Inside PubMed: Puns, punch-lines and inside jokes (yes, seriously)

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Few websites are as useful to physicians as PubMed. A free search engine[1] that allows users to access the comprehensive MEDLINE database, PubMed is particularly indispensable to physician researchers and those who put a premium on evidence-based medicine. Despite its sober reputation, however, a significant amount of playful content manages to thrive within PubMed's archives.

Case in point: Dr Dennis Upper's 1974 article[2] on writer's block, which contains no words. It is appropriately titled "The unsuccessful self-treatment of a case of 'writer's block'" (PMID: 16795475).

While some PubMed articles are merely amusing, others are potentially misleading.

Bradycardia in people named Brady

For over 30 years now, the *BMJ* has been publishing a special Christmas edition of articles that, while technically employing conventional research methodology, are meant to be taken tongue-in- cheek. For example, a study[3] by Dr John Keaney and colleagues – published in the *BMJ's* 2013 Christmas edition and indexed accordingly in PubMed (PMID: 24336304) – sought to determine whether a person's name can influence his or her health by assessing whether people with the surname "Brady" had a greater prevalence of bradycardia.

After comparing hospital records with the Dublin telephone directory, researchers found that the proportion of pacemaker recipients was higher in Bradys than in non-Bradys (1.38 percent vs 0.61 percent, respectively; P=0.03) and suggested developing name-specific screening programs. Nothing in the study's PubMed page – no tag for irony, for example – suggests that its conclusions or recommendations should be taken anything but seriously.

Laughter and health

The MIRTH study,[4] which reviewed the health effects of laughter, was also published in the Christmas 2013 *BMJ* and included in the PubMed database (PMID: 24336308). Written by Drs Robin Ferner and Jeffrey Aronson, the article contains such findings as: "Laughter induced by a clown improved lung function in patients with chronic obstructive pulmonary disease. One of the study's authors was a clown, something only alleged of other studies."

The study's results were featured in both *National Geographic* and the *New York Times (NYT)*. The *NYT* article[5] emphasized the lighthearted character of the *BMJ* Christmas issues and in most cases qualified the reported effects as extrapolations from single studies. *National Geographic*[6] noted that the authors wrote tongue-in-cheek but also made such statements as: "The demonstrable physical and therapeu-

tic benefits of laughter found by various studies over the years include greater suppleness in arterial walls, lowered risks of myocardial infarction, and improved lung function." This was based on findings reported in the *BMJ* study but – unlike its source – *National Geographic* did not make it clear that these assertions were based only on one study each, with sample sizes of 18, 300 and 29, respectively.[7-9]

Remote, retroactive intercessory prayer

Even Cochrane reviewers are not immune to confusion over the *BMJ's* Christmas issues. An article[10] available in PubMed (PMID: 11751349) – the report of a double- blind, parallel group – randomized controlled trial conducted by Dr Leonard Leibovici on 3,393 patients – was among the 10 studies analyzed in a 2009 Cochrane review[11] of the effects of intercessory prayer on illness. The problem: Leibovici's study, part of the 2001 *BMJ* Christmas edition, was intended to be taken as irony.[12]

Leibovici apparently believed this was obvious enough from the trial's methodology: he designated someone to pray, in the year 2000, for patients hospitalized from 1990 to 1996, then compared those patients' hospital records with those of the control group to determine if prayer had *retroactively* improved health outcomes. "The purpose of the article," said Leibovici in response[13] to readers' critiques, "was to ask the following question: Would you believe in a study that looks methodologically correct but tests something that is completely out of people's frame (or model) of the physical world…?" Leibovici further clarified: "I believe that prayer is a real comfort and help to a believer. I do not believe it should be tested in controlled trials." Nonetheless, the time-bending trial ended up in a Cochrane review.

Critical eye needed

When viewing articles in PubMed, therefore, it's worth remembering that not all scientific papers are meant to be taken seriously. Even papers from respectable medical journals should be viewed with a critical eye – especially if they have Christmas (or April Fools') editions.

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