

Revealing the Risks of Alternative Medicine

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Alternative healthcare is growing in popularity, but like all healthcare, the use of such therapies is not risk-free. Dr Bernie Garrett of the University of British Columbia, Canada, works with colleague Professor Timothy Caulfield from the University of Alberta, to provide a voice of reason in the world of alternative medicine. While trying to understand what makes people choose these options, they are also shedding light on the risks associated with using such unconventional treatments.

A Safe Option?

Alternative healthcare, sometimes referred to as 'complementary' or 'traditional' medicine, encompasses a wide range of different treatments and therapies, including Acupuncture, Homoeopathy, Reiki, Chiropractic, Herbal Medicines, and Nutritional Supplements. The prevailing belief among the public is that alternative healthcare is safe with minimal risks, yet there is a dearth of evidence regarding its actual risks.

Over the last twenty years, there has been substantial growth in the alternative healthcare industry within economically advanced nations. This expansion has sparked research into the drivers and factors influencing its adoption. No longer confined to a niche market, the alternative healthcare industry has evolved into a significant economic sector.

Dr Bernie Garrett is based at the University of British Columbia, Canada, whilst his colleague Professor Timothy Caulfield is Research Director at the Health Law Institute at the University of Alberta. They collaborate to share knowledge and insights into complementary and alternative medicine while working to identify the associated risks. They are also interested in exploring the individual personality traits and demographics associated with a higher likelihood of someone opting for alternative medicine.

A Booming Industry

Garrett and Caulfield highlight that in the USA alone, more than \$30 billion was spent on alternative therapies in 2016, with 17% of Americans having tried an alternative therapy during that year. Garrett adds that in Canada, where he is based and carries out most of his research, about 70 to 80% of the population report having used an alternative therapy on at least one or more

The range of therapeutics that largely originate from traditions and theories distinct from contemporary biomedical science, and which claim mechanisms of action outside of those currently accepted by scientific and biomedical consensus.

occasions in 2016, spending over \$8 billion. He adds that research suggests that globally, the alternative medicine and healthcare market will be worth an astonishing \$210 billion by 2026.

They note that alternative medicine use may be helpful, or even just benign – at best. However, there is a worrying move towards more people engaging in potentially dangerous alternative health behaviours, like choosing experimental or unsafe therapeutics or opting for alternative practices in preference to effective medical treatments. Garrett highlights a recent study carried out at Yale that revealed how cancer patients choosing alternative healthcare instead of conventional medicine experienced elevated mortality rates. He also notes instances of highly hazardous alternative health practices receiving attention in news headlines, like the case of an Alberta couple whose son tragically succumbed to meningitis following treatment with natural remedies. Although the level of risk associated with healthcare, in general, can be challenging to quantify, clinicians must strike a balance between the intended positive outcome and any potential harm, supported by up-to-date knowledge and a firm evidence base. This is not always the case in alternative medicine.



Identifying Risks: The Delphi Process

There has been little research investigating the risks linked with opting for alternative healthcare. Dr Garrett, Professor Caulfield, and colleagues set out to identify and classify the risks associated with alternative therapies in Canada. In 2020, they conducted a Delphi study where they utilised the skills of 17 healthcare and legal experts comprising of physicians, nurses, pharmacists, physiotherapists, social workers, lawyers with expertise in harm, injury and case law, an epidemiologist, a chiropractor, and a naturopath. They then categorised the distinct types of alternative healthcare practices into four groups: herbal and nutritional interventions, physical manipulative interventions (such as Reflexology and Chiropractic), mind-body interventions (like Hypnotherapy and Tai Chi), and alternative health or medicine belief systems (such as Homoeopathy and Traditional Chinese Medicine).

Once the team had established their panel of experts and grouped the alternative healthcare practices, they searched all the major electronic databases for legal cases, media reports, and journal articles that mentioned harm associated with the alternative therapies. They then compiled a list of the main types of harm, which the experts then reviewed, and after several rounds of analysis (the Delphi process), they were able to categorise the risks.

Not Without Risk

The team created a new functional definition of alternative healthcare and a taxonomy, a classification, of the risks. They grouped types of harm as direct (such as harm resulting from an alternative healthcare procedure) or indirect (resulting from

replacing established medical care with an alternative therapy). They also assigned levels of risk as higher, moderate, or lower. They identified four major risk categories linked to the different types of alternative practice as well as general risks, such as the use of untested therapies or those that conflict with medical care.

Their report identified a considerable number of risks linked to alternative healthcare. Some serious adverse events were uncovered, including major physical injuries and even death. As Dr Garrett explains, there is a lack of a systematic method for recording adverse events in alternative medicine, which makes gathering data on the frequency of such events exceedingly difficult. He stresses that it is vital for people who engage with alternative healthcare to understand that it is not without risk, and that they should be clearly aware of what the risks might be.

Who Chooses Alternative Medicine, and Why?

In further research, the team explored why some people chose to engage in alternative medicine and explored the implications for healthcare regulations and policy. Their study built on previous work on risk-associated alternative healthcare (RAAH) research. They carried out surveys to gather information about the characteristics of people who choose RAAH using several established psychometric tests: Control Beliefs Inventory (CBI), Reward Responsiveness Behavioural Activation System (RBAS) scale, Positive Attitudes to Science (PAS) scale, Satisfaction with Orthodox Medicine (SOM) scale, and the brief version of the Susceptibility to Persuasion-II (StP-II-B) scale – all which have been used in previous studies in predicting RAAH behaviours. They surveyed 2,253 members of the public (aged 16 years and over) and discounted 761 surveys that had missing information, meaning they had a final total of 1,492 respondents for analysis.



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Several factors were found to influence RAAH, including age, gender, education, income, employment, ethnicity, and chronic illness status. The team reported that engagement with some forms of RAAH was quite common (at about 40% of those who were surveyed), with the most popular types of RAAH adopted being herbal remedy or supplement use, and physical manipulations. Around 5% of the respondents partook in higher-risk alternative healthcare activities, including dangerous physically invasive procedures and using known toxins.

Predicting Behaviours

The team reported that some of the psychometric tools they used were more useful than others. The StP-II-B and PAS instruments allowed prediction of the likelihood of a person choosing to engage with RAAH, highlighting factors such as a desire for novelty, a higher risk tolerance, and a positive attitude to advertising and social media. They found that the other tests, namely CBI, RBAS, and SOM, whilst not predictive overall, were still useful. The SOM and CBI tests were predictive of engaging with physically manipulative alternative therapies, and the RBAS was linked to herbal and nutritional supplementation use.

The team also noted that their study was the largest and most comprehensive investigation to date into alternative healthcare and risk in Canada. They identified engagement with RAAH as a significant health concern and propose that it highlights the importance of supporting evidence-based health policy and practice.

Dr Garrett explains that understanding how best to identify and educate members of the public on the significant risks linked to some alternative therapies is vital to health promotion. These findings can usefully inform health professionals' understanding of health-seeking behaviours when it comes to risk, as well as public debate about the use of RAAH.

What is the Future of Alternative Therapies?

Alternative healthcare is often considered a safe, natural, and harmless option. It is clear this is not always the case. Serious injuries and fatalities can – and do – occur with alternative healthcare, just as they do with conventional medicine. Dr Garrett explains the potential to cause harm comes in many different forms, the most apparent being direct damage from a particular therapy, like a side effect from taking a herbal pill, but also less obvious harm, such as a supplement interacting with a cancer medication to make it less effective, or delaying conventional treatment leading to a worsening of a treatable condition. There are also other forms of harm, such as economic harm, when someone spends money on a treatment that is ineffective.

The work of Garrett, Caulfield, and colleagues highlights that there is still a lot of work to be done in terms of understanding risk in the ever-growing field of alternative healthcare. More insights are needed, especially into the use of alternative medicine in children. However, as the recording of adverse effects and harm remains largely unregulated, this is an ongoing challenge for researchers.

MEET THE RESEARCHERS



Dr Bernie Garrett, School of Nursing, University of British Columbia, Vancouver, Canada

Dr Bernie Garrett completed a degree in Geography and became a Registered Nurse in 1987. He pursued a career as a renal Clinical Nurse Specialist, later becoming a nurse educator and researcher. He also holds a PhD in Information Science and a Postgraduate Certificate in Education. He is the Associate Director and Professor at the University of British Columbia (UBC) School of Nursing. In 2000, he received the College of Registered Nurses of BC Award of Excellence in Nursing Education and, in 2007, the Spencer Award for Information Technology Innovation. In 2013, he became the Elizabeth Kenny-McCann Nursing Education Scholar at UBC, and in 2014, the CASN Pat Griffin Nursing Education Scholar. He is also an Inaugural Fellow of the Canadian Nurse Educator Institute. Dr Garret has authored numerous papers and textbooks on health and nursing science, and is a frequent speaker at academic and public events, often contributing to popular media. His current research focuses on health science and deceptive healthcare practices, and he is the author of the critically acclaimed popular science book *The New Alchemists: The Rise of Deceptive Healthcare*.

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Professor Timothy Caulfield works in the Faculty of Law and the School of Public Health at the University of Alberta, where he is also the Research Director of the Health Law Institute. In 2002, he became the Canada Research Chair in Health Law and Policy and held this position for over two decades. He has received numerous academic and writing awards, and is a Member of the Order Canada and a Fellow of the Royal Society of Canada, the Canadian Academy of Health Sciences, and the Committee for Skeptical Inquiry. He has authored two national bestselling books and published nearly 400 academic articles. Professor Caulfield is the co-founder of the science engagement initiative #ScienceUpFirst, and the host and co-producer of the award-winning documentary *A User's Guide to Cheating Death*, featured on Netflix. His work focuses on topics such as research ethics and public health, and his most recent publication is *Relax, Dammit!: A User's Guide to the Age of Anxiety*.

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FURTHER READING

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