Placebos in 19th Century Medicine: A Quantitative Analysis of the BMJ

The Harvard community has made this article openly available. Please share how this access benefits you. Your story matters.

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Published Version</td>
<td><a href="http://doi.org/10.1136/bmj.e8326">doi:10.1136/bmj.e8326</a></td>
</tr>
<tr>
<td>Accessed</td>
<td>June 24, 2017 7:13:58 AM EDT</td>
</tr>
<tr>
<td>Citable Link</td>
<td><a href="http://nrs.harvard.edu/urn-3:HUL.InstRepos:10579404">http://nrs.harvard.edu/urn-3:HUL.InstRepos:10579404</a></td>
</tr>
<tr>
<td>Terms of Use</td>
<td>This article was downloaded from Harvard University's DASH repository, and is made available under the terms and conditions applicable to Other Posted Material, as set forth at <a href="http://nrs.harvard.edu/urn-3:HUL.InstRepos:dash.current.terms-of-use#LAA">http://nrs.harvard.edu/urn-3:HUL.InstRepos:dash.current.terms-of-use#LAA</a></td>
</tr>
</tbody>
</table>

(Article begins on next page)
abstract

Objective To provide the first quantitative data on the use of the term “placebo” in the 19th century.

Design Computer search of BMJ’s archival database from January 1840 (the first issue) through December 1899 for uses of the words “placebo(s).” Grounded theory was used to categorise the implications of uses of the term.

Results 71 citations contained the term “placebo(s).” Of these, 22 (31%) used the term to mean “no effect” or as a general pejorative term, 18 (25%) portrayed placebo treatment as permitting the unfolding of the natural history (the normal waxing and waning of illness), 14 (20%) described placebo as important to satisfy patients, 7 (10%) described it as fulfilling a physician’s performance role, 3 (4%) described its use to buy time, 3 (4%) described its use for financial gain, 2 (3%) used it in a manner similar to a placebo control, and only one implied that placebo could have a clinical effect. Only one citation mentioned telling the patient about his placebo treatment.

Conclusion Nineteenth century physicians had diverse a priori assumptions about placebos. These findings remind us that contemporary medicine needs to use rigorous science to separate fact from its own beliefs concerning the “provision of care.” As in previous generations, ethical issues concerning placebos continue to challenge medicine.

Methods

We included all BMJ articles, reports, and letters between the dates of January 1840, the first year of the journal’s publication, and December 1899. We chose the BMJ for the availability of its online historical database, its prominence, and the likelihood that it represented the medical profession’s practices and attitudes. We searched the BMJ database with the terms “placebo” “placebos” and “placebo effect.” We used methods from grounded theory to categorise citations according to theme. (See supplementary material on bmj.com for list of all methods, all citations found, and types of article).

Results

We found 71 citations for “placebo.” All queries for “placebos” yielded the same 71 articles, and we found no articles that mentioned “placebo effect.” Forty seven of the citations (66%) were in specific sections of the BMJ (such as “Correspondence” (10%), “Original communications” (10%), and “Reports of societies” (4%), with the remaining 42% distributed among 23
other categories). Twenty four of the citations (34%) were in non-specified sections. Using grounded theory, we distinguished nine categories for the use of “placebo” in the 71 articles (although there were 75 individual mentions of “placebo” in all): no effect or pejorative (31%), natural history (25%), satisfy patient (20%), medical performance (10%), buy time (4%), financial gain (4%), placebo control (3%), has clinical effect (1%), and unclear (1%) (see table). These categories are further explained and connected with illustrative examples below.

No effect or pejorative—The commonest use of “placebo” was in a derogatory manner to denote therapy that was ineffective or harmless or valuable only for imaginary therapies. A typical comment was placebos are an “innocent deception on our hypochondriacal and fanciful patients.” The idea of an ineffective placebo was also emphasised in pejorative descriptions of unorthodox practitioners. “It is not an uncommon occurrence for a sick person to go to the nearest apothecary, and get one of the assistants to prescribe some placebo for the more trivial complaints.” Homoeopathic medicine gives “globsules as placebos.” We decided to combine “no effect” and “pejorative” because it was often difficult to decide whether any distinction we might perceive was the intent of the authors.

Natural history—In this category placebo treatment was equated with the opportunity for allowing patients to use their own ability to get well, often within the context of getting good sleep, eating a healthy diet, and proper care. For example, physicians wrote that giving placebos provided an opportunity “to place the patient in circumstances as favorable as possible to the sanative operations of nature.” Another physician reports on a visit to Persia, where a traditional healer, or hakim, “leaves his patient very much to nature, prescribing merely placebos.”

Satisfy patient—We put an article into this category when there was some indication that the desire for a treatment came from the patient. For example, a fever was treated with “a saline mixture, with nitric aether, (more as a placebo than because he really seemed in want of medicine).” A bandage was applied to a man’s arm “as a placebo to satisfy the patient.” Included in this category are cases where the physician dispenses a placebo to calm the patient. A physician described other physicians treating patients with diarrhoea from the “fear only” of cholera, “who upon discovering this, gave mere placebos to their patients, who flocked to them in shoals during the panic.”

Performance—In these citations physicians described their use of placebo as fulfilling the requirements of their professional role. There was no contextual implication of patient request; the behaviour seemed self generated. When “the patient suffered from disease in which the organs were so profoundly altered that it was little use attempting to prescribe anything more than a series of placebos.” Another physician reports “while examining her she passed a watery evacuation involuntarily on her bed. I had to do something, so I resorted to the blister over the vagus, and left a lavender water placebo to be given.”

Buy time—Three citations described situations where placebo was given to patients for extended periods of time or to extend the time for the physician to make a diagnosis. One physician describes how he used a placebo for three years while he experimented to make lax tympanic membranes tense. In order to determine a patient’s “type of appendicitis,” another doctor advocated “a carminative placebo” and making a second visit four hours later.

Financial gain—Three articles clearly suggested that placebos concerned financial incentives. One physician described how “some medical men” with “starving families” would “give globules as placebos.” While the author expressed compassion for his peers, he stressed drawing a “broad line between medicine and homeopathy” and reminded his peers to not barter “principle for pelf [wealth].” Another article described the opportunity of some physicians to “swell up the bill” and prescribe an “aqua col. or placebo prescription.”

Placebo control—Two articles used placebo as a research tool, probably to ensure blind assessment. Both took place in the late 19th century when orthodox medicine began to have interest in blind assessment. In one experiment, concerning amblyopia (n=20), performed in 1886, a physician gave “half the cases strychnine” and “in the other half a placebo, with apparently equally good results.” Another experiment, performed in 1889, tested whether mercuric iodide had value for scarlet fever. The physician “treated three series of eight cases each simultaneously, with iron, mercuric chloride, and a placebo, and, on the whole, the latter series did best.”

Has an effect or unclear—Only one citation was categorised as having an effect on clinical outcomes. It was mentioned that in cases of sleep anxiety, “a placebo administered with the assurance that it is a powerful hypnotic” was “often successful.”

The implication of placebo in one citation could not be ascertained.

Ethical considerations
Ethical issues (such as administering ineffective medicine, quackery, earning extra money) were an overlapping underlying theme in many of the articles. Our impression is that placebos were largely administered deceptively, and patients were never told of the “pious fraud.” Only one case reported disclosure. A placebo, disguised as morphine was given to a patient with morphine addiction. Three months later, during the follow-up visit, the physician reported having “a good laugh [with the patient] over the pious fraud of the water hypodermic injection.”

Discussion

Limitations
Our sample is limited to a single journal, the BMJ. We selected it because it is one of the oldest continuous medical journals in the world with an electronically searchable database, and because of its affiliation with the British Medical Association (BMA). We could have expanded our numbers by using the databases of other journals, but we decided that limiting our search to a single journal would provide a valuable proof of principle that quantitative methods could illuminate the history of placebos. Verification in other electronically accessible journals is warranted.

Conclusions
A priori beliefs concerning dummy treatments have been rampant throughout history. In the 19th century, physicians considered placebos to have no impact on clinical outcomes. The idea of what Stuart Wolff first called, in 1950, “the placebo effect” did not exist. Recently, there has been interest in the effects of placebo treatment and the ritual that surrounds all active or inactive medical interventions. Given the recent interest in placebo studies, there is hope that rigorous scientific research will correct our own contemporary a priori beliefs concerning placebos and the “provision of care.” Discovering exactly what effect the ritual of medicine has is important for a full understanding of clinical practice and healthcare policy. An expanded understanding of the underlying neuroscience of
placebo effects should also help to make vague beliefs more precise.\(^{28}\) Furthermore, the absence of an ethical discussion on placebo use in the 19th century and our own hidden use of placebos in clinical practice\(^{29}\) should remind us that an ethical examination of placebo remains a critical challenge for medicine.

We thank Iain Chalmers for advice.

Contributors: TJK and JER designed the study, analysed the data, and prepared the manuscript. BHS analysed the data and contributed to the manuscript. TJK is the guarantor.

Funding: The paper is supported in part from NIH NCCAM grants K24 AT004095, R01 AT004662, R01 AT005280, R01 AT006964, and P01 AT006663.

Competing interests: All authors have completed the ICMJE uniform disclosure form at www.icmje.org/coi_disclosure.pdf (available on request from the corresponding author) and declare: no support from any organisation for the submitted work; no financial relationships with any organisations that might have an interest in the submitted work in the previous three years; no other relationships or activities that could appear to have influenced the submitted work.

7 West RI. On the propriety of dispensing medicines. BMJ 1849;0:391.
9 Cormack JR. Our relations with homoeopathy. BMJ 1865;0:444.
10 Symonds, Introductory lecture on the course on the theory and practice of medicine. BMJ 1842;0:63-70.
13 Sloan J. Surgical observations and reflections. BMJ 1857;0:363-6.
14 Leading articles. BMJ 1853;0:1047-50.
17 Symonds CJ. An address on the individual value of the symptoms in perforative peritonitis, more especially as regards operation. BMJ 1869;1:517-21.
18 Miscellaneous intelligence. BMJ 1865;0:395.

Accepted: 27 November 2012

Cite this as: BMJ 2012;345:e8326

This is an open-access article distributed under the terms of the Creative Commons Attribution Non-commercial License, which permits use, distribution, and reproduction in any medium, provided the original work is properly cited, the use is non commercial and is otherwise in compliance with the license. See: http://creativecommons.org/licenses/by-nc/2.0/ and http://creativecommons.org/licenses/by-nc/2.0/legalcode.
Table

<table>
<thead>
<tr>
<th>Category</th>
<th>No (%) of citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>No effect or pejorative</td>
<td>22 (31%)</td>
</tr>
<tr>
<td>Natural history</td>
<td>18 (25%)</td>
</tr>
<tr>
<td>Satisfy patient</td>
<td>14 (20%)</td>
</tr>
<tr>
<td>Performance</td>
<td>7 (10%)</td>
</tr>
<tr>
<td>Buy time</td>
<td>3 (4%)</td>
</tr>
<tr>
<td>Financial gain</td>
<td>3 (4%)</td>
</tr>
<tr>
<td>Placebo control</td>
<td>2 (3%)</td>
</tr>
<tr>
<td>Has an effect</td>
<td>1 (1%)</td>
</tr>
<tr>
<td>Unclear</td>
<td>1 (1%)</td>
</tr>
</tbody>
</table>