



The Placebo Effect in Human Health

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ABSTRACT:

The placebo effect is a widely researched phenomenon in the field of human health. It is a fascinating concept that refers to the phenomenon where a person experiences positive health effects after receiving a medically inactive substance. Placebo effects have been reported in various clinical settings, including pain management, depression, anxiety, and even in some cases of cancer. The aim of this research paper is to explore the placebo effect in human health, including its definition, history, mechanisms, and its implications for clinical practice.

Introduction:

The placebo effect has been defined as the improvement of symptoms or clinical outcomes in a patient following a non-active intervention, such as a sugar pill, saline solution, or sham surgery. The term placebo comes from the Latin phrase 'I shall please,' and it has been used since the 18th century to refer to a substance or procedure that has no therapeutic effect but is given to the patient with the intention of making them feel better.

History of the Placebo Effect:

The placebo effect has been a subject of interest for centuries, and its history dates back to ancient Greece, where sham treatments were used to treat various illnesses. The modern concept of the placebo effect emerged in the mid-20th century when Henry Beecher, an American anesthesiologist, conducted a ground breaking study on the power of placebos. Beecher found that almost one-third of patients experienced significant pain relief after receiving a placebo injection.

Mechanisms of the Placebo Effect:

The mechanisms underlying the placebo effect are not fully understood. However, it is believed that several factors contribute to the phenomenon, including patient expectations, classical conditioning, and the release of endogenous opioids in the brain. Placebos can trigger the release of endogenous opioids, such as endorphins, which are natural painkillers that bind to opioid receptors in the brain and spinal cord.

Implications of the Placebo Effect for Clinical Practice: The placebo effect has significant implications for clinical practice. It is well-known that the placebo effect can produce measurable physiological changes in the body, such as changes in heart rate, blood pressure, and the release of hormones. Therefore, it is essential to consider the potential influence of the placebo effect when evaluating the efficacy of a medical treatment. In addition, placebo treatments can be used as an ethical alternative to active treatments in clinical trials, particularly when testing the efficacy of new treatments.

Discussion:

The placebo effect is not just limited to the administration of medically inactive substances, but also involves non-pharmacological interventions, such as sham surgeries or procedures. Placebo surgeries involve performing a surgical procedure on a patient, but not actually performing the intended surgical intervention. Placebo surgeries have been used in clinical trials to evaluate the efficacy of surgical interventions, and have shown that patients who receive placebo surgeries can experience similar improvements in symptoms and outcomes as those who receive actual surgical interventions.

Another interesting aspect of the placebo effect is the role of patient expectations. It has been shown that patients who have positive expectations of a treatment are more likely to experience placebo effects than those who have negative expectations. For example, a patient who believes that a particular medication will be effective in reducing their pain is more likely to experience placebo effects than a patient who believes the medication will not work. This underscores the importance of patient-provider communication and the need for healthcare providers to manage patient expectations when providing treatments

The placebo effect is also relevant in the context of personalized medicine. The placebo effect is not a uniform phenomenon, and different patients may respond differently to placebo treatments. Factors such as genetics, personality, and previous experiences with placebo treatments can influence the likelihood and strength of placebo effects. Understanding the individual factors that contribute to placebo effects could help personalize medical treatments and optimize their efficacy.

The placebo effect also has ethical implications, particularly in cases where patients are misled or deceived about the nature of their treatment. In some cases, patients may be given placebos without their knowledge or consent, which raises ethical concerns about the use of deception in medical practice. However, it is important to note that the use of placebos is not inherently unethical, and can be used ethically in certain contexts, such as clinical trials.

OBSERVATION :

A survey was done among 200+ people in India out of which 105 were common people from every sector and 110 medical students from some well-known medical colleges such as KGMU Lucknow, Sharda university Noida there were two separate questionnaires for medical students and common people.

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QUESTIONNAIRE 2 AVAILABLE ON <https://forms.gle/Cb7pt6hWtjNn4b446>

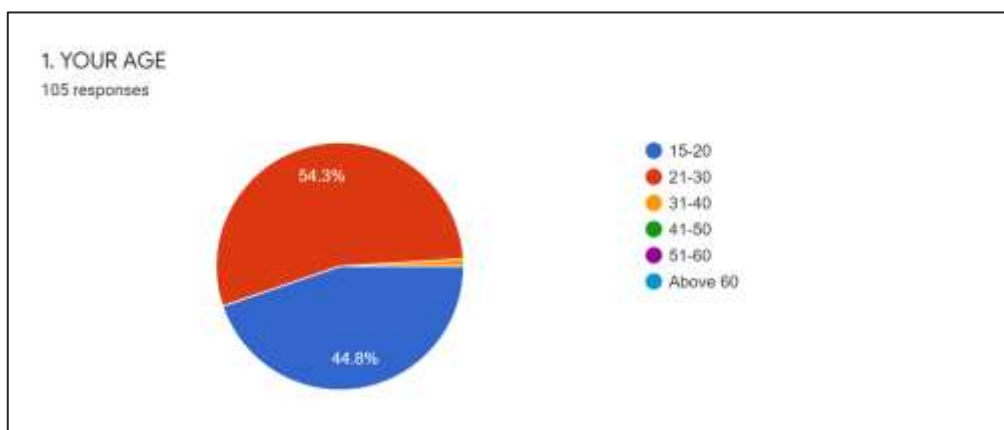
RESULTS :

Among 105 participants 43.8% were familiar with the placebo effect after the definition 88% were able to understand it out of 100% - 48.5% people have observed the placebo effect in their life, and 72.4% (51.4+21) believed that the improvement in patients health depends upon the patient's belief in the treatment.

Among 110 participants from medical colleges, 109 were medical students mostly from the 3rd and 4th years out of which 89.1% were familiar with the placebo concept.

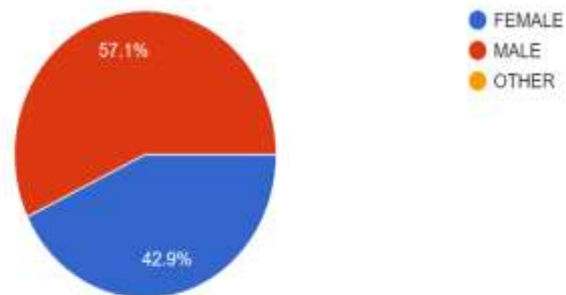
61.8% have observed/given placebo to patients out of which 27.3% have rarely done it. 80.9% have seen improvement in patients' health through placebo treatment and 80% believe that patients' belief in treatment helps improve patients' health.

1. questionnaire for common people



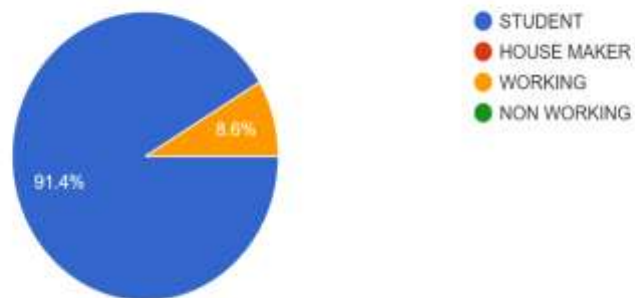
2. GENDER

105 responses



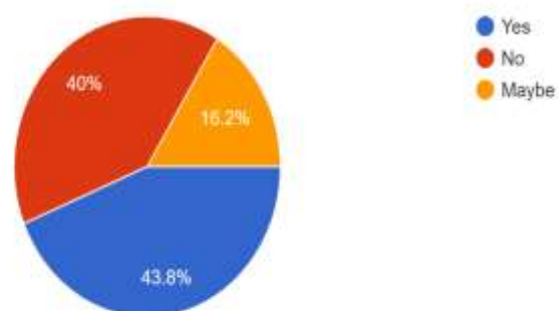
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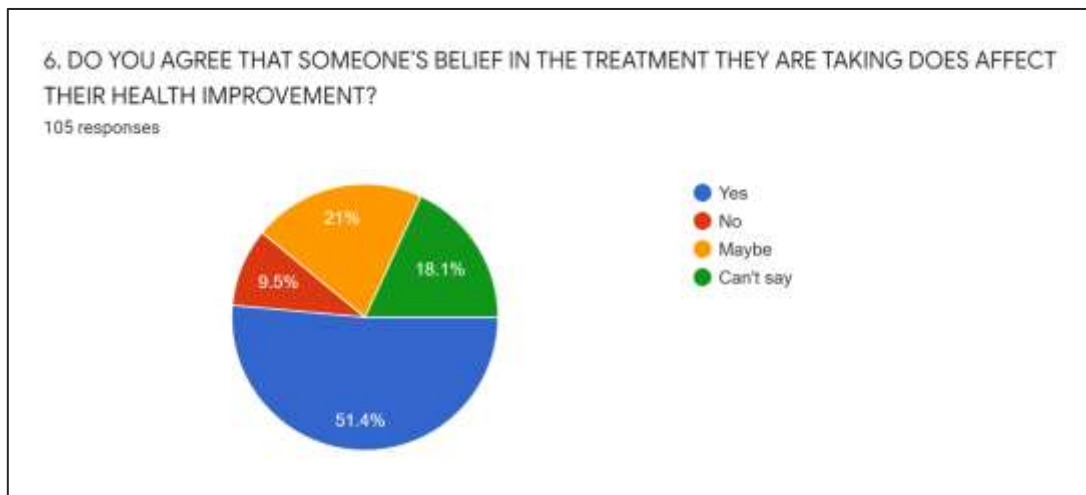
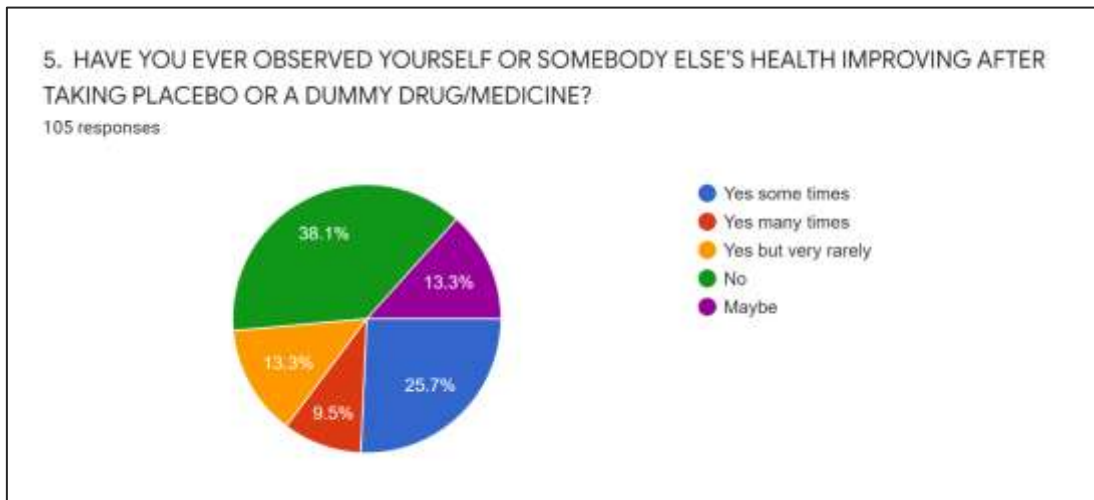
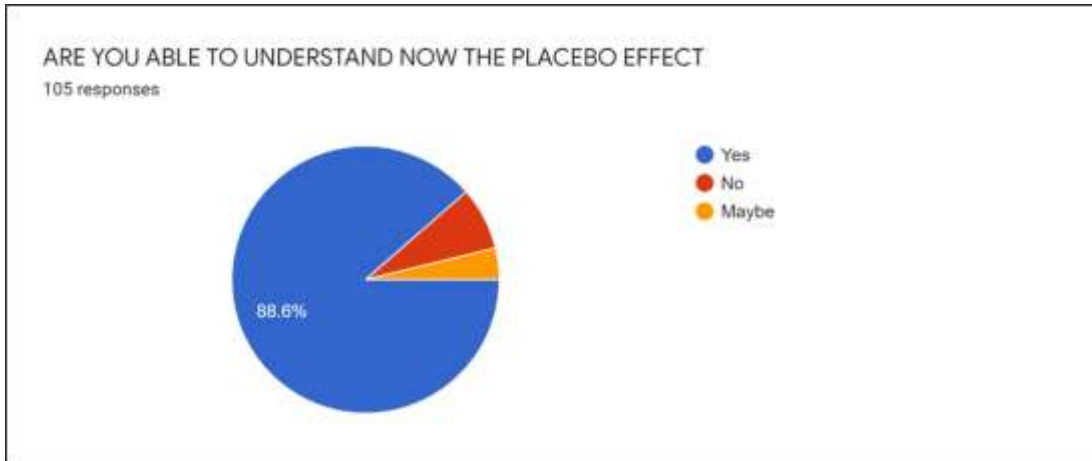
105 responses

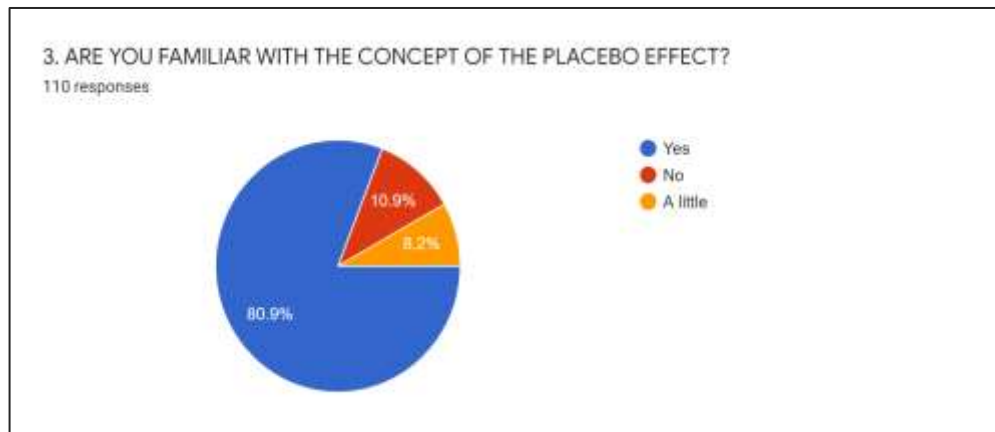
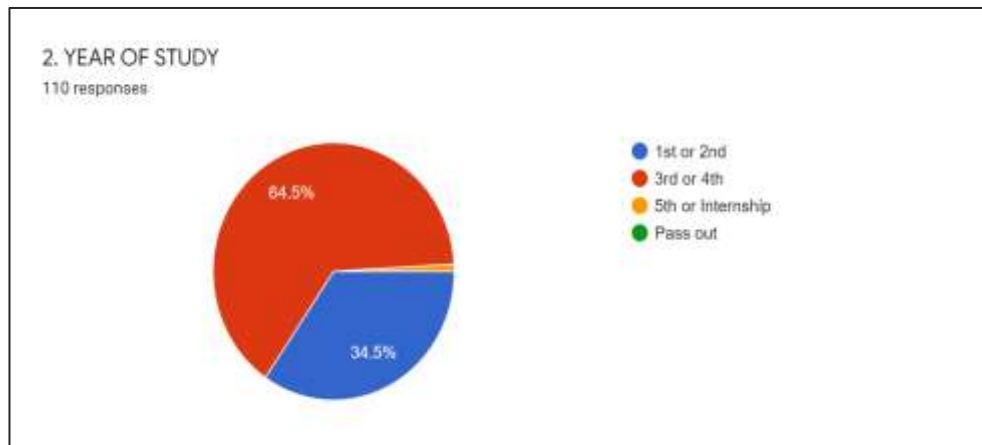
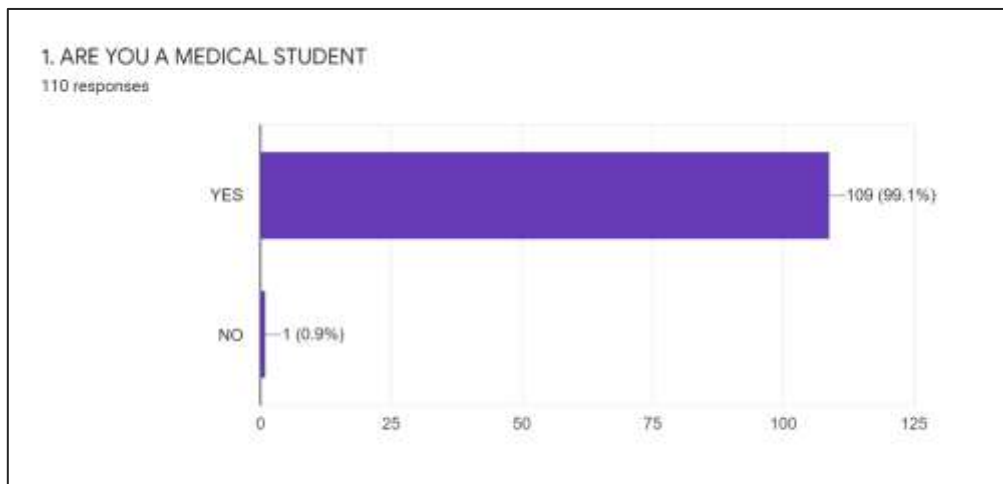


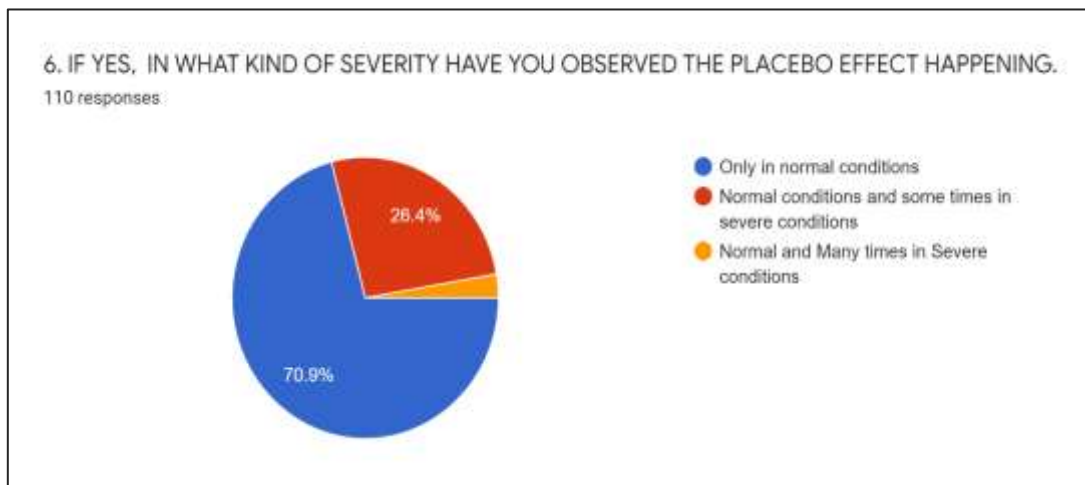
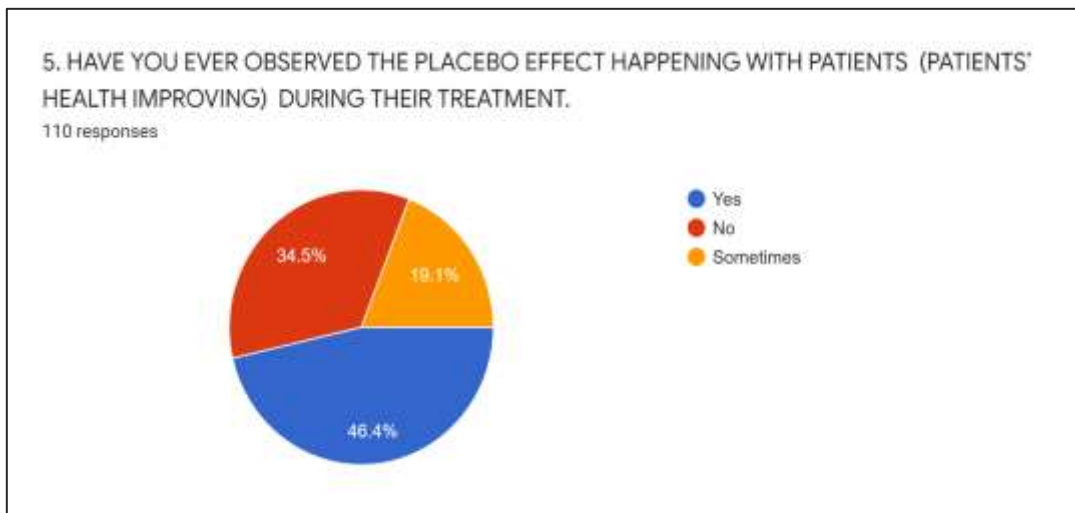
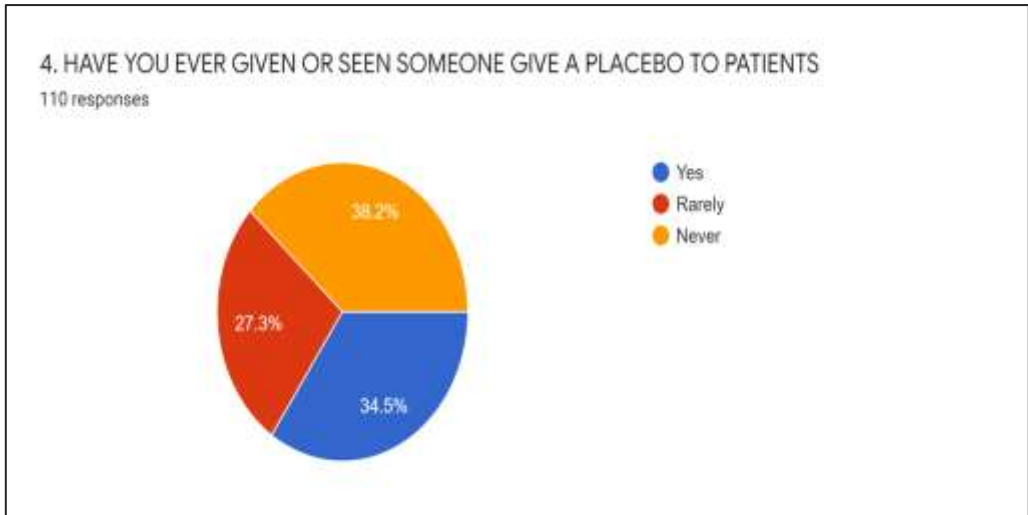
5. ARE YOU FAMILIAR WITH THE CONCEPT OF PLACEBO AND PLACEBO EFFECT

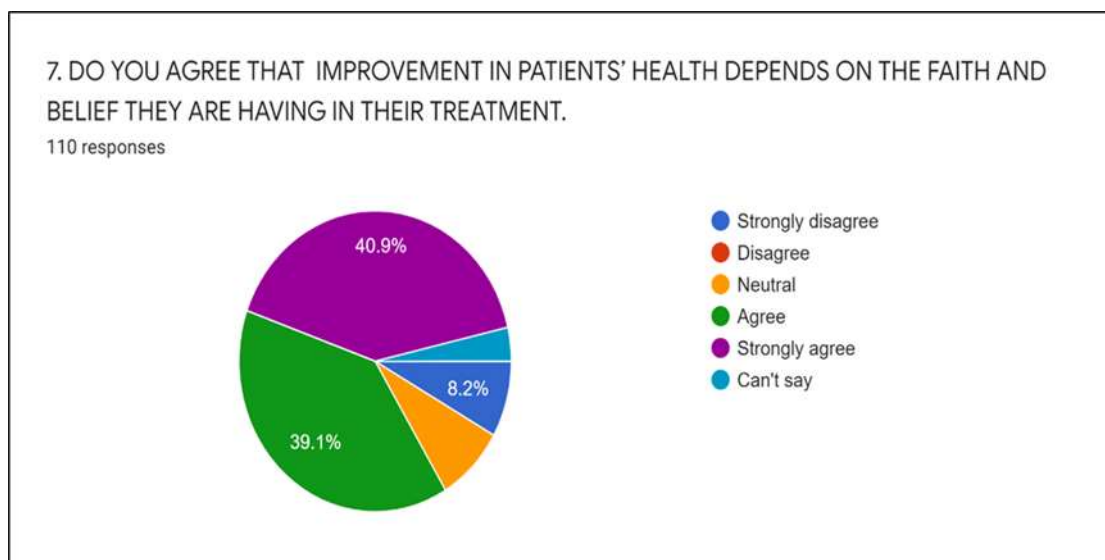
105 responses





2nd questionnaire for medical students





Conclusion

In conclusion, the placebo effect is a complex phenomenon that has been studied for decades. It has significant implications for clinical practice, and its mechanisms are still not fully understood. Further research is needed to understand the factors that influence placebo effects and to optimize their use in medical practice. The placebo effect offers a unique opportunity to harness the power of the mind and the body's natural healing mechanisms, and its potential should not be overlooked. Ultimately, a better understanding of the placebo effect could lead to more effective and personalized medical treatments that improve patient outcomes and promote health and wellbeing.

The placebo effect exists in our day-to-day life as well as in complicated medical research.

From time immemorial treatments through placebo were in practice although the meanings of placebo were different according to the researcher.

it was always in practice and is still in practice, now it has become an important part of research in clinical research.

Through the proceedings in the research, it is found that placebos may provide temporary relief, but they rarely heal.

References

0. placebo. (n.d.) *Farlex Partner Medical Dictionary*. (2012). Retrieved April 15 2022 from <https://medical-dictionary.thefreedictionary.com/placebo>
1. "placebo." *Miller-Keane Encyclopedia and Dictionary of Medicine, Nursing, and Allied Health, Seventh Edition*. 2003. Saunders, an imprint of Elsevier, Inc 15 Apr. 2022 <https://medical-dictionary.thefreedictionary.com/placebo>
2. "placebo." *The American Heritage® Medical Dictionary*. 2007. Houghton Mifflin Company 15 Apr. 2022 <https://medical-dictionary.thefreedictionary.com/placebo>
3. "placebo." *Segen's Medical Dictionary*. 2011. Farlex, Inc. 15 Apr. 2022 <https://medical-dictionary.thefreedictionary.com/placebo>
4. "placebo." *McGraw-Hill Concise Dictionary of Modern Medicine*. 2002. The McGraw-Hill Companies, Inc. 15 Apr. 2022 <https://medical-dictionary.thefreedictionary.com/placebo>
5. "placebo." *Medical Dictionary for the Health Professions and Nursing*. 2012. Farlex 15 Apr. 2022 <https://medical-dictionary.thefreedictionary.com/placebo>
6. "placebo." *Collins Dictionary of Medicine*. 2004, 2005. Robert M. Youngson 15 Apr. 2022 <https://medical-dictionary.thefreedictionary.com/placebo>
7. placebo." *Collins Dictionary of Biology, 3rd ed.*. 2005. W. G. Hale, V. A. Saunders, J. P. Margham 15 Apr. 2022 <https://medical-dictionary.thefreedictionary.com/placebo>
8. placebo." *Gale Encyclopedia of Medicine*. 2008. The Gale Group, Inc. 15 Apr. 2022 <https://medical-dictionary.thefreedictionary.com/placebo>
9. "placebo." *Millodot: Dictionary of Optometry and Visual Science, 7th edition*. 2009. Butterworth-Heinemann 15 Apr. 2022 <https://medical-dictionary.thefreedictionary.com/placebo>
10. placebo." *Medical Dictionary for the Dental Professions*. 2012. Farlex 15 Apr. 2022 <https://medical-dictionary.thefreedictionary.com/placebo>

11. ^ Jump up to:^{a b c d} Shapiro AK (1968). "Semantics of the placebo". *Psychiatric Quarterly*. **42** (4): 653–95. doi:10.1007/BF01564309. PMID 4891851. S2CID 2733947.
12. ^ Kaptchuk TJ (June 1998). "Powerful placebo: the dark side of the randomised controlled trial". *The Lancet*. **351** (9117): 1722–5. doi:10.1016/S0140-6736(97)10111-8. PMID 9734904. S2CID 34023318.
13. ^ Jump up to:^{a b c d e f} de Craen AJ, Kaptchuk TJ, Tijssen JG, Kleijnen J (October 1999). "Placebos and placebo effects in medicine: historical overview". *Journal of the Royal Society of Medicine*. **92** (10): 511–5. doi:10.1177/01410768990201005. PMC 1297390. PMID 10692902.
14. ^ Jump up to:^{a b c} Hróbjartsson A, Gøtzsche PC (May 2001). "Is the placebo powerless? An analysis of clinical trials comparing placebo with no treatment". *The New England Journal of Medicine*. **344** (21): 1594–602. doi:10.1056/NEJM200105243442106. PMID 11372012.
15. ^ Jump up to:^{a b c} Kienle GS, Kiene H (December 1997). "The powerful placebo effect: fact or fiction?". *Journal of Clinical Epidemiology*. **50** (12): 1311–8. doi:10.1016/s0895-4356(97)00203-5. PMID 9449934.
16. ^ Psalms 116:9
17. ^ Jacobs B (April 2000). "Biblical origins of placebo". *Journal of the Royal Society of Medicine*. **93** (4): 213–4. doi:10.1177/014107680009300419. PMC 1297986. PMID 10844895.
18. ^ Nicholas D. Jewson (September 1974). "Medical Knowledge and the Patronage System in 18th Century England". *Sociology*. **8** (3): 369–385. doi:10.1177/003803857400800302. S2CID 143768672.
19. ^ Nicholas D. Jewson (1976). "The Disappearance of the Sick-Man from Medical Cosmology, 1770–1870". *Sociology*. **10** (2): 227. doi:10.1177/003803857601000202. S2CID 144097257.
20. ^ Beauregard M (2012). *Brain Wars: The Scientific Battle Over the Existence of the Mind and the Proof That Will Change the Way We Live Our Lives*. New York: HarperCollins Publishers. p. 21. ISBN 978-0-06-207156-9.
21. ^ Jump up to:^{a b c} Newman DH (2008). *Hippocrates' Shadow*. Scribner. pp. 134–59. ISBN 978-1-4165-5153-9.
22. ^ Booth C (August 2005). "The rod of Aesculapios: John Haygarth (1740-1827) and Perkins' metallic tractors". *Journal of Medical Biography*. **13** (3): 155–61. doi:10.1258/j.jmb.2005.04-01. PMID 16059528.
23. ^ Haygarth J (1800). "Of the Imagination, as a Cause and as a Cure of Disorders of the Body; Exemplified by Fictitious Tractors, and Epidemical Convulsions". Bath: Crutwell. Archived from the original on December 15, 2013.
24. ^ Graves TC (1920). "Commentary on a case of Hystero-epilepsy with delayed puberty". *The Lancet*. **196** (5075): 1135. doi:10.1016/S0140-6736(01)00108-8. Retrieved January 2, 2014.
25. ^ Yapko MD (2012). *Trancework: An Introduction to the Practice of Clinical Hypnosis*. Routledge. p. 123. ISBN 978-0-415-88494-5.
26. ^ Gaston de Lévis, *Souvenirs et portraits, 1780-1789, 1813*, p. 240
27. ^ William Heberden, *Commentaries on the History and Cure of Diseases*, London, 1802, p. 40
28. ^ Armand Trousseau, *Dictionnaire de Médecine*, 1833 (page unspecified), as quoted in H. Bernheim, *Suggestive Therapeutics*, 1889 (page unspecified), quoted in "Competitive Problems in the Drug Industry", U.S. Senate hearings, 1968, p. 3008.
29. ^ Charles Murphy, "Guest blog", *Emergency Medical Journal*, March 30, 2014
30. ^ Donald L. Blanchard, Daniel M. Albert, "Historical Excerpts and Quotations Corner", American Academy of Ophthalmology, May 9, 2018
31. ^ Booth, C. (2005). "The rod of Aesculapios: John Haygarth (1740-1827) and Perkins' metallic tractors". *Journal of Medical Biography*. **13** (3): 155–161. doi:10.1258/j.jmb.2005.04-01. PMID 16059528.
32. ^ Haygarth, J., *Of the Imagination, as a Cause and as a Cure of Disorders of the Body; Exemplified by Fictitious Tractors, and Epidemical Convulsions Archived* December 15, 2013, at the *Wayback Machine*. Crutwell, (Bath), 1800.
33. ^ Wootton, David. *Bad medicine: Doctors doing harm since Hippocrates*. Oxford University Press, 2006.
34. ^ T. C. Graves (1920). "Commentary on a case of Hystero-epilepsy with delayed puberty". *The Lancet*. **196** (5075): 1135. doi:10.1016/s0140-6736(01)00108-8. Retrieved January 2, 2014.
35. ^ Michael D. Yapko (2012). *Trancework: An Introduction to the Practice of Clinical Hypnosis*. Routledge. p. 123. ISBN 9780415884945.
36. ^ Evans W, Hoyle C (1933). "The comparative value of drugs used in the continuous treatment of angina pectoris". *Quarterly Journal of Medicine*. Archived from the original on January 2, 2014. Retrieved January 2, 2014.

37. [^ Gold H, Kwit NT, Otto H \(1937\). "The Xanthines \(Theobromine and Aminophyllin\) in the treatment of cardiac pain". JAMA: The Journal of the American Medical Association. 108 \(26\): 2173. doi:10.1001/jama.1937.02780260001001. Archived from the original on May 19, 2011. Retrieved January 2, 2014.](#)
38. [^ Jellinek, E. M. "Clinical Tests on Comparative Effectiveness of Analgesic Drugs", Biometrics Bulletin, Vol.2, No.5, \(October 1946\), pp. 87–91.](#)
39. [^ Henry K. Beecher \(1955\). "The Powerful Placebo". Journal of the American Medical Association. 159 \(17\): 1602–6. doi:10.1001/jama.1955.02960340022006. PMID 13271123. S2CID 3173505.](#)
40. [^ Finniss DG, Kaptchuk TJ, Miller F, Benedetti F \(February 2010\). "Biological, clinical, and ethical advances of placebo effects". Lancet. 375 \(9715\): 686–95. doi:10.1016/S0140-6736\(09\)61706-2. PMC 2832199. PMID 20171404.](#)
41. [^ Beecher HK \(July 1961\). "Surgery as placebo. A quantitative study of bias". JAMA: The Journal of the American Medical Association. 176 \(13\): 1102–7. doi:10.1001/jama.1961.63040260007008. PMID 13688614.](#)
42. [^ Kennedy, W. P., "The Nocebo Reaction", Medical World, Vol.95, \(September 1961\), pp. 203–5.](#)
43. [^ Kaptchuk TJ \(1998\). "Intentional ignorance: a history of blind assessment and placebo controls in medicine". Bulletin of the History of Medicine. 72 \(3\): 389–433. doi:10.1353/bhm.1998.0159. PMID 9780448. S2CID 10931827.](#)
44. [^ Evans D \(2003\). Placebo: the belief effect. London: HarperCollins. ISBN 978-0-00-712612-5.](#)
45. [^ Hróbjartsson A, Gøtzsche PC \(January 2010\). Hróbjartsson A \(ed.\). "Placebo interventions for all clinical conditions". The Cochrane Database of Systematic Reviews. 106 \(1\): CD003974. doi:10.1002/14651858.CD003974.pub3. PMC 7156905. PMID 20091554.](#)
46. [^ Benedetti F \(March 1996\). "The opposite effects of the opiate antagonist naloxone and the cholecystokinin antagonist proglumide on placebo analgesia". Pain. 64 \(3\): 535–43. doi:10.1016/0304-3959\(95\)00179-4. PMID 8783319. S2CID 37893726.](#)
47. [^ Levine JD, Gordon NC, Bornstein JC, Fields HL \(July 1979\). "Role of pain in placebo analgesia". Proceedings of the National Academy of Sciences of the United States of America. 76 \(7\): 3528–31. Bibcode:1979PNAS...76.3528L. doi:10.1073/pnas.76.7.3528. PMC 383861. PMID 291020.](#)
48. [^ Doongaji DR, Vahia VN, Bharucha MP \(April 1978\). "On placebos, placebo responses and placebo responders. \(A review of psychological, psychopharmacological and psychophysiological factors\). I. Psychological factors". Journal of Postgraduate Medicine. 24 \(2\): 91–7. PMID 364041.](#)
49. [^ Hoffman GA, Harrington A, Fields HL \(2005\). "Pain and the placebo: what we have learned". Perspectives in Biology and Medicine. 48 \(2\): 248–65. doi:10.1353/pbm.2005.0054. PMID 15834197. S2CID 1037796.](#)
50. [^ Axtens, Michael \(August 8, 1998\). "Letters to editor: Mind Games". New Scientist.](#)
51. [^ E.g. see Gulf War Veteran Gets Placebos Instead Of Real Medicine Archived February 4, 2009, at the Wayback Machine or BehindTheMedspeak: Obecalp.](#)
52. [^ Hoffman GA, Harrington A, Fields HL \(2005\). "Pain and the placebo: what we have learned". Perspectives in Biology and Medicine. 48 \(2\): 248–65. doi:10.1353/pbm.2005.0054. PMID 15834197. S2CID 1037796.](#)
53. [^ Cochrane, Archie: Effectiveness and Efficiency: Random Reflections on Health Services. The Nuffield Provincial Hospitals Trust 1972, \(1972\) p. 31.](#)
54. Cabot RC. The use of truth and falsehood in medicine: an experimental study. Am Med 1903;5:344-9
55. Jefferson T. The Writings of Thomas Jefferson (edited by PL Ford, version 9). New York: GP Putnam's, 1898
56. Anonymous. Placebos. Med Rec 1885;27:576-7
57. Kaptchuk TJ. Powerful placebo: the dark side of the randomised controlled trial. Lancet 1998;351:1722-5 8
58. Handfield-Jones RCP. A bottle of medicine from the doctor. Lancet 1953;ii:823-5
59. Feinstein AR. Clinical Epidemiology. The Architecture of Clinical Research. Philadelphia: WB Saunders, 1985
60. <http://www.rcpe.ac.uk/cochrane>
61. McMahon CE. The 'placebo effect' in Renaissance medicine. J Am Soc Psychosom Dentistry Med 1975.
62. Kaptchuk TJ. Intentional ignorance: a history of blind assessment and placebo controls in medicine. Bull Hist Med 1998
63. Evans W, Hoyle C. The comparative value of drugs used in the continuous treatment of angina pectoris. Quartj Med 1933;26:311-38

64. The xanthines (theobromine and aminophylline) in the treatment of cardiac pain. JAMA 1937;108: 2173-9
65. Diehl HS, Baker AB, Cowan DW. Cold vaccines. An evaluation based on a controlled study. JAMA 1938;