000). Although the official male:female ratio for suicide in India was still greater than 1 (1.2:1 in 2002), the ratio was 0.8 among those aged 14 or below (World Health Organization, 2006). However, unlike China (Yip & Liu, 2006), the small size of this population subgroup meant that the national male:female ratio remained greater than 1. (This is the essence of our ecological fallacy argument.) In addition to specific social factors, the similarity in the methods of suicide used by males and females, together with the poor access to medical facilities, might explain the low male:female ratio in India and China. Restricting access to pesticides will prevent many suicides in Asia. In the long term improving economic and educational opportunities, especially for rural women in deprived areas, raising awareness of depression and better treatment will be pivotal for preventing suicides.

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## Self-poisoning with pesticides in India

Bertolote *et al* (2006) report the global response to deaths from pesticide poisoning. Suicide rates in southern India have been reported to be high (Joseph *et al*, 2003; Aaron *et al*, 2004; Abraham *et al*, 2005; Prasad *et al*, 2006), with 1741 suicides documented in a population of about 100 000 from 1986 to 2005. Hanging (804 of 1741, 46.2%) and poisoning (746 of 1741, 42.8%) were the methods most commonly employed. Although people under 40 years tended to use poisons, older people tended to choose hanging ( $\chi^2=36.71$ , d.f.=4,  $P<0.001$ ). Significantly more males (465 of 984, 47.3%) than females (281 of 757, 37.1%) ( $\chi^2=17.6$ , d.f.=1,  $P<0.001$ ) chose death by poisoning. There was no significant change in the overall rate of suicide or the method employed during the period. Detailed analysis of the data from 2001 to 2005 revealed that only 68% of the fatal episodes of self-poisoning were a result of ingestion of pesticides.

Self-poisoning with pesticides is a significant public health problem in low- and middle-income countries. The majority of such poisoning occurs in rural agrarian households. Some suggestions to reduce such deaths are currently difficult to implement. Enforcing the hazardous chemicals and wastes conventions to restrict and control the sale and use of pesticides in such regions is no small task and requires major political, administrative, financial and social commitment. Given the many competing demands on limited governmental resources in low- and middle-income countries, such protocols are difficult to implement. In addition, the improved recognition and treatment of mental illness may not have a significant impact on the overall suicide rate as many people in the low- and middle-income countries who die by suicide do not have severe mental illness. Rather, the majority of such attempts are impulsive and follow stressful life events. Although reducing accessibility to pesticides will decrease such impulsive attempts and consequent deaths, social, economic and cultural factors must also be addressed to make a real difference. Thus, although the World Health Organization's intersectoral global initiative is a step in the right direction, it is imperative that practical issues related to its implementation are discussed. It is necessary to consider