

## RESEARCH

## CHRISTMAS 2012: YESTERDAY'S WORLD

# Placebos in 19th century medicine: a quantitative analysis of the *BMJ*

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## 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.

## Introduction

Currently, placebos are integral to the methodology of scientific research. Additionally, placebo treatments are generally thought to affect health outcomes, especially those based on subjective self appraisal.<sup>1</sup> Furthermore, administering placebos deceptively, outside of the concealed context of clinical trials with informed consent, is considered unethical.<sup>2</sup> Historians have noted that such contemporary notions of placebo gained

acceptance only after the second world war with the development and adoption of the randomised controlled trial.<sup>3,4</sup> It is thought that in earlier periods placebos were deceptively and routinely used in clinical practice and considered an innocuous “pious fraud” to placate “ignorant... disappointed ... and incurable cases.”<sup>5</sup> Patients reporting improvements from placebo were experiencing “imaginary” symptoms.<sup>3</sup> This understanding of placebo history is based on non-systematic archival evidence and qualitative descriptions. We sought to provide quantitative historical data on placebo use in the 19th century.

## 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.<sup>6</sup> (See supplementary material on [bmj.com](http://www.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

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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 1). 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”.<sup>7</sup> 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.”<sup>8</sup> Homeopathic medicine gives “globules as placebos.”<sup>9</sup> 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.”<sup>10</sup> Another physician reports on a visit to Persia, where a traditional healer, or hakim, “leaves his patient very much to nature, prescribing merely placebos.”<sup>11</sup>

*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).”<sup>12</sup> A bandage was applied to a man’s arm “as a placebo to satisfy the patient.”<sup>13</sup> 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.”<sup>14</sup>

*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.”<sup>15</sup> 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.”<sup>16</sup>

*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.<sup>17</sup> In order to determine a patient’s “type of appendicitis,” another doctor advocated “a carminative placebo” and making a second visit four hours later.<sup>18</sup>

*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.”<sup>19</sup> 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.”<sup>20</sup>

*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.<sup>4</sup> 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.”<sup>21</sup> 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.”<sup>22</sup>

*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.”<sup>23</sup> The implication of placebo in one citation could not be ascertained.<sup>24</sup>

## 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.”<sup>25</sup>

## 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 Wolf first called, in 1950, “the placebo effect” did not exist.<sup>26, 27</sup> 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,<sup>1</sup> 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.<sup>28</sup> Furthermore the absence of an ethical discussion on placebo use in the 19th century and our own hidden use of placebos in clinical practice<sup>29</sup> should remind us that an ethical examination of placebo remains a critical challenge for medicine.

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## Table

Table 1 | Primary categories of use of the term “placebo” in 71 citations in BMJ 1840–99

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