

seen in the light of the fact that lottery tickets now include instant scratch cards, which have many features of hard gaming, with large jackpots and "heart stoppers" giving the illusion that the person has almost won a big prize.<sup>3</sup>

The availability and promotion of gambling facilities are important in the causation of pathological gambling.<sup>4</sup> Before the introduction of the National Lottery, public policy under successive governments, including the present one, allowed gambling only to the extent needed to meet unstimulated demand. However, the lottery has been promoted vigorously, and this has involved children. In particular, the weekly draw is broadcast well before the 9 pm watershed, before which programmes are deemed to be suitable for children. Consequently, the National Lottery draw is the second most popular television programme among 10 to 15 year old children, with 38% watching.<sup>5</sup>

Gambling is adult entertainment and not a reliable way of making money for the punter. The only sure way of accumulating riches from gambling is to join the gambling industry. Punters who do not recognise this tend to "chase losses" with disastrous consequences. The most destructive effect of the National Lottery has therefore been the heavily promoted idea that it—and by implication gambling in general—is only about winning money. In fact, the vast majority of those who buy lottery tickets are losers. Nevertheless, intermittent small payouts and huge publicity about the few large ones reinforce the activity. Since this sequence can lead to gambling dependence,<sup>4</sup> it is potentially dangerous for children.

EMANUEL MORAN  
Consultant psychiatrist

Grovelands Priory Hospital,  
London N14 6RA

- 1 McKee M, Sassi F. Gambling with the nation's health? *BMJ* 1995;311:521-2. (26 August.)
- 2 Shopkeepers break ban on child gamblers. *Independent* 1995 May 25:3.
- 3 Moran E. Health risks of National Lottery heartstoppers. *Independent* 1995 Apr 18:14.
- 4 Moran E. Gambling as a form of dependence. *Br J Addict* 1970;64:419-27.
- 5 Independent Television Commission. Child's-eye view. *Spectrum* 1995;17:24.

## Doctors should concentrate on more serious issues

EDITOR,—I read Martin McKee and Franco Sassi's editorial on the National Lottery with surprise and some concern.<sup>1</sup> While I have no argument with the editorial's scientific content, I have some worries about the priority given to the National Lottery as a health issue. Lotteries are nothing new in society: the football pools are similar, as is betting on horse and greyhound racing. It may well be that some people are spending their money "unwisely" in the hope of improving their lifestyles and that some of the people who find themselves winners have problems in coping with this new state. Most of those who participate, however, are responsible people who are knowingly taking a risk. In a society that values empowerment are we now saying that people should take only risks that are good for them? And, if so, what is the risk?

A society in which people no longer have the opportunity to take risks is not a healthy society. Public health practitioners should understand this and should focus their attention on more serious issues. For a start, how about the misery and isolation of elderly people and the hopelessness of young people who are unemployed long term?

FRADA ESKIN  
Consultant in public health medicine

Sheffield Health,  
Sheffield S10

- 1 McKee M, Sassi F. Gambling with the nation's health? *BMJ* 1995;311:521-2. (26 August.)

## On sex education at school

### Articles neglect the needs of young gay men

EDITOR,—Douglas Kirby<sup>1</sup> discusses the papers on sex education by K Wellings and colleagues<sup>2</sup> and Alex R Mellanby and colleagues<sup>3</sup> and concludes that the findings of both studies suggest that the education programmes did not hasten the onset of intercourse. Since Kirby includes "HIV/AIDS education" in the title of his editorial I find it surprising that he does not mention homosexual adolescents. Although these make up a small proportion of the whole school population, there are still large numbers of such young people, who, I suspect, are receiving inadequate information on sexual matters. This is particularly important in relation to teaching about the use of condoms when practising safer sex.

I accept that the remit of the two studies did not include this group. It would be helpful, however, if a separate study could examine the attitudes and needs of this neglected, and largely invisible, group of young people.

MICHAEL BLACK  
Retired consultant child and  
adolescent psychiatrist

London NW3 1TX

- 1 Kirby D. Sex and HIV/AIDS education in schools. *BMJ* 1995;311:403. (12 August.)
- 2 Wellings K, Wadsworth J, Johnson AM, Field J, Whitaker L, Field B. Provision of sex education and early sexual experience: the relation examined. *BMJ* 1995;311:417-20. (12 August.)
- 3 Mellanby AR, Phelps FA, Crichton NJ, Tripp JH. School sex education: an experimental programme with educational and medical benefit. *BMJ* 1995;311:414-7. (12 August.)

### Dutch surprise at British question

EDITOR,—The studies by Alex R Mellanby and colleagues<sup>1</sup> and K Wellings and colleagues<sup>2</sup> on the effect of sex education on adolescent sexual activity and the conclusions drawn raise the question why lessons learnt in other countries—particularly those in northern Europe, which have similar religious and cultural backgrounds—do not reach Britain and vice versa. This is probably true for many other fields in research and may be due to a language barrier, although much of the research done in the Netherlands, for instance, is written in English and easily accessible.

Being Dutch, I am baffled by the hesitance in England to incorporate sex education in schoolchildren's curriculums. A recent article by Visser *et al*, which reviewed the effectiveness of sex education for adolescents in Western countries, confirmed that it increases knowledge about sexuality but does not as a consequence increase sexual activity.<sup>3</sup> Ketting and Visser discussed the reasons for the low abortion rate (as one of the indicators of risky sexual behaviour) in the Netherlands.<sup>4</sup> Although the basis of the Dutch model of family planning was laid in the 1960s, before the era of AIDS, surely the issues are similar, with the proviso that even greater emphasis needs to be placed on barrier contraception. Recent publications have reiterated the lack of sexual and reproductive health care for adolescents.<sup>5</sup> Research is needed into the specific needs of adolescents and to assess whether school based programmes are the most suitable for this purpose. Surely, though, there is no question that information and education are prerequisites for a better start to one's reproductive and sexual life.

ANNETTE DE LA COURT  
Shell fellow, women's health group

Liverpool School of Tropical Medicine,  
Liverpool L3 5AQ

- 1 Mellanby AR, Phelps FA, Crichton NJ, Tripp JH. School sex education: an experimental programme with educational and medical benefit. *BMJ* 1995;311:414-7. (12 August.)
- 2 Wellings K, Wadsworth J, Johnson AM, Field J, Whitaker L, Field B. Provision of sex education and early sexual experience: the relation examined. *BMJ* 1995;311:417-20. (12 August.)

- 3 Visser AP, Van Bilsen P. Effectiveness of sex education provided to adolescents. *Patient Education and Counselling* 1994;23:147-60.
- 4 Ketting E, Visser A. Contraception in the Netherlands: the low abortion rate explained. *Patient Education and Counselling* 1994;23:161-71.
- 5 Senderowitz J. *Adolescent health. Reassessing the passage to adulthood*. Washington: World Bank, 1995. (Discussion paper 272.)

### Early education about contraception is needed

EDITOR,—Alex R Mellanby and colleagues' study highlights the importance of targeted sexual education programmes involving doctors, teachers, and parents in the prevention of unwanted pregnancy in teenagers.<sup>1</sup> The rate of teenage pregnancy in Britain is among the highest in Europe and seven times higher than that in the Netherlands despite the similarity in the rate of teenage sexual activity among industrialised countries. Only 40% of American teenagers are reported to use contraception during their first year of sexual activity.<sup>2</sup>

At the same time, data suggest that it is possible to improve these statistics by introducing new contraceptive methods as well as by continuing to encourage the appropriate use of existing methods, with intensive counselling of users.<sup>3</sup> It is essential, therefore, that appropriate education about contraception is delivered at an early stage by unbiased professionals and is free from public moralising. This should be accompanied by the availability of several choices of contraception to meet a range of lifestyle needs, and in this context long acting reversible methods have much to offer.<sup>4</sup>

It would be sad if the only way of policing effective education about, and provision of, contraception was by obliging professionals to directly fund the unacceptable number of terminations of pregnancy.

LAWRENCE MASCARENHAS  
Clinical research fellow

Academic Department of Obstetrics and Gynaecology,  
University of Birmingham,  
Birmingham Maternity Hospital,  
Birmingham B15 2TG

- 1 Mellanby AR, Phelps FA, Crichton NJ, Tripp M. School sex education: an experimental programme with educational and medical benefit. *BMJ* 1995;311:414-6. (12 August.)
- 2 Jones EF, Forrest JD, Goldman N. Teenage pregnancy in developed countries: determinants and policy implication. *Fam Plann Perspect* 1985;17:53-63.
- 3 Westhoff CF. Contraceptive paths towards the reduction of unintended pregnancy and abortion. *Fam Plann Perspect* 1988;20:4-13.
- 4 Mascarenhas L. Long acting methods of contraception. *BMJ* 1994;308:991-2.

### Non-didactic methods are preferable

EDITOR,—Having been a volunteer resource person in the Singapore Planned Parenthood Association, I am encouraged by Alex R Mellanby and colleagues' description of the positive effects of sex education at school.<sup>1</sup> As a result of reticence on the part of policymakers, the Singapore Planned Parenthood Association is a major provider of school sex education in Singapore. Like Mellanby and colleagues, we have found that group discussions, role play, quizzes, and other workshop activities get the message across better than does didactic teaching. The association also has a considerable number of doctors among its members, who give talks or lead panel discussions, often during school assemblies.

I also support the idea of getting young people to teach their peers, an idea that the association has put into practice recently. Some five years ago we identified a dynamic pool of young people aged between 18 and 22. They had participated in our education programmes and volunteered to become facilitators in youth activities. The highlight of their work was to present scenes in local theatres, depicting topical issues in teenage sexuality, which were well received by other young people.

The association is now piloting sex education modules in schools. It will certainly draw strength from Mellanby and colleagues' work, particularly with regard to the use of specific targeted methods and systematic evaluation.

Sex education has a formidable task to achieve. It is not just about sex: it is also about comprehensive education in family life. This includes interpersonal and decision making skills and positive attitudes about self and family, with the hope that the young person will develop a sense of responsibility for his or her actions.

Critics of sex education claim that evaluations of outcome must show change in the social and sexual behaviour of students outside the classroom. This is a tall order: it is like evaluating civics classes according to their ability to make students into better citizens. I am delighted that the work of Mellanby and colleagues proves the critics wrong. Promoters of sex education programmes around the world must persevere in their efforts. More importantly, they must constantly evaluate their programmes and publicise their findings to dispel myths and misconceptions about sex education.

J EYABALA BALAKRISHNA

Senior registrar in forensic psychiatry

Springfield University Hospital,  
London SW17 7DJ

1 Mellanby AR, Phelps FA, Crichton NJ, Tripp JH. School sex education: an experimental programme with educational and medical benefit. *BMJ* 1995;311:414-7. (12 August.)

## Migraine runs in families . . .

### . . . but is it inherited?

EDITOR,—Michael Bjørn Russell and Jes Olesen report an increased familial risk of migraine.<sup>1</sup> Before migraine is accepted as an inherited disorder, as it is in the heading to the paragraph about the paper on the "This week in BMJ" page, however, all studies and possible biases should be considered.

The paper concentrates on the high prevalence of migraine in first degree relatives of probands with migraine. Surprisingly, however, the figures show that the first degree relatives of probands who had never had migraine had a prevalence of migraine with aura of 5.3% and of migraine without aura of 17.2% (table II). This latter figure is higher than that expected in the general population (table IV). If migraine does aggregate in families one would expect the first degree relatives of probands who had never had migraine to have a significantly lower prevalence than the general population.

Telling all probands in writing that "the object was to study the frequency and heredity of migraine"<sup>2</sup> could have biased the familial study, which seems overall to have shown a higher prevalence of migraine than did the population study, which used the same interviewer, methods, and population.<sup>2</sup> In Russell and Olesen's study the response rates were high, but some bias may have arisen as the proportion of probands who did not allow their family to be interviewed was 3% for migraine without aura, 6% for migraine with aura, but 11% for those who never had migraine; of the probands in the study, those with migraine had an average of 2.8 relatives whereas those who never had migraine had an average of 3.1 relatives (calculated from table II).

I undertook my study on familial prevalence<sup>3</sup> long before the diagnostic criteria of the International Headache Society were available.<sup>4</sup> Russell and Olesen are wrong to imply that my study suffered "from lack of direct interview of relatives." A trained interviewer administered a questionnaire to over 99% of first degree relatives living in a defined area (south Wales).<sup>3</sup> Several large twin studies, also completed before the

new diagnostic criteria were available, gave surprisingly little evidence of heredity.<sup>5</sup> Perhaps the jury assessing the importance of heredity and environment in the prevalence of migraine should still be considering its final verdict.

WE WATERS

Emeritus professor of community medicine

Institute of Public Health Medicine,  
Southampton General Hospital,  
Southampton SO16 6YD

- 1 Russell MB, Olesen J. Increased familial risk and evidence of genetic factor in migraine. *BMJ* 1995;311:541-4. (26 August.)
- 2 Russell MB, Rasmussen BK, Thorvaldsen P, Olesen J. Prevalences and sex-ratios of the subtypes of migraine. A population based epidemiological survey of four thousand 40 year old males and females. *Int J Epidemiol* 1995;24:612-8.
- 3 Waters WE. Migraine: intelligence, social class, and familial prevalence. *BMJ* 1971;iii:77-81.
- 4 Headache Classification Committee of the International Headache Society. Classification and diagnostic criteria for headache disorders, cranial neuralgias and facial pain. *Cephalalgia* 1988; 8(suppl 7):1-96.
- 5 Waters WE. Headache: Series in Clinical Epidemiology. London: Croom Helm, 1986:92-101.

### Authors' reply

EDITOR,—Since migraine without aura aggregates in families of probands with migraine without aura, it is expected that migraine without aura is less common in families of probands who have never had migraine. We calculated the population relative risk, adjusting for sex and age, since migraine without aura depends on these factors. If the population relative risk significantly exceeds one an increased family aggregation is implied, whereas a result significantly below one implies a decreased family aggregation.

WE Waters states that the risk of migraine without aura among the first degree relatives of probands who had never had migraine was expected to be considerably lower than the figure we found. This is not correct. We calculated that the expected population relative risk was 0.87 (95% confidence interval 0.62 to 1.12) and found that it was 1.11 (0.83 to 1.39). These results are not significantly different. Thus random variation may explain our result. The calculation of the expected population relative risk was based on the increased risk of migraine without aura in first degree relatives of probands with migraine without aura, the overall prevalence of migraine without aura, and a similar number of first degree relatives of probands who had never had migraine to that in our study.

Waters suggests that the disclosure of the objective of the family study could have biased the study, since the overall prevalence of migraine was higher in the family study than in the general population.<sup>1</sup> Firstly, these prevalences are not comparable, since migraine aggregates in some families and the prevalence of migraine in first degree relatives depends on the relative proportion of probands with migraine and probands who have never had migraine. Secondly, responders and non-responders were not significantly different regarding migraine. A minority of probands did not allow their families to be interviewed, but this is not likely to have caused bias in the family study since migraine as assessed by probands' report was not significantly different in these families and those included in the family study. Probands who had never had migraine had a slightly higher average number of first degree relatives than probands with migraine, which is probably due to chance.

Although Waters pioneered epidemiological studies of migraine, the methods section in his study that we cited is not completely clear. It states that "relatives were visited and a short administered questionnaire on headache was completed."<sup>2</sup> This can easily be taken as indicating that the relatives, rather than the trained interviewer, filled in the questionnaire. Our results indicate the importance of genetic factors in migraine without

aura and migraine with aura. This is supported by previous twin studies.<sup>3</sup> Studies of unselected twins interviewed blind by a physician will, however, be important, and the final confirmation will be identification of the gene(s).

MICHAEL BJØRN RUSSELL

Research fellow

JES OLESEN  
Professor

Department of Neurology,  
Glostrup Hospital,  
University of Copenhagen,  
DK-2600 Glostrup,  
Denmark

- 1 Russell MB, Rasmussen BK, Thorvaldsen P, Olesen J. Prevalence and sex ratio of the subtypes of migraine. *Int J Epidemiol* 1995;24:612-8.
- 2 Waters WE. Migraine: intelligence, social class and family prevalence. *BMJ* 1971;iii:77-81.
- 3 Russell MB, Olesen J. Genetic aspects in migraine without aura and migraine with aura. *Cephalalgia* 1993;13:245-8.

## Screening for intracranial aneurysms

### Short natural course makes screening impracticable

EDITOR,—Jacoline E C Bromberg and colleagues report an increased risk of subarachnoid haemorrhage in first degree relatives of patients presenting with this condition and suggest that these relatives might be screened for unruptured aneurysms.<sup>1</sup> Though the accuracy of telephone interviews to diagnose aneurysmal subarachnoid haemorrhage may be questioned, the authors' findings are not surprising. Subarachnoid haemorrhage generally occurs sporadically in the population, but most neurosurgeons have encountered families with a history of the condition, and there is a large literature on such cases.<sup>2</sup> The question of whether to screen all first degree relatives of patients presenting with subarachnoid haemorrhage is more debatable.

Screening requires a knowledge of the natural course of unruptured aneurysms. This is lacking in at least two respects. Firstly, what are the risks of an asymptomatic unruptured aneurysm bleeding? The figure of 1% a year has been quoted but is based on a retrospective analysis of data.<sup>2</sup> The likelihood of aneurysms bleeding is currently being investigated by the international study of unruptured intracranial aneurysms. Secondly, over what period does an aneurysm develop? This is complex: the size of an aneurysm measured angiographically varies depending on the intraluminal thrombus it contains, as well as with the absolute volume of the aneurysm sac. Certainly, we have seen an aneurysm increase in apparent size in a worrying and dramatic fashion over two weeks. Screening is pointless if the period over which an aneurysm develops and ruptures is short, and without such knowledge we cannot say what the interval should be between repeat screening tests.

The practicality of screening also depends on the sensitivity, specificity, and risks of the screening investigation. The gold standard remains cerebral angiography, which requires catheterisation of the carotid and vertebral arteries. This may carry a risk of causing a persistent neurological deficit of 0.5%.<sup>3</sup> In the series of Bromberg and colleagues, if 1259 first degree relatives were investigated to identify 10 people who would develop subarachnoid haemorrhage, persistent deficits might be caused in 6. To this the morbidity and mortality associated with treating aneurysms (which might never haemorrhage) would have to be added. The alternative screening investigation, magnetic resonance angiography, is non-invasive but may be insensitive in detecting aneurysms less than 5 mm in diameter.<sup>4</sup>