

The Placebo Effect

The Medicinal Power of Placebo Use

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A placebo is an inert form of treatment that has a biological effect on the body. The placebo effect has been shown to improve symptoms in a way similar to active medication. Placebos can be used as therapeutic procedures to treat individual patients but are mainly used today as controls in clinical research and trials (1). Benjamin Franklin carried out the first trials utilizing placebos in 1784, under the direction of King Louis XVI (2). However, their use did not become commonplace in research until World War II when Lieutenant Colonel Henry Beecher used them to study how emotions affect healing (2). The patient's perceived medical improvement is where placebos are shown to be truly useful. The placebo itself, being chemically inert, does not have an intrinsic value to a patient. It is the extrinsic circumstances surrounding the placebo, such as trust and care between physicians and their patients that give it a social and physical value resulting in the placebo effect. Thus, placebos hold the ability to transform our biomedical culture from focusing solely on developing impersonal technology and miracle drugs to also developing stronger doctor-patient relationships and a greater emphasis on the individual.

It is not the medical properties of a placebo—be it in the form of a pill, injection, or sham surgery—that directly affect the patient, but rather the power of suggestion and the meaning surrounding it. The outside influence, that is, the ideas and notions that patients have about a treatment, form the mechanisms of the placebo effect (1). These mechanisms are not just subjective, but also biological. Recent neuroimaging technology has shown that the brain releases neurotransmitters, which carry out the healing process, even when a patient has received a placebo (1). This shows that a patient's knowledge, or presumed knowledge, of a procedure plays a large role in the efficacy of the treatment. Another crucial element to the placebo effect is the empathy of the doctor involved (3). Patients desire a more personal relationship with doctors and do not want to be left entirely to their own devices,

even when it seems no medical treatment will be effective. Thus, knowing the patient beyond a medical sense contributes greatly to the meaningfulness and the efficacy of the response (4). The healing process is not solely about the medicine; it is also about the symbolism and the ritual that accompany treatment (1). Different societies across the globe have accepted various symbols, including seemingly bizarre methods of treatments such as undressing in front of strangers and swallowing non-food items, as effective medical treatments. When rituals are filled with meaning they can serve as placebos (4).

Research on Placebos

Various scientists have conducted studies on placebos, the results of which emphasize the importance of *meaning*

in medicine. Fabrizio Benedetti of the University of Turin Medical School was one of the first scientists to carry out what is known as an “open-hidden” study to show the direct benefit of a doctor's presence (5). His study showed that patients who unknowingly received a drug demonstrated less relief than patients who received the same drug after a physician had told them it would decrease symptoms (5). A study run by Ted Kaptchuk, director of the Program in Placebo Studies & the Therapeutic Encounter at Beth Israel Deaconess Medical Center in Boston, took this result one step further (5). In his study of the placebo effect on Irritable Bowel Syndrome (IBS), he separated IBS patients into three groups (5). The first was the control group; these patients were placed on a waiting list and received no treatment (5). The second



Figure 1: A doctor personally examines a young patient. Studies show that doctors who show a personal interest in their patients see greater improvement in their patients than doctors who don't.

group was seen by empathetic doctors but given fake acupuncture (5). The third group was seen by formal, business-like doctors and also treated with sham acupuncture (5). All three groups were reevaluated after three weeks. 28 percent of the first group, 62 percent of the second group, and 44 percent of the third group reported improvements in their pain symptoms (5). As Kaptchuk concluded, the study demonstrates that “connecting with the patient, rapport and empathy [...] that few extra minutes is not just icing on the cake. It has biology” (5). Even though no group actually received therapy known to heal, the patients who were tended to by compassionate staff showed improvements analogous to those of patients receiving common active IBS drugs. These studies exhibit how instituting placebos in medical practice can directly reinforce the importance of the doctor-patient relationship in our society.

Modern technology has provided new opportunities for studying the placebo effect, which may further the acceptance of placebo use in society. A placebo is no longer restricted to the form of a simple pill or injection. Now, it may even be seen in the form of surgery. Knee-surgeon Bruce Moseley, who serves as the team doctor of the Houston Rockets, has used placebo arthroscopic knee surgery with great success (3). The knees of patients who received the placebo surgery healed at the same rate as the knees of those who underwent actual surgery. The placebo patients continued to improve even after they were told the surgery was a sham (3). This underscores the idea that doctor credibility and trust play key roles in the placebo effect (3). Additionally, due to developments in neuroimaging technology, clinical trials are now able to track the release of chemicals by the brain following placebo intake. In one such case, the brains of patients with Parkinson’s disease receiving a placebo drug were observed by PET scans to release an amount of dopamine comparable to brains of patients receiving therapeutic doses of active drugs, such as levodopa (4). In general, Kaptchuk and other researchers have found evidence that much of the placebo effect is mental, as larger pills have greater efficacy than smaller ones, two pills more than one, and brand-names more than generics (2). Furthermore, injections work better than capsules, which work better than pills, and colored pills are more effective than white pills (2). All in all, these studies display that conditioning,

expectations, and learned behaviors all influence the efficacy of treatment.

Opposition to Placebos

Despite the effectiveness of placebos displayed in these studies, many remain opposed to their usage in medicine, largely on the basis of ethical issues. Robert Temple, director of the Office of Medical Policy of FDA’s Center for Drug Evaluation, stated that the FDA will not approve the use of placebos simply because they are not drugs (2). Many major drug companies share his view; however, they also are likely to have an underlying motive, as placebos would create profit obstacles (5). Another objection to placebos is the fear of deceiving and misleading patients (3). Placebos are often seen as a form of fraud, for in order to prescribe a placebo a patient cannot know that they are receiving an inert treatment (5). Professionals are afraid that the use of placebos may be seen as skimping on care, but, in a sense, it is just the opposite (5). Prescribing a placebo requires a doctor to truly desire to help the patient even if there is nothing that modern medicine can offer. Nevertheless, some people, such as philosopher Sissela Bok, argue that the deception, no matter what the reason, is deeply unethical. Bok declares, “to permit a widespread practice of deception [...] is to set the stage for abuses and growing mistrust” (1). Those who share this view feel that the mainstream use of placebos will jeopardize the current medical system and doctor-patient relationship, while, in actuality, placebos are more likely to enhance it.

Critics have suggested that placebos may raise problems regarding safety and regulation; however, with a proper system of regulation, these issues would no longer be of concern. One fear regarding placebos is that insurance companies will manipulate their use, as coverage of placebos would be far cheaper than coverage of active medication (5). But if government regulations were instituted to prohibit agencies from favoring placebos over drugs, this would cease to be a valid argument. In addition, an important argument against placebos is that they are not always successful. However, drugs are approved even without one hundred percent efficacy and with potentially severe side effects, whereas placebos never bring the risk of any side effects. Placebos have become well accepted in clinical research,

and all effects of drugs in these trials must surpass that of a placebo to be approved by the FDA, meaning that the placebo effect can be as great as or higher than the effects of active drugs being tested. In these situations, placebos should be allowed as a form of treatment. If the FDA approves placebos, the public will have even greater faith in the placebo effect, possibly leading to better symptom relief. The benefits of placebo use would far outweigh any perceived harms.

The Implementation of Placebos

Placebos have been shown to activate quantifiable changes in neurotransmitters, immune regulators, and hormones (4). Thus, even if the effect is “all in your head,” that mentality leads to a measurable biological result (2). Relief of symptoms is not just subjectively felt, it can be monitored by the release of chemicals from the brain, and such a reaction is shown to occur even when a patient is treated with a placebo (5). The incessant medicalization our society has come to accept as the norm is not the sole path to medical “progress.”

Placebos show that the brain can learn through conditioning to heal with significantly less medication than is currently seen to be necessary (2). The placebo effect has enormous implications for the medical field in that it illustrates how medicalization may be the wrong aspect of healing to focus on. As displayed by placebo studies, the level of empathy in medical care has a great influence on the therapeutic process. Reevaluating and reaffirming the doctor-patient relationship may do more for society than a constant search for miracle drugs (5). Ted Kaptchuk, the director of the Harvard Program in Placebo Studies, and Wayne Jonas, the president of the Samueli Institute, a non-profit medical research organization, concur that placebo research has demonstrated the importance of considering “both the science and the art of medicine, to think about disease as illnesses, and not to rely solely on short-term, high-tech solutions” (2). Changing the social medical mindset to concentrate more on such ideas will allow our medical system to focus more on the individual and less on technology. This shift will lead to the transformation of American medicine.

Unfortunately, a major ethical issue still surrounding placebo use is that of informed consent. It is difficult to obtain



Figure 2: Doctor injects test subject with placebo as part of the Tuskegee Syphilis Study.

consent from patients for placebos without revealing the nature of the placebo (1). Scientists and physicians have long struggled with this dilemma, but there are now standards of ethics put into place in order to protect patients against potential abuses. It is now necessary for experiments conducted using public funding to be approved by ethics committees at the area of research (1). These committees ensure that safety of patients remains the highest priority in any clinical study.

In order to institute placebo use into the medical mainstream, the ethical debate must be solved. This debate focuses mainly around the issue of consent and how to obtain patient permission to treat with a placebo without ruining the placebo effect. One recently introduced option is alternating between medicine and placebo in treatment (5). This way, fewer drugs are used, and the patient can know and consent to being given a placebo without jeopardizing treatment, as the patient is not informed of when he is being given medicine or a placebo. In a clinical study done in support of this idea, patients who alternated between applying a topical pain cream and a placebo cream experienced the same level of relief as patients who received up to four times more of the active drug (5). The effect is due to classical conditioning and the way the brain can learn to associate a placebo with relief and send healing signals even when the treatment is inert (5). Another way to handle the issue of consent is to have patients sign an official form.

For instance, pediatricians could distribute these forms to the guardians of minors and once the patients become adults, primary care physicians could redistribute consent forms. The forms would allow for a blanket request for or denial of the use of placebo treatment, should it ever be deemed helpful for a patient. A patient may change his or her decision at any time, but the form would be required at every doctor's office. The institution of this form would allow placebo use to become a regular and accepted part of medical care.

Placebos should not face great opposition in becoming a common practice. While critics denounce them as mere sugar pills, the general public would embrace their use. This is due to the fact that society has begun to view placebos as based off of the "entire ritual of treatment, the complete interaction between doctor and patient" (2). This outlook derives from recently discovered biological mechanisms of the placebo effect. Because the public can now see that the placebo effect is real, there is no longer a fear of deception. Without this fear of deception, there is less public wariness about the undermining of the doctor-patient relationship (3). There are multiple documented examples of patients requesting placebos, from a son begging for a placebo as a last resort to help his cancer-stricken father to the more famous case of journalist Norman Cousins (3). Cousins was diagnosed with ankylosing spondylitis and given only a one out of five hundred chance of survival (3). However, he decided

to take matters into his own hands, and, with the support of his doctor, delved into a regimen of positive thinking and laughter (3). Cousins made a full recovery (3). These examples display the patient and caregivers' desire to utilize the placebo effect and thus support the idea of introducing placebo use into primary medical care.

Conclusion

Establishing placebo use in American medicine is in the best interest of multiple parties. Patients will benefit because placebo treatment will decrease the cost of medical care and increase the personal component of the doctor-patient relationship. Doctors will benefit through an increase in patient trust and an ability to conserve resources. Ultimately, society as a whole will benefit from a decrease in government-related medical costs and taxes and, most importantly, a renewed focus on the individual in healthcare.

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References

1. D. Moerman, *Meaning, medicine and the 'placebo effect'*. Cambridge University Press, New York, NY. (2002).
2. M. Specter, "The power of nothing: Could studying the placebo effect change the way we think about medicine?" *The New Yorker*, **87**, 30-36 (December 2011).
3. A. Harrington, *The Cure Within: A History of Mind-Body Medicine*. (W.W. Norton & Company Inc., New York, NY, 2008).
4. S. Pohlman, N. J. Cibulka, J. L. Palmer, R. A. Lorenz, L. Smithbattle, "The placebo puzzle: examining the discordant space between biomedical science and illness/healing," *Nurs. Inq.* (2012). Available at <http://onlinelibrary.wiley.com/doi/10.1111/j.1440-1800.2012.00592.x/full> (October 15, 2012).
5. R. Tuhus-Dubrow, *The magic cure*. The Boston Globe. (May 2010). Available at http://www.boston.com/bostonglobe/ideas/articles/2010/05/09/the_magic_cure/ (October 15, 2012).