

The potential impact on survival from alternative cancer therapies

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Credit: Cancer Research UK

Patients have the right to decide what treatment, if any, they want to have. But it's incredibly important that the decisions people make are based on accurate information, allowing them to weigh up the pros and cons of the treatment options before them.

But where can patients get this accurate information? Search the

internet, and you'll find trustworthy, evidence-based sources (like our web pages and the NHS website). But you'll also quickly land on many promises of miracle cancer cures. While there's often no scientific evidence to back many of the miracle claims made online, counter arguments put forward by those selling or advocating for alternative therapies often state that 'there's no evidence to say they don't work either'.

Proving that something definitely doesn't work is much harder than showing something does. We've written several articles questioning the claims behind [alternative treatments](#), conspiracy theories, and the harms that alternative therapies can cause patients.

In this post, we're using 'alternative' to describe treatment that's used instead of conventional medicine.

Now, a researcher in the US has taken a step towards collecting robust evidence to measure the harm of alternative [therapy](#). And the numbers he has calculated have helped put an estimate on the negative impact alternative therapies might be having on survival.

'This was personal for me'

Radiotherapy specialist Dr Skyler Johnson, from Yale, began digging around the harms of alternative therapies for cancer after his family was directly affected.

"It was during my second year of medical school when my wife was diagnosed with Hodgkin lymphoma," says Johnson. "Despite the fact I was training to be a doctor, I did what many [people](#) probably do. I was curious and searched the internet."

Johnson was shocked by the amount of lies, misinformation, and to use a

popularly coined phrase 'fake news' that his search generated.

"Thankfully my wife had great treatment – conventional medicine – and made a full recovery," he says. "But it left me wondering, if I, as a doctor, felt taken aback by all the promises of miracle treatments, how do other people cope when facing the same situation? So this research was personal for me."

As a cancer specialist, Johnson had a first-hand account of some of the problems alternative therapies were causing patients. It often meant people were "self-treating" symptoms and delaying their cancer diagnosis, or refusing cancer treatments that "we know work", he says.

The key point here is that those cases are anecdotes from individual patients, which isn't the same as robust evidence that alternative treatments are causing harm.

'The data was there, I just needed to analyse it'

On top of his clinical training, Johnson spends weekends and evenings engrossed in his passion – using Big Data to find factors that have an impact on cancer survival. "The study took me 7 months to a year to complete. The data was there, I just needed to comb through and analyse it," he says.

Johnson used the [US National Cancer Database](#) as a source of information. The database is a collection of patient records sent from more than 1,500 cancer hospitals across the US and includes more than 70% of all newly diagnosed cancer cases.

In this study, published this summer in the *Journal of the National Cancer Institute*, Johnson looked at the records of patients with one of the four most common US cancers – breast, prostate, lung, and bowel – that

hadn't spread. The doctors use codes to represent the treatments that patients have, and one of the codes is 'unproven treatments given by non-medical therapists'.

"To truly understand the impact of alternative medicine, we only included people who had unproven treatments and no conventional medicine at all," says Johnson. "Even if they don't return to hospital after their diagnosis, if they die from their cancer their death record is matched to their file, so we still have this information."

Among the millions of records, there were 281 patients who opted solely for what Johnson defined as alternative therapy.

Choosing alternative therapies reduces the chances of surviving cancer

"The figures show that patients who opt for alternative therapies and decline conventional treatments are 2.5 times more likely to die within 5 years of being diagnosed", says Johnson. "It's a huge reduction in the chances of survival."

Although there is already a big difference in survival, the effect of declining conventional treatment might be an underestimate because the study only followed patients for 5 years. Two of the four cancers analysed (breast and prostate) are often slow growing so the gap in survival may widen further over time.

When Johnson looked at cancer types individually, the results became more interesting. "For low and intermediate risk prostate cancers, choosing alternative therapy didn't have any impact. But many prostate cancers are slow-growing, plus a high proportion don't even need treating because they won't ever cause harm. So this actually makes perfect sense," he says.

"When it came to lung cancer, patients who opt out of conventional medicine are more than twice as likely to die within 5 years." And this small effect probably reflects lung cancer being so hard to treat; survival is poor even for patients who choose conventional treatment.

"But when we look at breast and bowel cancer, both of which have good survival due to effective treatments being available, patients who chose alternative therapies were over 5 times more likely to die from their cancer in the 5 years after their diagnosis," says Johnson.

As well as only having followed the patients for a short period post diagnosis, the data might also underestimate the full harms of alternative therapies because the records only capture patients' first treatment choice. Some people who chose alternative therapies at the beginning might have decided to return to conventional medicine if their disease worsened.

Lax legislation costs lives

When Johnson did some digging around the type of person more likely to opt out of conventional treatments, he found some interesting trends.

"Our analysis shows that patients opting for alternative therapies tend to be younger, female, in general better health, and have a higher income and level of education," says Johnson.

"Furthermore, they more often live in areas in the US where legislation is more favourable towards practices offering alternative therapies, for example the West coast. This indicates that certain states in the US really need to do more when it comes to regulating alternative therapy practices, which form a multi-billion dollar industry."

The growth of alternative, unproven therapies in regions of relative

affluence and high levels of education also points to a failure of education around science – a problem not unique to the US. Many people are not being empowered to critically analyse scientific or medical claims.

"In a 'post-truth era', the mountain of misinformation available is just serving to confirm some people's entrenched bias against big institutions, including medicine," Johnson thinks. "But it's my hope that studies like this can still reach and engage people who are unsure and seeking facts, and help them have better conversations with their doctors about their options."

Our advice regarding alternative therapies

This is only one study from the US tracking patients with 4 types of cancer over 5 years following diagnosis. We'll need bigger, longer studies to get a more reliable measure of the impact on survival for those who decline [conventional medicine](#).

But Johnson's research shows that for the cases in this study, choosing alternative therapy over conventional, evidence-based medicine reduced the chances of surviving.

"Cancer patients often go through a very difficult and emotional time," says Martin Ledwick, head information nurse at Cancer Research UK.

"Patients can feel like there is nothing in their life that they can still control, and deciding to refuse conventional treatment and opt for an [alternative therapy](#) can sometimes give them back a sense of control."

Doctors aim to be as truthful as possible with patients and give as much information as they can, so people with cancer can make informed decisions about what treatments they want to have. Sometimes this

means being honest about there being no guarantees that a treatment will work, or in some circumstances that the best that can be achieved is extra time.

"Even if a treatment works for 99% of people, there's still 1% who don't benefit. Cancer patients can, understandably, find this uncertainty hard to deal with," says Ledwick. "And for some people, the news their doctor gives them isn't what they want to hear. In these circumstances, it's understandable that claims made by those promoting alternative therapies might seem very beguiling."

It's [against the law](#) for individuals or companies to advertise any cancer [treatment](#) (whether proven to work or not) directly to patients in the UK. But the internet is global, and not all countries have similar regulations in place to protect patients from misleading advertisements. Unfortunately, this can leave the door open for some individuals and companies to exploit [cancer patients](#).

"Some people selling alternative therapies are out to make money and there's no proof their remedies work or, in some cases, are even safe," says Ledwick.

We've also written before about how the harm of alternative therapies extends beyond people's finances. It's the risk of postponing or declining [conventional treatments](#) that might otherwise prolong or even save a patient's life. It's the harm that can be caused by travelling overseas when ill, forgoing palliative care to ease pain and other symptoms, and loss of precious time that could be spent with loved ones.

Every patient has the right to decide what treatments to have. But we want people to make these decisions based on discussions with qualified health professionals and factual information, not from unsubstantiated claims lacking any scientific evidence to back them up.

More information: Skyler B. Johnson et al. Use of Alternative Medicine for Cancer and Its Impact on Survival, *JNCI: Journal of the National Cancer Institute* (2017). [DOI: 10.1093/jnci/djx145](https://doi.org/10.1093/jnci/djx145)

Provided by Cancer Research UK

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