ARTIST
WENHUI (WENDY) YU

OPINION

Homeopathy

Pseudo-Science or Effective Treatment?

doi:10.35493/medu.37.20

HANNAH SILVERMAN
Bachelor of Health Sciences (Honours) Class of 2023, McMaster University
Correspondance: silvermh@mcmaster.ca

ABSTRACT

One of the most controversial topics in healthcare is whether complementary and alternative medicine (CAM) can replace modern medicine. Homeopathy has become a popular form of CAM, and while it is generally regarded as safe, it has not been proven effective. Most scientific professionals mistrust homeopathy due to the lack of scientific rigour and credibility in studies that seek to analyze homeopathic practices; many argue that any positive outcomes may be attributed to the placebo effect. While homeopathy cannot replace conventional medicine, the therapeutic effects of homeopathic consultation addresses the impersonal nature of traditional medicine.

PART 1: HOMEOPATHY LACKS SCIENTIFIC BASIS AND SHOULD NOT REPLACE CONVENTIONAL MEDICINE

INTRODUCTION

Developed over 200 years ago by German physician Samuel Christian Hahnemann, homeopathy is a form of alternative medicine practice based on belief in "The Law of Similars" —the idea that a natural substance that causes symptoms in a healthy person can be used to cure the same symptoms in a sick person.[1] Several types of homeopathic treatments exist, ranging from auto-isopathy, whereby treatments for ailments stem from the patient's own body, to classical homeopathy, in which individualized natural remedies are given.[2] Physicians are wary of recommending homeopathy and other forms of complementary and alternative medicine (CAM) due to a lack of proven efficacy and long-term risk assessments.[3] As the trend towards distrust in the healthcare system and medicine increases, it is important that patients are aware of the risks of pursuing homeopathy in place of traditional pharmacological interventions.[4]

THE DILUTION EFFECT

There are several principles of homeopathy that contradict scientific ideology. One such principle is the dilution effect, wherein remedies that are more dilute have more potent effects. These remedies are prepared by diluting a mixture several times, shaking vigorously between each dilution.[5] Almost none of the original remedy remains at the end as the dilutions often fall below 1 mol/L, the scientifically determined limit for dilutions.[6] As such, any effects from these treatments would be implausible.[7] Hahnemann explained the discrepancy by stating that water is able to change structures to capture the "essence" of the diluted molecule.[8] Several studies have attempted to corroborate this claim using techniques such as magnetic imaging and thermoluminescence, but strong conclusions have not been reached.[9,10] Since this principle conflicts with scientific knowledge, it is hard for the medical community to consider such an effect to be possible, let alone effective. For this reason, homeopathy is often dismissed as "the ultimate fake," and "concentrated nonsense."[11,12] Unless convincing research emerges, there is no plausible reason that such heavy dilution would cause any effect whatsoever.

EFFECTIVENESS

Few studies have been able to demonstrate the positive effects of homeopathic remedies. One clinical trial review concluded that limitations on study quality and conflicting evidence demonstrate the overall lack of scientific credibility of homeopathic remedies.[13] A large area of interest for the potential usage of homeopathic remedies is in cancer pain relief. In a European survey, 35.9% of cancer patients reported using homeopathy or other forms of CAM.[14] However, a review on homeopathy showed that using this form of treatment in conjunction with chemotherapy did not

yield enough evidence of any clinical effect.[15] Overall, due to the lack of conclusive studies, there is insufficient evidence that there are any benefits of using homeopathic remedies.

RISK ASSESSMENT

While homeopathic treatment is generally regarded as safe, temporary negative effects, referred to by homeopaths as "aggravations," are sometimes seen in patients. These effects are justified by the notion that symptoms must first worsen in order to improve.[16,17] Although aggravations, which can depend on the treatment, are generally tolerable, adverse effects can emerge, including swelling, bleeding, abdominal pain, and rashes, with rare cases involving hospitalization.[18,19,20] These effects could stem from toxicity or allergic reactions to common homeopathic remedies, including low dilutions of heavy metals (e.g. arsenic, mercury).[18] The lack of regulations surrounding remedies also raises concern as the Food & Drug Administration regulates that any ingredient can be considered "homeopathic" and have remedial use.[21] When potential allergens, toxins, or heavy metals are involved in the preparation, the risk of adverse effects outweighs any possibility of benefits.

PART 2: CONVENTIONAL MEDICINE CAN LEARN FROM HOMEOPATHY

HOLISTIC ASPECT OF HOMEOPATHY

Despite the lack of scientific validity, homeopathy offers its patients something on which conventional medicine often falls short: personalized care. Patients who seek homeopathic treatment are attracted to the 'holistic' aspect. In contrast to the average of 15.7 minutes spent with primary care physicians, homeopathic patients receive longer individualized treatment, with the average length of an initial consultation being around an hour.[22,23] This type of personalized care, combined with overall distrust in pharmaceuticals, contributes to the rise in CAM usage worldwide.

INTEGRATING A PERSONALIZED APPROACH TO CONVENTIONAL MEDICINE

Despite the lack of credible scientific evidence, many patients still report benefits from homeopathy. A 2005 study published in The Lancet reviewed placebo-controlled studies on homeopathy, finding that in the vast majority of these studies, there was no significant difference between effects from homeopathic remedies and placebos.[24,25] Interestingly, another study found that upon homeopathic consultation, rheumatoid arthritis patients derived more clinical benefits compared to the standard of care.[26] As such, the healing effects that homeopathic patients experience stem mainly from the consultation. Potentially, if physicians integrated a personalized approach to their practice similar to the individualized care offered by homeopathy, the therapeutic outcomes attributed to homeopathy could be replicated.[27] A 2017 study which surveyed physicians in Zurich showed that half of those who prescribed homeopathic remedies did so not because they believed in homeopathy, but because they wanted to achieve other therapeutic effects. These effects include the placebo effect of the remedies and the healing effect of the consultation.[28] However, an ethical problem is posed when physicians deceive their patients by prescribing remedies that they do not believe provide any clinical effect. Although many reviews that favour homeopathy are selectively biased and do not prove effectiveness beyond non-specific therapeutic effects, better evidence can emerge if high quality and large-scale randomized controlled trials are performed.[29]

CONCLUSION

A high degree of scientific rigour is needed to determine whether homeopathic remedies are anything more than a placebo. Regardless, the popularity of homeopathy and its therapeutic effects suggest that physicians should try to appeal to the individualized needs of each patient. Although it would be unethical to recommend homeopathy if the physician does not believe in its effectiveness, conventional healthcare practitioners should be more open-minded towards integrating the holistic framework of homeopathic treatments to help patients feel a greater personal degree of care.

REVIEWED BY: DR. JAMES DOUKETIS

Dr. James Douketis is a professor in the Department of Medicine at McMaster University. He is the associate director of the clinical teaching unit at St. Joseph's Hospital and works as a staff physician at St. Joseph's Hospital for clinical thromboembolism and general internal medicine services. His research interests center on thromboembolism and antithrombotic therapy.

EDITED BY: NURI SONG & NICK TELLER

1. Homeopathy Center. *What is Homeopathy?* [Internet]. 2017. Available from: https://www.homeopathycenter.org/what-is-homeopathy [cited 2019 Nov 26].
2. Mathie RT, Ramparsad N, Legg LA, Clausen J, Moss S, Davidson JRT, et al. Randomised, double-blind, placebo-controlled trials of non-individualised homeopathic treatment: Systematic review and meta-analysis. *Syst Rev.* 2017;6(1):63. Available from: doi:10.1186/s13643-017-0445-3.
3. Bellavite P. Homeopathy and integrative medicine: Keeping an open mind. *J Med Person.* 2015;13(1):1–6. Available from: doi:10.1007/s12682-014-0198-x.
4. Armstrong K, Rose A, Peters N, Long JA, McMurphy S, Shea JA. Distrust of the health care system and self-reported health in the United States. *J Gen Intern Med.* 2006;21(4):292. Available from: doi:10.1111/j.1525-1497.2006.00396.x.
5. Jonas WB, Kaptchuk TJ, Linde K. A critical overview of homeopathy. *Ann Intern Med.* 2003;138(5):393–9. Available from: doi:10.7326/0003-4819-138-5-200303040-00009.
6. Homeowatch. *Homeopathy's "Law of Infinitesimals"* [Internet]. 2002 Mar 20. Available from: https://www.homeowatch.org/basic/infinitesimals.html [cited 2019 Dec 1].
7. Grimes, D.R. Proposed mechanisms for homeopathy are physically impossible. *Focus Altern Complement Ther.* 2012;17(3):149–55. Available from: doi:10.1111/j.2042-7166.2012.01162.x.
8. Sagar SM. Homeopathy: Does a teaspoon of honey help the medicine go down? *Curr Oncol.* 2007 Aug;14(4):126–7. aAvailable from: doi:10.3747/co.2007.150.
9. van Wijk R, Bosman S, van Wijk E. Thermoluminescence in ultra-high dilution research. *J Altern Complement Med.* 2006;12(5):437-43. Available from: doi:10.1089/acm.2006.12.437.
10. Aabel S, Fossheim S, Rise F. Nuclear magnetic resonance (NMR) studies of homeopathic solutions. *Br Homeopath J.* 2001;90(1):14-20. Available from: doi:10.1054/homp.1999.0458.
11. Quackwatch. *Homeopathy: The Ultimate Fake* [Internet]. 2016 Aug 25. Available from: https://www.quackwatch.org/01QuackeryRelatedTopics/homeo.html [cited 2019 Nov 26].
12. Office for Science and Society - McGill University. *Homeopathic Dilutions Amount to Concentrated Nonsense* [Internet]. 2018 Apr 19. Available from: https://www.mcgill.ca/oss/article/quackery/homeopathic-dilutions-amount-concentrated-nonsense [cited 2019 Nov 26].
13. Mathie RT. Controlled clinical studies of homeopathy. *Homeopathy.* 2015;104(4):328-32. Available from: doi:10.1016/j.homp.2015.05.003.
14. Molassiotis A, Fernández-Ortega P, Pud D, Ozden G, Scott JA, Panteli V, et al. Use of complementary and alternative medicine in cancer patients: A European survey. *Ann Oncol.* 2005;16(4):655–63. Available from: doi:10.1093/annonc/mdi110.
15. Milazzo S, Russell N, Ernst E. Efficacy of homeopathic therapy in cancer treatment. *Eur J Cancer.* 2006;42(3):282-9. Available from: doi:10.1016/j.ejca.2005.09.025.
16. Thompson E, Barron S, Spence D. A preliminary audit investigating remedy reactions including adverse events in routine homeopathic practice. *Homeopathy.* 2004;93(4):203-9. Available from: doi:10.1016/j.homp.2004.07.007.
17. Stub T, Salamonsen A, Alraek T. Is it possible to distinguish homeopathic aggravation from adverse effects? A qualitative study. *Forsch Komplementarmed.* 2012;19(1):13-9. Available from:doi:10.1159/000335827.
18. Posadzki P, Alotaibi A, Ernst E. Adverse effects of homeopathy: A systematic review of published case reports and case series. *Int J Clin Pract.* 2012;66(12):1178-88. Available from: doi:10.1111/ijcp.12026.
19. Farrell J, Campbell E, Walshe J.J. Renal failure associated with alternative medical therapies. *Ren Fail.* 1995;17(6):759-64. Available from: doi:10.3109/08860229509037644.
20. Kerr HD, Yarborough GW. Pancreatitis following ingestion of a homeopathic preparation. *N Engl J Med.* 1986;314(25):1642-3. Available from: doi:10.1056/NEJM198606193142512.
21. Federal Register. Homeopathic Product Regulation: *Evaluating the Food and Drug Administration's Regulatory Framework After a Quarter-Century; Public Hearing* [Internet]. Federal Register. 2015. Available from: https://www.federalregister.gov/documents/2015/03/27/2015-07018/homeopathic-product-regulation-evaluating-the-food-and-drug-administrations-regulatory-framework [cited 2019 Nov 26].
22. Jain A. Does homeopathy reduce the cost of conventional drug prescribing?: A study of comparative prescribing costs in general practice. *Homeopathy.* 2003;92(2):71-6. Available from: doi:10.1016/S1475-4916(03)00004-3.
23. Tai-Seale M, McGuire TG, Zhang W. Time allocation in primary care office visits. *Health Serv Res.* 2007;42(5):1871-94. Available from: doi:10.1111/j.1475-6773.2006.00689.x.
24. Shang A, Huwiler-Müntener K, Nartey L, Jüni P, Dörig S, Sterne JA, et al. Are the clinical effects of homoeopathy placebo effects? Comparative study of placebo-controlled trials of homoeopathy and allopathy. *Lancet.* 2005;366(9487):726-32. Available from: doi:10.1016/S0140-6736(05)67177-2.
25. Ernst E. Is homeopathy a clinically valuable approach? *Trends Pharmacol Sci.* 2005;26(11):547-8. Available from: doi:10.1016/j.tips.2005.09.003.
26. Brien S, Lachance L, Prescott P, McDermott C, Lewith G. Homeopathy has clinical benefits in rheumatoid arthritis patients that are attributable to the consultation process but not the homeopathic remedy: A randomized controlled clinical trial. *Rheumatol Oxf Engl.* 2011;50(6):1070-82. Available from: doi:10.1093/rheumatology/keq234.
27. Prousky JE. Repositioning individualized homeopathy as a psychotherapeutic technique with resolvable ethical dilemmas. *J Evid-Based Integr Med.* 2018;23. Available from: doi:10.1177/2515690X18794379.
28. Swiss Medical Weekly. *Beliefs, endorsement and application of homeopathy disclosed: A survey among ambulatory care physicians* [Internet]. Available from: https://smw.ch/article/doi/smw.2017.14505 [cited 2019 Nov 26].
29. Ernst E. Homeopathy: What does the "best" evidence tell us? *Med J Aust.* 2010;192(8):458-60. Available from: doi:5694/j.1326-5377.2010.tb03585.x.