

Public perception of overweight

Underestimation has important implications for public health programmes



RESEARCH, p 270

Sara N Bleich assistant professor of health policy and management, Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD 21205, USA
sbleich@jhsph.edu

Competing interests: None declared.

Provenance and peer review: Commissioned; not externally peer reviewed.

Cite this as: *BMJ* 2008;337:a347
doi: 10.1136/bmj.a347

The mismatch between self perceived and self reported weight has been documented for decades; women typically view themselves as heavier than they really are, whereas men often underestimate their weight.¹ We do not know whether people's perception of their weight has changed with the rapidly growing obesity epidemic, in which more than 300 million adults worldwide are overweight.²

In the linked study, Johnson and colleagues look at adults' changing perceptions of weight in the United Kingdom over eight years and find that heavier people were less likely to think that they were overweight in 2007 than in 1999.³ The authors attribute the declining concordance between self reported and self perceived weight to the greater stigma of being overweight, which may discourage people from identifying themselves as overweight or obese, and to changing societal norms, which may have increased the threshold at which people think of themselves as overweight. This shift is reinforced by media presentations of people who are morbidly obese, who are not representative of the overweight population. Johnson and colleagues also found that concordance between self reported and self perceived weight among normal and underweight individuals had improved—a trend most notable among women. This finding suggests that fewer people of healthy weight now have negative body images.

Data on temporal trends in public perception of weight are important, given the positive association between self perceived weight status and behaviours to control weight. Because individuals who view themselves as overweight or obese are, for example, more likely to engage in dieting,⁴ this implies that a better understanding of changing perceptions of weight and its determinants is key, particularly in those subpopulations where the prevalence of obesity is highest.

Since behaviour change is largely motivated by perceived risk,⁵ the public's failure to accurately assess their weight status in accordance with clinically accepted categories has important implications for public health programmes targeting overweight people. If a considerable proportion of overweight people misclassify their weight, they may ignore important messages about modifying their lifestyles.

Healthcare professionals have a role in correcting misconceptions about weight. Doctors, who underdiagnose and undermanage obesity,⁶ should be better trained and given incentives to manage overweight patients, who are more likely to try to lose weight when advised to do so.⁷ Tackling weight related discrimina-

tion among health professionals is also important.⁸ The evidence indicates, however, that although solutions at an individual level are important, they have mostly been unsuccessful at reducing the prevalence of obesity because they ignore the nested relationship between the individual, the family, and the broader environment. People's decisions, actions, and health outcomes depend not only on their characteristics but also on the social forces that shape the way they live.⁹

Highlighting the importance of treating obesity as a multilevel problem, Friel and colleagues wrote, "Missing in most obesity prevention strategies is the recognition that obesity—and its unequal distribution—is the consequence of a complex system that is shaped by how society organises its affairs."¹⁰ This belief that interventions to prevent obesity would be more effective if they included a combined focus on the individual and broader society is widely held by experts. Yet, efforts in this direction are moving slowly because of the challenges of obtaining funding and the complexity of conducting multilevel research on a problem for which the debate about the exact set of proximal and distal causes continues.

How, then, can we better align perceptions of weight with reality at the population level? As a first step, we should recognise that the complexity of self perceived weight does not lend itself to a magic bullet solution. Rather, correcting a person's misconceptions about their weight takes time and requires a comprehensive approach. In the interim, public health programmes might consider some concrete strategies. One important theme is education. Efforts should be made to sensitise the entire population to the importance of healthy lifestyle modifications—a goal that could be achieved through media messages that target many aspects of the environment (such as, home, workplace, and community).

Most people believe that obesity is related more to personal behaviour than to the broader society,¹¹ so educating the public about the obesogenic (weight promoting) environment is also critical. Another important theme is increasing people's awareness of healthy lifestyle in a manner that considers weight related stigma. Creating public health campaigns focused on the entire population rather than only on overweight or obese individuals is one possibility. Working with the popular press and television industry to diminish negative stereotyping of obese people is another.¹² Partnerships with the food, beverage, or television industries—promoting healthy lifestyles or positive body images—may help facilitate these activities.

Correcting misconceptions about weight is not simple, and represents one piece of the complicated puzzle that is the obesity epidemic—a problem that requires concerted efforts at the local, national, and global levels, which needs to capitalise on evidence to shape public health policy.

- 1 Paeratakul S, White MA, Williamson DA, Ryan DH, Bray GA. Sex, race/ethnicity, socioeconomic status, and BMI in relation to self-perception of overweight. *Obes Res* 2002;10:345-50.
- 2 World Health Organization. *Obesity and overweight*. Geneva: WHO, 2003.
- 3 Johnson F, Cooke L, Croker H, Wardle J. Changing perceptions of weight in the UK: comparison of two population surveys. *BMJ* 2008;337:a494.
- 4 Strauss RS. Self-reported weight status and dieting in a cross-sectional sample of young adolescents: National Health and Nutrition Examination Survey III. *Arch Pediatr Adolesc Med* 1999;153:741-7.

- 5 Janz NK, Champion VL, Strecher VJ. *The health belief model*. San Francisco: Jossey-Bass, 2002.
- 6 Stafford RS, Farhat JH, Misra B, Schoenfeld DA. National patterns of physician activities related to obesity management. *Arch Fam Med* 2000;9:631-8.
- 7 Sciamanna CN, Tate DF, Lang W, Wing RR. Who reports receiving advice to lose weight? Results from a multistate survey. *Arch Intern Med* 2000;160:2334-9.
- 8 Puhl R, Brownell KD. Bias, discrimination, and obesity. *Obes Res* 2001;9:788-805.
- 9 Stokols D. Establishing and maintaining healthy environments. Toward a social ecology of health promotion. *Am Psychol* 1992;47:6-22.
- 10 Friel S, Chopra M, Satcher D. Unequal weight: equity oriented policy responses to the global obesity epidemic. *BMJ* 2007;335:1241-3.
- 11 Bleich SN, Blendon RJ. Public opinion and obesity. In: Blendon RJ, Altman DE, Brodie M, Benson JM, eds. *American public opinion and health care policy*. Washington, DC: CQ Press (in press).
- 12 Greenberg BS, Eastin M, Hofschire L, Lachlan K, Brownell KD. Portrayals of overweight and obese individuals on commercial television. *Am J Public Health* 2003;93:1342-8.

Communication between parents and children about sex Could be improved by programmes in the workplace

RESEARCH, p 273

Douglas Kirby senior research scientist, ETR Associates, Scotts Valley, CA 95066-4200, USA
dougk@etr.org

Competing interests: None declared.

Provenance and peer review: Commissioned; not externally peer reviewed.

Cite this as: *BMJ* 2008;336:a206
doi: 10.1136/bmj.a206

In the linked paper, Schuster and colleagues report a randomised controlled trial of a parenting programme that was implemented in the workplace—“*Talking Parents, Healthy Teens*”—to help parents discuss sexual health with their adolescent children.¹

Organisations concerned with adolescent sexuality and reproductive health have striven to increase parent-child communication about sex for several reasons. Firstly, many people believe that increasing such communication is important in itself. Secondly, in some communities, it is more widely accepted and less controversial for parents to express their sexual values and beliefs to their children than for teachers or other educators to talk about sex in the classroom. Thirdly, greater parent-child communication of values about sex and use of contraception is associated under some conditions with a delay in sex or greater use of contraception.² Professionals concerned about unplanned teenage pregnancies or sexually transmitted diseases think that increasing such communication can help reduce sexual risk taking in teenagers. Indeed, effective education programmes on sex and sexually transmitted diseases or HIV often increase parent-child communication about sex.³

Unfortunately, many parents and their teenage children have few conversations about sex, often because they all feel uncomfortable doing so. To help alleviate this problem, various educational programmes have been designed to increase parent-child communication. These have included after school programmes for parents only, programmes for parents and teenagers together, homework assignments in school sex education classes that require communication with parents, and video programmes with written materials to be completed at home.

Studies indicate that few parents are willing or able to travel to and participate in special parent programmes in the evening or at the weekend, and that getting parents to enrol in such programmes is difficult. The trial

by Schuster and colleagues is therefore particularly important because it set up a parenting programme in the workplace, where few such programmes have been implemented and evaluated.³ The trial implemented an intensive programme with eight sessions, recruited reasonable numbers of participants, and at least half of the participants completed seven of the eight sessions. This is a considerable achievement.

These programmes do not aim just to enrol parents and get them to complete the programmes, but to increase parent-child communication about sexual behaviour—and not just in the short term, but for longer periods. Previous studies of programmes implemented in other settings found that they can increase parent-child communication for a short while, but that this increase diminishes with time.⁴ For example, one programme with the strongest evidence for increasing parent-child communication brings parents and children together to talk about sex in some of the sessions.⁴ Then, on their way home, they sometimes continue to talk about sex. Thus, not surprisingly, this programme demonstrates greater parent-child communication about sex, at least in the short term.

However, the programme studied by Schuster and colleagues used a different approach. It did not bring parents and their children together; instead, it provided the parents with information, taught them communication skills, and then hoped that they would use the information and the skills to communicate more effectively with their children. This is obviously a greater challenge.

With a rigorous design incorporating random assignment, follow-up for nine months, and high follow-up rates, this new approach significantly increased parent-child communication and the effect continued to increase, rather than to decrease, with time (up to nine months). This is very encouraging. In addition, both the parents and the teenagers reported consistent significant effects on communication. This is particularly

encouraging, because in the past parents and teenagers have often given conflicting assessments of their communication about sex.

Of course, for professionals concerned with preventing sexually transmitted disease and unplanned pregnancies in teenagers, the goal is not just to increase parent-child communication about sex, but to reduce risky sexual behaviour in teenagers, either by delaying the onset of sex or increasing the use of contraception. Because no simple association exists between parent-child communication and adolescent sexual and contraceptive behaviour, studies should examine the effects on sexual behaviour. Thus, an important limitation of this study is that it did not measure the effect on sexual behaviours, in part because the children of the participating parents were mostly too young to be sexually active during the follow-up.

A few other studies have measured the effect of parent programmes on sexual behaviour in teenagers. In three of these studies, the programmes either delayed the age at which the teenagers started having sex or increased the use of condoms⁵⁻⁷; one found no significant effects.⁸

Studies are needed to measure the effect of parent programmes like this one, which emphasises communication skills and openness; to measure the effect of parent programmes that also emphasise parental monitoring of their teenagers; to measure the effect of homework assignments that encourage students to talk with their parents about sex; and to measure

the effect of the programme on sexual behaviour in teenagers. Until those studies are completed, school sex education programmes should include homework assignments that increase parent-child communication about sex and workplaces should be encouraged to offer programmes to improve the ability of parents to talk with their children about sex.

- 1 Schuster MA, Corona R, Elliott MN, Kanouse DE, Eastman KL, Zhou AJ, et al. Evaluation of *Talking Parents, Healthy Teens*, a new worksite based parenting programme to promote parent-adolescent communication about sexual health: randomised controlled trial. *BMJ* 2008; doi: 10.1136/bmj.39609.657581.25.
- 2 Miller BC. *Families matter: a research synthesis of family influences on adolescent pregnancy*. Washington, DC: National Campaign to Prevent Teen Pregnancy, 1998.
- 3 Kirby DB. *Emerging answers 2007: research findings on programs to reduce teen pregnancy and sexually transmitted diseases*. Washington, DC: National Campaign to Prevent Teen and Unwanted Pregnancy, 2007.
- 4 Kirby D, Miller B. Interventions designed to promote parent-teen communication about sexuality. In: Feldman S, Rosenthal D, eds. *New directions for child and adolescent development*. Parent-Adolescent Communication on Sexual Issues edition. San Francisco: Jossey-Bass, 2002:93-110.
- 5 Dilorio C, McCarty F, Resnicow K, Lehr S, Denzmore P. REAL men: a group-randomized trial of an HIV prevention intervention for adolescent boys. *Am J Public Health* 2007;97:1084-9.
- 6 Dilorio C, Resnicow K, McCarty F, De AK, Dudley WN, Wang DT, et al. Keepin' it REAL! Results of a mother-adolescent HIV prevention program. *Nurs Res* 2006;55:43-51.
- 7 Prado G, Pantin H, Briones E, Schwartz S, Feaster D, Huang S, et al. A randomized controlled trial of a parent-centered intervention in preventing substance use and HIV risk behaviors in Hispanic adolescents. *J Consult Clin Psychol* 2007;75:914-26.
- 8 Miller-Heyl J, Podunovich R, MacPhee D. The dare to be you "care to wait" program: a multilevel, family-based, abstinence education research project. Presented at: Abstinence education evaluation conference: strengthening programs through scientific evaluation. 3-5 November 2005, Baltimore, MD.

Academic achievement in twins

Yet another twin-singleton difference is diminishing



ALTREDDO/GETTY IMAGES

RESEARCH, p 277

Kaare Christensen professor, The Danish Twin Registry, Epidemiology Unit, Institute of Public Health, University of Southern Denmark, Odense, Denmark 5000
kchristensen@health.sdu.dk

Matt McGue professor,
Competing interests: None declared.

Provenance and peer review: Commissioned; not externally peer reviewed.

Cite this as: *BMJ* 2008;337:a651
doi: 10.1136/bmj.a651

Twins are not rare—in many countries about 4% of newborns are twins,¹ and the low birth weight and increased rate of prematurity in twins is a cause for concern for both parents and healthcare providers. Research shows that European twins born more than 50 years ago had lower IQ and academic performance than singletons. In more recent cohorts, however, the cognitive disadvantage in twins compared with singletons seems to have vanished. The linked Taiwanese study by Tsou and colleagues adds to this literature by suggesting that the cognitive cost of being a twin is also small in the more developed countries of Asia.²

Twin studies are commonly used in medical and public health research to disentangle the contributions of genetic and environmental factors to health. Comparison of the health trajectories of twins and singletons has also provided a critical test of the fetal origins hypothesis, whereby growth restriction in the third trimester (experienced to a strong degree by twins) is hypothesised to “programme” increased risk of cardiovascular diseases, type 2 diabetes mellitus, and early death. However, large scale Swedish and Danish studies of mortality have been unable to detect any differences in all cause mortality or cardiovascular mortality in adulthood between twins and

the general population.³⁻⁵ The only cause of death that shows a modest but significant difference between twins and singletons is suicide—Danish data show that twins commit suicide less often than singletons.⁶

Tsou and colleagues used data from the Taiwanese register to investigate the association between being a twin (with low birth weight) and academic achievement. Taiwan is an interesting and important setting for this research. Previous cohort studies from Europe have shown that twins born in the 1930s to 1950s have substantially lower mean IQs than singletons,⁷⁻⁹ but twins born in the 1980s had no such deficits.^{10 11} These studies indicate that improvements in living conditions, obstetrics, and paediatric care have reduced differences in cognition between twins and singletons. A study of Asian births from the 1980s provides an interesting comparison. Because of socioeconomic and healthcare differences between Taiwan and Europe, we would expect differences between twins and singletons in Taiwan to lie between those found in the old and new European studies. This is precisely what Tsou and colleagues found—Taiwanese twins had a 2% lower probability of attending college and scored an average of 6% of a standard deviation lower on a composite college entrance examination

than singletons. Although statistically significant and in line with expectations, differences of this size should not cause concern in parents of twins. Furthermore, these small differences could have many explanations—for example, the lower rate of college attendance might just reflect the financial burden of having to send two children to college at the same time.

Although the detrimental effects of very low birth weight within the normal range are less certain. Twin studies are well suited to help resolve some of this ambiguity. As an analysis of differences in birth weight between ethnic groups showed, however, including birth weight as a confounder when analysing two groups with different mean birth weights poses several analytical challenges.¹² The key point is that different reference groups should be used for twins and singletons. For example, European studies suggest that a birth weight of 2500 g is associated with intellectual achievement at the mean value for twins, whose average birth weight is 2500 g, but at the lower 10th centile for singletons, whose average birth weight is 3500 g.¹¹

Finally, Tsou and colleagues did a within pair analysis, which showed that the twin who was heavier at birth did not score significantly higher on academic performance than the lighter twin within same sex twin pairs but did score significantly higher within opposite sex twin pairs. Because same sex twins include both monozygotic and dizygotic twins, whereas opposite sex twins are all dizygotic, this finding suggests that genetic factors account for part of the association between birth weight and academic performance in adolescence. These analyses are, however, based on a small sample of opposite sex twins and same sex twins, and it will be interesting to see if the finding can be replicated in larger samples when the zygosity of the same sex pairs can be determined.

Studies like that by Tsou and colleagues show that twin studies can still be used to investigate important clinical and scientific questions—even in the genomic era. Their study adds to the accumulating clinical evidence that health and psychological burdens associated with being born a twin are minimal, at least after the neonatal period. The failure to find significant deficits among twins is surprising, given that twins experience pronounced intrauterine growth retardation in the third trimester and are often born preterm. According to the “fetal origins” hypothesis, this prenatal and perinatal profile should be associated with increased health risks. That it is not, shows that twins still hold a mystery, the future explication of which may hold the key to understanding the fetal origins of disease.

- 1 Herskind AM, Basso O, Olsen J, Skytthe A, Christensen K. Is the natural twinning rate still declining? *Epidemiology* 2005;16:591-2.
- 2 Tsou MT, Tsou MW, Wu MP, Liu JT. Academic achievement of twins and singletons in early adulthood: Taiwanese cohort study. *BMJ* 2008;337:a438.
- 3 Vågerö D, Leon D. Ischaemic heart disease and low birth weight: a test of the fetal-origins hypothesis from the Swedish twin registry. *Lancet* 1994;343:260-3.
- 4 Christensen K, Vaupel JW, Holm NV, Yashin AI. Twin mortality after age 6: fetal origins hypothesis versus twin method. *BMJ* 1995;310:432-6.
- 5 Christensen K, Wienke A, Skytthe A, Holm NV, Vaupel JW, Yashin AI. Cardiovascular mortality in twins and the fetal origins hypothesis. *Twin Res* 2001;4:344-9.
- 6 Tomassini C, Juel K, Holm NV, Skytthe A, Christensen K. Risk of suicide in twins: 51 year follow up study. *BMJ* 2003;327:373-4.
- 7 Record RC, McKeown T, Edwards JH. An investigation of the difference in measured intelligence between twins and single births. *Ann Hum Genet* 1970;34:11-20.
- 8 Ronalds GA, De Stavola BL, Leon DA. The cognitive cost of being a twin: evidence from comparisons within families in the Aberdeen children of the 1950s cohort study. *BMJ* 2005;331:1306.
- 9 Deary IJ, Pattie A, Wilson V, Whalley LJ. The cognitive cost of being a twin: two whole-population surveys. *Twin Res Hum Genet* 2005;8:376-83.
- 10 Posthuma D, De Geus EJ, Bleichrodt N, Boomsma DI. Twin-singleton differences in intelligence? *Twin Res* 2000;3:83-7.
- 11 Christensen K, Petersen I, Skytthe A, Herskind AM, McGue M, Bingley P. Comparison of academic performance of twins and singletons in adolescence: a follow-up study. *BMJ* 2006;333:1095-7.
- 12 Wilcox AJ. Invited commentary: the perils of birth weight—a lesson from directed acyclic graphs. *Am J Epidemiol* 2006;164:1121-3.

Confronting therapeutic ignorance

Tackling uncertainties about the effects of treatments will help to protect patients

PRACTICE, p 290

Iain Chalmers coordinator, James Lind Initiative, Summertown Pavilion, Oxford OX2 7LG
 ichalmers@jameslindlibrary.org

Competing interests: None declared.

Provenance and peer review: Commissioned; not externally peer reviewed.

Cite this as: *BMJ* 2008;337:a841
 doi: 10.1136/bmj.39555.392627.80

This week's *BMJ* includes the first of a series of articles on areas of practice where clear and robust evidence is lacking, and where uncertainty exists about management.¹

Our failure to confront uncertainty about the effects of treatment has resulted in the suffering and death of patients, sometimes on a massive scale. Hundreds of thousands of people died prematurely because of failure to tackle uncertainty about the effects on mortality of prophylactic use of antiarrhythmic drugs in myocardial infarction.^{2 3} When the CRASH trial assessed uncertainty about the effects of corticosteroids in acute traumatic brain injury, it revealed that this treatment had been killing people for more than three decades.^{4 5} When widespread uncertainties about the effects of caffeine used to reduce episodes of apnoea in premature babies were assessed more than 30 years after the treatment had been introduced, it turned out that this simple

treatment reduces the incidence of cerebral palsy and developmental delay.⁶ Had this uncertainty been dealt with when the treatment was introduced, many of the people currently living with cerebral palsy would have been spared their disabilities (see comment on caffeine citrate on the neonatal formulary website (www.neonatalformulary.com)). These are just three examples that illustrate the consequences for patients of our collective failure to recognise and confront uncertainties about the effects of treatments.⁷

Over the past two decades, research relevant to treatment decisions has become more readily available to clinicians and patients. Systematic reviews have become much more readily available, and they have been indispensable in preparing evidence summaries for clinicians and patients, such as those published in *BMJ Clinical Evidence* and *BMJ Best Treatments*. These

and similar resources have informed the preparation of clinical guidelines and clinical care pathways, and many of them are freely available to everyone through the NHS National Library for Health (www.library.nhs.uk) and NHS Choices (www.nhs.uk).

Despite this progress, however, the challenge of meeting the information needs of clinicians and patients is far from complete, and patients continue to suffer and die unnecessarily as a result. Thousands of existing questions have not yet been investigated in systematic reviews, and thousands of systematic reviews have shown that the existing evidence does not answer important questions about the effects of many treatments. This challenge will not go away—indeed, resolving one uncertainty almost always results in the recognition of additional uncertainties.

One contribution to making therapeutic uncertainties more visible is the database of uncertainties about the effects of treatments—DUETs (www.duets.nhs.uk), which is being developed by the specialist libraries of the NHS National Library for Health. Another is the new series of articles—called Clinical Uncertainties—which starts in this week's *BMJ*. Readers who wish to highlight uncertainties are invited to submit manuscripts that clarify why uncertainty exists, cite evidence of variation in practice, and refer to relevant ongoing studies. Authors should conclude by advising clinicians and patients how they should deal with the uncertainty.

It is important to be more open with the public about treatment uncertainties and to help patients who recognise the problem and want to help tackle uncertainties in research.⁸ Although DUETs and the *BMJ*'s uncertainty articles will help to raise awareness of therapeutic ignorance, more fundamental changes are needed to reduce the damage being done to patients by failure to confront uncertainties.

The National Institute for Health and Clinical Excellence can help by making greater use of its option to recommend that treatments be used only within the context of research if evidence about their effects is inadequate.⁹ A recent judgment by the Healthcare Commission is also relevant—it criticised an NHS trust for putting patients at risk by introducing new equipment without evidence that it was beneficial.¹⁰

The General Medical Council of the United King-

dom has made it clear in its booklet *Good Medical Practice* that doctors must help to resolve uncertainties about the effects of treatments. Sadly, clinicians who acknowledge the logic of the council's expectations have to take account of the current disincentives facing those who want to confront therapeutic uncertainty. Hyper-regulation of clinical research has made it easier for clinicians simply to acquiesce in therapeutic ignorance.⁷ Indeed, clinicians who do tackle uncertainties can find themselves the target of highly publicised attacks by people who believe that their health problems can be attributed to their involvement in clinical research.^{11 12}

The consequences for patients of acquiescing in therapeutic ignorance can be disastrous, yet, perversely, current attitudes to, and restrictions on, therapeutic research are powerful disincentives to people who wish to confront uncertainties about the effects of treatments. It is up to clinicians, patients, and the public in general to decide whether they wish to continue tolerating this bizarre state of affairs.

- 1 Pham CB, Shaughnessy AF. Should we treat subclinical hypothyroidism? *BMJ* 2008;337:a834.
- 2 Furberg CD. Effect of anti-arrhythmic drugs on mortality after myocardial infarction. *Am J Cardiol* 1983;52:32C-6C.
- 3 Moore T. *Deadly medicine*. New York: Simon and Schuster, 1995.
- 4 CRASH Trial Collaborators. Effect of intravenous corticosteroids on death within 14 days in 10008 adults with clinically significant head injury (MRC CRASH trial): a randomised placebo-controlled trial. *Lancet* 2004;364:1321-8.
- 5 Chalmers I. The lethal consequences of failing to make use of all relevant evidence about the effects of medical treatments: the need for systematic reviews. In: Rothwell P, ed. *Treating individuals*. London: Lancet, 2007:37-58.
- 6 Schmidt B, Roberts RS, Davis P, Doyle LW, Barrington KJ, Ohlsson A, et al; for the Caffeine for Apnea of Prematurity Trial Group. Long-term effects of caffeine therapy for apnea of prematurity. *N Engl J Med* 2007;357:1893-902.
- 7 Chalmers I. Regulation of therapeutic research is compromising the interests of patients. *Int J Pharm Med* 2007;21:395-404.
- 8 Evans I, Thornton H, Chalmers I. *Testing treatments: better research for better healthcare*. London: British Library, 2006. www.jameslindlibrary.org.
- 9 Chalmers I. Addressing uncertainties about the effects of treatments offered to NHS patients: whose responsibility? *J R Soc Med* 2007;100:440-1.
- 10 Healthcare Commission. *Staffordshire ambulance service NHS trust took risks with patient and staff safety, says healthcare watchdog*. 2008. www.healthcarecommission.org.uk/newsandevents/pressreleases.cfm?cit_id=6423&FAArea1=customWidgets.content_view_1&usecache=false.
- 11 Editorial. Southall's CNEP trial more than stands up to scrutiny. *Lancet* 2006;367:1030; commentaries 1032-8.
- 12 Hinsliff G. "Climate of fear" for paediatricians. *Observer* 2008 April 13. www.guardian.co.uk/society/2008/apr/13/childprotection.health.

Population growth and climate change

Universal access to family planning should be the priority

The world's population now exceeds 6700 million, and humankind's consumption of fossil fuels, fresh water, crops, fish, and forests exceeds supply.¹ These facts are connected. The annual increase in population of about 79 million means that every week an extra 1.5 million people need food and somewhere to live. This amounts to a huge new city each week, somewhere, which destroys wildlife habitats

and augments world fossil fuel consumption. Every person born adds to greenhouse gas emissions, and escaping poverty is impossible without these emissions increasing. Resourcing contraception therefore helps to combat climate change, although it is not a substitute for high emitters reducing their per capita emissions. In 1798 Malthus predicted that as the population increased exponentially, shortfalls

John Guillebaud emeritus professor of family planning and reproductive health, University College, London WC1E 6BT
j.guillebaud@lineone.net

Pip Hayes general practitioner, St Leonard's Practice, Exeter EX1 1SB

Cite this as: *BMJ* 2008;337:a576
doi: 10.1136/bmj.39575.691343.80

Competing interests: JG has received fees and expenses from manufacturers of contraceptives for educational presentations, research projects, and short term consultancies, and is a patron of the Optimum Population Trust. PH is a Trustee of the Optimum Population Trust.

Provenance and peer review: Commissioned; not externally peer reviewed.

in food supply would be unavoidable.² A sevenfold increase in the population has led, 210 years later, to unprecedented food shortages, escalating prices, and riots. Until these events Borlaug's "green revolution"³ had seemingly proved Malthus wrong. Yet fertilisers, pesticides, tractors, and transport are dependent on fossil fuels, which apart from being in short supply, exacerbate climate change.^{4 5}

Last year's parliamentary hearings concluded that the United Nation's millennium development goals, including millennium development goal 1—to eradicate extreme poverty and hunger—"will be difficult or impossible to achieve without a renewed focus on, and investment in, family planning."⁶ The number of people now living on less than \$2 (£1; €1.3) a day is about 2 billion,⁶ which is equal to the world's total population when Oxfam was founded in 1942.

It is often assumed that "any quantitative concern for population must be intrinsically coercive."⁷ India in the 1970s polluted the whole concept by adopting coercive means for population "control." China stands similarly accused. But why consider infringing human rights when around half of pregnancies worldwide are unplanned?⁸ Moreover, numerous countries as varied as Costa Rica, Iran, Korea, Sri Lanka, and Thailand halved their total fertility rates primarily through meeting women's unmet fertility needs and choices.⁸

Conventional economic wisdom says that couples in resource poor settings actively plan to have many children to compensate for high child mortality, to provide labour, and to care for parents as they age.⁹ Often with cultural and religious endorsement, those factors enhance the post hoc acceptance of large families. But economists overlook the fact that, everywhere, potentially fertile intercourse is more frequent than the minimum needed for intentional conceptions. Thus, having a large rather than a small family is less of a planned decision than an automatic outcome of human sexuality. Something active needs to be done to separate sex from conception—namely, contraception. But access to contraception is often difficult. Barriers to access for women intrude through lack of empowerment and abuse of their rights by husbands, partners, or mothers in law, or from religious authorities or, regrettably, even contraceptive providers.¹⁰

The evidence is clear within a wide variety of settings that—despite no increase in per capita wealth or other presumed essentials—demand for contraception increases when it becomes available, accessible, and accompanied by correct information about its appropriateness and safety; when barriers are removed¹⁰; and when the principles of marketing are applied. This is consistent with normal consumer behaviour.^{8 11}

In Iran, where the total fertility rate ("average family size") declined from 5.5 to 2 (replacement level) in just 15 years, all couples must learn about family planning before marriage and contraception is endorsed by the pronouncements of religious leaders.¹¹ The

Population Media Centre uses serial radio dramas or "soaps".¹² Audiences learn from decisions that their favourite characters make—such as allowing wives to use contraception to achieve smaller and healthier families. In Rwanda, 57% of new attendees at family planning clinics named the radio drama "Rwanda's Brighter Future" as their reason for attending.¹²

As doctors, we must help to eradicate the many myths and non-evidence based medical rules¹⁰ that often deny women access to family planning. We should advocate for it to be supplied only wisely and compassionately, and for increased investment, which is currently just 10% of that recommended at the UN's Population Conference in Cairo.⁶

The Optimum Population Trust calculates that "each new UK birth will be responsible for 160 times more greenhouse gas emissions . . . than a new birth in Ethiopia."⁸ Should UK doctors break a deafening silence here? "Population" and "family planning" seem taboo words and were notably absent from two *BMJ* editorials on climate change.^{4 5} Although we endorse everything that those editorials recommended, isn't contraception the medical profession's prime contribution for all countries?

Unplanned pregnancy, especially in teenagers,⁸ is a problem for the planet, as well as the individual concerned. But what about planned pregnancies? Should we now explain to UK couples who plan a family that stopping at two children, or at least having one less child than first intended, is the simplest and biggest contribution anyone can make to leaving a habitable planet for our grandchildren?^{8 13} We must not put pressure on people, but by providing information on population and the environment, and appropriate contraception for everyone (and by their own example), doctors should help to bring family size into the arena of environmental ethics, analogous to avoiding patio heaters and high carbon cars.

- 1 Gland: Worldwide Fund for Nature with Global Footprint Network and Zoological Society of London. *Living planet report*. 2006. www.panda.org/news_facts/publications/living_planet_report/index.cfm.
- 2 Parsons J. *The Reverend Thomas Robert Malthus. Demi-devil, saint, or merely great benefactor?* Manchester: Optimum Population Trust, 1998.
- 3 Borlaug N. *Nobel lecture 1970. The green revolution, peace and humanity*. 1972. http://nobelprize.org/nobel_prizes/peace/laureates/1970/borlaug-lecture.html.
- 4 Stott R, Godlee F. What should we do about climate change? Health professionals need to act now, collectively and individually. *BMJ* 2006;333:983-4.
- 5 Gill M, Godlee F, Horton R, Stott R. Doctors and climate change. *BMJ* 2007;335:1104-5.
- 6 All Party Parliamentary Group on Population, Development and Reproductive Health. *Return of the population growth factor*. 2007. www.appg-popdevrh.org.uk/Publications/Population%20Hearings/APPG%20Report%20-%20Return%20of%20the%20Population%20Factor.pdf.
- 7 Potts M. The population policy pendulum. *BMJ* 1999;319:933-4.
- 8 Guillebaud J. *Youthquake: population, fertility and environment in the 21st century*. Optimum Population Trust, 2007. www.optimumpopulation.org/Youthquake.pdf.
- 9 Sachs J. *The end of poverty*. New York: Penguin Press, 2005.
- 10 Campbell M. Consumer behaviour and contraceptive decisions: resolving a decades-long puzzle. *J Fam Plann Reprod Health Care* 2006;32:241-4.
- 11 Campbell M, Sahin-Hodoglugil N, Potts M. Barriers to fertility regulation: a review of the literature. *Stud Fam Plann* 2006;37:87-98.
- 12 Population Media Centre. 2008. www.populationmedia.org.
- 13 Guillebaud J. The environment time capsule project. *BMJ* 1994;308:1377-8.