

Human and animal health: strengthening the link

Methodological concerns about animal facilitated therapy with dolphins

EDITOR—We have the following concerns with Antonioli and Reveley's study of animal facilitated depression with dolphins in the treatment of depression.¹

The study was small (30 patients), only 13 people from the animal care programme and 12 from the outdoor nature programme completing the study. The authors used a conservative measure to estimate the number of patients required for this study, and even then fell short by 17%.

Single women predominated in both arms.

It is difficult to fathom how clinical raters can be blinded to the treatment hypothesis.

The authors did not mention the ethnic group of the participants.

Only people who could go to Honduras were able to take part in this study. Most people with mild depression will not be able to take a three week holiday.

The findings are not generalisable as most people would not be able to afford to go to such a location and swimming and snorkeling are not necessarily favourite pastimes.

There may be a vacation bias. If the study group sponsored the three week trip to Honduras we suspect that a free three week trip to a seaside location in Latin America would in itself be a powerful antidepressant.

There may be a disappointment bias. If the control group were aware of the potential to be in a group where they could interact with dolphins for two weeks before they reached Honduras, they could be disappointed in missing out. People with depression perceive disappointment more intensely.

The study could have been done in a more natural and plausible setting with common pets such as dogs or cats for a fraction of the cost.

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Competing interests: None declared.

¹ Antonioli C, Reveley MA. Randomised controlled trial of animal facilitated therapy with dolphins in the treatment of depression. *BMJ* 2005;331:1231-4. (26 November.)

Authors' reply to methodological concerns

EDITOR—Depression is an important health problem worldwide. The lifetime prevalence of depressive disorders is 15%, and the cost in morbidity and economics is substantial. Despite limitations of current treatments, and the extent of the problem, there has heretofore been no serious attempt to validate an alternative treatment with anecdotal evidence of efficacy in some mental disorders and disabilities.

The aim of our study was to begin to establish an evidence base for animal assisted therapy in depression. We used the gold standard of the randomised controlled trial. It was necessarily single blind, as is the case in most, if not all, trials of a psychotherapy in which fully informed consent is obtained. To our knowledge, it is the only randomised controlled trial of animal assisted therapy with any animal using strictly defined diagnostic criteria and rigorous inclusion and exclusion criteria to be published in a refereed journal. We showed that such studies can be done, enabling further randomised trials with other animals to establish evidence based efficacy not only for depression but also for other psychiatric illnesses and disabilities.

We used an intent to treat, last observation carried forward, analysis, which means that all 30 subjects who were randomised to enter the study, including those who dropped out, were included in the analysis. This provides a conservative measure, making it more difficult to show an effect. The results were highly significant statistically, reflecting the large differences in improvement between the groups and the small variance, despite the modest sample size.

Women outnumber men two to one in the prevalence of depression, and being unmarried without a close, confiding relationship is a risk factor for depression. This may explain the preponderance of unmarried women in the sample. We believe men would be as responsive as women to the

therapy, but it may be that those without close human relationships would be more responsive. This is an issue for further research.

It is self evident that most people with depression will not be able to swim with dolphins. The purpose of the study was to establish a principle, not to develop a universal therapy with dolphins for everyone.

Participants paid for their own travel expenses and food. The study was supported by the voluntary contributions of those acknowledged and not by an external grant awarding body. It is true that going to a pleasant location, away from the stress of one's usual environment, would be expected to improve mood and reduce anxiety, even in depressed people. That is precisely why we had a control group with the same non-specific experiences as the experimental group.

We think that disappointment bias was not a significant factor as the control group swam with dolphins after the study ended. The control group also improved slightly during the study, reflecting the placebo effect of the pleasant location. The controls did not become more depressed, as might be expected if depressed people had perceived disappointment more intensely.

We fully discussed the limitations of the study in the paper. We do not propose that dolphin assisted therapy will be a common therapy for most people. More studies with other animals are needed. We showed that the biophilia principle can be used to devise effective therapies and that their validation by randomised controlled trials is feasible. In the era of evidence based medicine more controlled trials of alternative therapies are needed. We hope our study will inspire others to develop and validate new therapies for the millions of people world wide who suffer from depression.

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Politics and economics inhibited control of anthrax last century

EDITOR—Anthrax was among the first zoonoses where human and animal differences in disease natural history and their interactions came into prominence. My recently completed study provides relevant national and local insights.¹

During 1900-14, Kidderminster, Worcestershire, had a very high incidence of anthrax from contaminated imported wools. Human cases arose in mill workers and others. There were animal outbreaks on the council sewage farm from wool washing water, and elsewhere from shoddy used as a fertiliser.²

Three official bodies were concerned with different aspects: the national Factory Inspectorate with wool use in mills; the Board of Agriculture, through the county council, with animal disease; and the local government board, through the Kidderminster Council and its medical officer of health, with infectious disease. All were subject to political and economic compromise.

- The Factory Inspectorate could not control East India wool for a decade because the Home Office quietly re-punctuated regulations after pressure from industry. The non-unionised Kidderminster mills were exempted from requirements previously agreed with trade unions in Bradford.

- The Board of Agriculture considered that it was up to farmers to avoid the use of shoddy on pastoral land. Ironically one outbreak was on the farm of the town's largest manufacturer.

- The medical officer of health's proposal for local anthrax notification was contested by an employer dominated council, as was his advice to cease keeping dairy cattle on the sewage farm. Poignantly, his horse died of anthrax while grazing there. He was incensed with the council because they had not taken the required precautions. The local government board was inactive.

There was good scientific liaison. Locally the county analyst investigated, advised, and did bacteriology for all. Nationally cases were monitored, and there was veterinary and medical dialogue and research. The politics and economics of prevention inhibited action.

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Competing interests: TC's main paid work is as part-time chief medical adviser, Department for Transport. The work described was a separate project but was informed by his experience of administrative procedures in government.

1 Carter T. Anthrax in Kidderminster 1900-1914. Birmingham: University of Birmingham, 2005. [PhD thesis.]
2 Carter T. The dissemination of anthrax from imported wool: Kidderminster 1900-14. *Occup Environ Med* 2004;61:103-7.

Child and animal abuse are linked

EDITOR—Coombes rightly considers the duties of doctors and vets in situations where their patients are in danger of mistreatment.¹ There is increasing evidence to link animal and child abuse, and vice versa (www.americanhumane.org). DeViney et al showed that 88% of pets were abused where child abuse and neglect were present.² Among women seeking refuge from domestic violence in a safe house, 71% of those with pets reported that their partners had been violent to their pet.³

Increasing collaboration between the NSPCA and the RSPCA is helping government policy to formulate improved links between the two reporting schemes. In several local authorities vets will contact the appropriate children and families social services department to notify it of animal abuse because of the strength of the link. Wider uptake would do much to protect both sets of innocents.

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Competing interests: None declared.

1 Coombes R. Do vets and doctors face similar ethical challenges? *BMJ* 2005;331:1227. (26 November.)
2 DeViney E, Dickert J, Lockwood R. The care of pets within child abusing families. *International Journal for the Study of Animal Problems* 1998;4:321-9.
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Summary of webchat



Discussions at the webchat on the theme issue on animal and human health fell into two broad categories: zoonoses and animal based research.¹

A big question was how to manage zoonotic problems operationally. Other concerns include travel, tourism and its impact on holiday destinations, exotic animals (including insects) in crowded aeroplanes, and the intertwined health of wild and domestic animals.

Collaborations to deal with the challenge of zoonoses are perceived to happen but are too reliant on informal professional contacts and personal knowledge. Cambridge vet school successfully hosted a transdisciplinary public health meeting. The medical and vet communities may not have the capacity to form collaborative links, especially in resource poor areas, but research can bring the two professions to work together when aided.

Working together is developing in the United Kingdom. The Human Animal Infections and Risk Surveillance Group includes members from various government agencies in England, Wales, and Scotland and meets every month to discuss areas of concern and interest in animal and human health. The group has discussed several animal infections of potential public health importance and has developed an approach to risk assessment. It does not have a link with developing countries, for reasons that include funding, but welcomes suggestions of how such groups could help increase support for similar work in southern Africa, for example.

Whose responsibility is it to try to generate support for joint human and animals health initiatives on a global scale? A global approach is important, and scientific/medical journals have a role in promoting a global ethic in research. Risk assessments can tackle problems globally—for example, the European Centre for Disease Prevention and Control's risk assessment for H5N1 and

human health is used outside the European Union.

In discussions of animal healing, horse riding and puppies were mentioned as helping people in distress. The social inclusion of former patients through conservation work is another positive example. Organisations such as the British Trust for Ornithology do not exist primarily for "rehabilitation," but they can have a remarkable impact on the social engagement and community involvement of some lonely and marginalised people in many places.

Several participants called for a more open debate on animal research, with an emphasis on the scientific arguments for and against. Academic institutions should host these debates, respect towards animals being key. Ongoing difficulties include people's reluctance to make their views public for fear of being attacked. But animal based research should be subjected to the same standards of systematic review now expected in evidence based human medicine, with greater transparency.

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Competing interests: None declared.

1 Webchat. Human and animal health. (1 December 2005). <http://bmj.bmjournals.com/cgi/content/full/331/7528/DC1>.

Role of vaccinating poultry against avian flu

EDITOR—Parry cites the opposition of a World Health Organization spokesman in Manila to vaccinating poultry against avian flu.¹

After killing over 13 million birds some years ago Italy has now implemented a highly successful vaccination strategy differentiating infected from vaccinated animals. The avian flu vaccine is given to birds who do not already have the virus, and the antibodies are then tested in the blood of sample birds.²

Whether such a vaccination strategy is possible in the countries of south east Asia is a difficult question, but many governments throughout the world are weighing up the role of vaccinating poultry against avian flu. The alternative is the death of millions of chickens—160 million have already been killed—and the demise of the poultry industry.

The crucial issue is whether vaccinating poultry will protect humans from avian flu, and I do not believe there is yet an agreed answer to that question.

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Competing interests: None declared.

1 Parry J. Vaccinating poultry against avian flu is contributing to spread. *BMJ* 2005;331:1223. (26 November.)
2 CIWF Trust (Compassion in World Farming). Vaccination strategies for avian influenza. Available at: www.ciwf.org.uk/publications/media_briefs/flu_vaccination.pdf (accessed 1 Dec 2005).

New ABPI code provides more information for patients

EDITOR—Shaw et al highlight the benefits that will result if the pharmaceutical industry is enabled to communicate better with those who are its ultimate customers—patients.¹

The revised ABPI (Association of the British Pharmaceutical Industry) code addresses in more detail the provision of information to the public. As for the current code, information must be factual and presented in a balanced way and must not raise unfounded hopes of successful treatment or be misleading about the safety of the product. Statements must not be made for the purpose of encouraging members of the public to ask their health professional to prescribe a specific prescription only medicine (clause 20.2).

However, the new supplementary information to clause 20.2 sets out in much more detail than currently the type of information that can be provided by the industry. For example, reference information has been introduced as a comprehensive, up to date resource for the public for prescription only medicines with marketing authorisations.

Reference information includes the regulatory information (summaries of product characteristics, package leaflets, and public assessment reports, where available), as well as registration studies, other studies, medicine guides information about diseases and specific medicines. Reference information must represent fairly the current body of evidence relating to a medicine and its profile of risks and benefits. Companies are not obliged to provide reference information but are advised that it is good practice to provide at least the regulatory information as a minimum. A guide to the code for the public will be produced after consultation with stakeholders as part of the review process.

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Competing interests: None declared.

1 Shaw JM, Mynors G, Kelham C. Information for patients on medicines. *BMJ* 2005;331:1034-5. (5 November).

.. More details of the new code were reported in *News* (26 November, p 1225). The code is available at www.pmpa.org.uk and a bound version will be available soon.—ED

Committee on Radioactive Waste Management lacks medical input

EDITOR—We have professional interests in the public health impact of ionising radiation, the assessment and management of risk, and the development of policy. After more than a year as members of the Committee on Radioactive Waste Management (CoRWM) one of us (KB) was sacked and the other driven to resign because of the committee's wayward *modus operandi*.

CoRWM now lacks serious expertise in these subjects and developing policy to protect the public interest, including its health.¹

CoRWM has a membership stronger on public relations than science, is strongly averse to consulting expertise, has adopted a “do it yourself” mode of operation contrary to its overseer role, and commonly relies on help from close associates when needed. Its remit is to advise government on a strategy that can be implemented quickly and will inspire public confidence.

After taking more than a year to eliminate long rejected options such as rocketing high level waste into the sun, the committee now has less than a year to formulate its advice on options that meet the engineering requirement of isolating the waste from the biosphere for up to 100 000 years.

The latest independent review is sceptical that there will be a successful outcome² given the avoidable damage to the credibility of the committee from its failure to develop a science strategy before January 2005. As then members, we thought that this was not so much a failure as a deliberate antiscience strategy.

If the material stored at many places around the United Kingdom were inadvertently or deliberately dispersed, or some unsafe but seemingly publicly acceptable solution were implemented, the potential for major public health damage would be huge now and in the future. No strategy has been in place for managing radioactive waste in the UK in the past 25 years, and the medical profession should be concerned that this latest initiative is so controversial and lacking in professionalism.

In November 2003 the BMA wrote to the Department for Environment, Food and Rural Affairs (Defra) expressing its concern that the newly formed CoRWM had no medically qualified members. As we have not been replaced (even by co-option) CoRWM now lacks health and risk expertise as well as any hands-on expertise on the science and engineering of radioactive waste management.³

Is this a responsible way to make such a momentous decision?

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Competing interests: None declared.

1 Baverstock KF, Ball DJ. The UK Committee on Radioactive Waste Management. *J Radio Prot* 2005;25:313-20.

2 Collier D. *CoRWM phase 2 evaluation*. Oxford: Faulkland Associates, 2005. (Report R06). www.corwm.org.uk/PDF/1355%20-%20CoRWM%20Phase%20%20Evaluation%20Statement%20V3.pdf

3 House of Lords. *Radioactive waste management: 5th report, science and technology committee*. London: House of Lords, 2004.

Inequalities and Christmas Yet to Come

EDITOR—On 10 November National Statistics released new life expectancy figures by area and announced that “Inequalities in life expectancy persist across the UK.”

“Persist” was an odd word to use. In Kensington and Chelsea, where it was already highest, it rose by exactly one year for both men and women (from 79.8 to 80.8 years and 84.8 to 85.8 years, respectively). In contrast, in Glasgow where it was lowest a year ago, life expectancy remained static at 76.4 years for women, and rose just slightly for men from 69.1 to 69.3 years. The range in life expectancy between the extreme highest and lowest areas thus increased from 8.4 to 9.4 years for women, and from 10.7 years to 11.5 years for men.

For men and women combined, the life expectancy gap between the worst and best off districts of the UK now exceeds 10 years for the first time since reliable measurements began. Of course more sophisticated measures are needed than this simple range, and the population denominators are problematic, especially in Kensington and Chelsea,² but the overall gap exceeding 10 years, and the first achievement of an average life expectancy over 85 years in women in one area whereas men's average expectancy remains below 70 years in another—should not pass without comment.

Five years ago we wrote, in relation to historic trends in inequalities, and in reference to Dickens's *A Christmas Carol*, that “The hypothesis of the spirit of Christmas yet to come seems to be true—inequalities in health have not declined, partly because miserliness in the past does lead to future inequalities in health.”³ Christmas Yet to Come, it seems, is upon us.

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Competing interests: RM and the Research Unit in Health, Behaviour and Change are funded by the Chief Scientist Office of the Scottish Executive Health Department (SEHD). MS is funded by the South West Public Health Observatory.

1 National Statistics. Inequalities in life expectancy persist across the UK. Press release, 10 November 2005. www.gnm.gov.uk/Content/Detail.asp?ReleaseID=177219&NewsAreaID=2 (accessed 1 Dec 2005).

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3 Dorling D, Mitchell R, Shaw M, Orford S, Davey Smith G. The Ghost of Christmas Past: health effects of poverty in London in 1896 and 1991. *BMJ* 2000;321:1547-51.