

The Harm of So-Called Alternative Medicine

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So-called alternative medicine (SCAM) enjoys the reputation of being relatively harmless. However, this is incorrect; based on thirty years of research, it's clear that SCAM causes harm on several levels.

Harm Caused by the Therapy

Of the hundreds of different therapies that comprise SCAM, some (e.g., homeopathy, energy healing) are mere placebo treatments and thus unlikely to cause any direct harm (Ernst 2022). Others can cause adverse effects and complications that can be severe, sometimes even fatal. Examples of the latter category are:

- Chiropractic can cause death. My 2010 review summarized twenty-six fatalities after chiropractic spinal manipulations. The alleged pathology usually was a vascular accident involving the dissection of a vertebral artery (Ernst 2010).
- Acupuncture can cause injuries to thoracic and abdominal viscera, to the peripheral and central nervous systems, and to blood vessels. Deaths have also been recorded from pneumothorax and cardiac tamponade (Peucker et al. 1999).
- Herbal medicine can cause a wide range of adverse effects (Ernst 2004) and unwanted herb-drug interactions (Izzo and Ernst 2009).

As no effective post-marketing surveillance exists in SCAM, the incidence of adverse events after SCAM use is essentially unknown.

Harm Caused by Diagnostic Techniques

We tend to think of SCAM as consisting only of therapeutic measures and forget

that it also includes a range of diagnostic techniques largely unknown or ignored in conventional medicine. Examples are:

- Applied kinesiology
- Bioresonance
- Iridology
- Kirlian photography
- Live blood analysis
- Pulse diagnosis (in traditional Chinese medicine, or TCM)
- Radionics
- Tongue diagnosis (in TCM)
- Vega test

None of these methods are validated (Ernst and Hentschel 1995), and consequently almost all inevitably lead to false positive or false negative diagnoses. The latter could mean that a patient is given the “all clear” by the SCAM practitioner, while in fact being afflicted by a serious condition such as cancer, for instance. The harm might then consist in losing valuable time for treating the patient's condition early and successfully. In a worst-case scenario, this could hasten death. A false positive diagnosis means the patient is told by the SCAM practitioner that they have a disease, while in fact they are healthy. This is likely to cause anxiety and might be followed by a lengthy series of treatments that would cause harm to the patient's finances.

Harm Caused by the SCAM Practitioner

SCAM therapists can harm patients in multiple ways. Foremost, such harm occurs through the often-incompetent advice given by SCAM practitioners (Ernst and Schmidt 2002). This happens, for instance, if the practitioner recommends a treatment that is ineffective or significantly less effective than a comparable

conventional intervention. In these situations, the patient would suffer needlessly or might lose valuable time to cure their condition at an early stage.

Another scenario where poor advice of SCAM practitioners harms patients arises when they recommend to avoid conventional interventions. A relatively well-researched example is the advice many SCAM practitioners issue about vaccinations (Schmidt and Ernst 2003).

A further way SCAM practitioners regularly cause harm is through diagnosing one of the many conditions that do not even exist. These include:

- Adrenal fatigue
- Candidiasis hypersensitivity
- Electromagnetic hypersensitivity
- Multiple chemical sensitivity
- Vertebral subluxation
- Yin/Yang imbalance

Typically, a fake diagnosis is followed by a series of prolonged and costly treatments. Eventually, the SCAM practitioner claims the condition has been cured. In some instances, harm might also occur through the way a practitioner arrives at a fictitious diagnosis. An example is the notorious overuse of X-rays by chiropractors to diagnose subluxations (Williams et al. 2024).

Most SCAM professionals medicalize normal states of reduced well-being. Many everyday health impairments have no real disease value but are merely short-term disturbances of optimal health. For many SCAM practitioners, such problems serve as occasions to boost their income. They inflate such trifles into serious illnesses that require treatment. In other words, they medicalize trivialities in such a way that:

- A low mood always represents clinical depression
- An upset stomach mutates into dangerous gastritis
- Temporary tiredness must be “chronic fatigue syndrome”
- A cold signifies the beginning of pneumonia
- A food aversion points to a food intolerance

It seems obvious that such scare mongering can cause anxiety and unnecessary costs to the patient and healthcare system.

Harm Caused by the SCAM Industry

Even though most SCAM products are not effective, the SCAM industry boasts of phenomenal financial success. The size of the worldwide SCAM market is thus projected to expand from \$147.7 billion in 2023 to approximately \$1489.4 billion by the year 2033 (Pharmiweb 2024). The harm here obviously consists in the money consumers pay for SCAM. This is even more relevant because healthcare budgets are notoriously tight, and the money spent on SCAM would be better invested in medicine that is proven to do more good than harm.

A further harm that is caused specifically by the TCM industry is exploitation of nature to a point where certain species might become extinct (Ernst 2018). Examples of species endangered by the SCAM industry include: black bear, musk deer, rhinoceros (for their horns), seahorse, shark, and tiger.

Harm Caused by Poor SCAM Research

Much of the research conducted in SCAM is unreliable. Several investigators have shown, for instance, that Chinese studies of TCM invariably report positive results (Tang et al. 1999). Others have reported that 80 percent of Chinese clinical trials are fabricated (Man and Mudie 2016). Much of SCAM research is of deplorable methodological quality. We have demonstrated that most SCAM journals carry almost no reports of negative findings (Ernst and Pittler 1997) and that numerous researchers of SCAM only publish positive results (Ernst 2024a). Collectively, these phenomena mean that SCAM gradually but surely undermines the public’s trust in science

(Ernst 2024b).

Harm Caused by Ideology

SCAM proponents systematically undermine rationality by promoting fallacious thinking (Ernst 2013). Examples include the following notions that are popular in the realm of SCAM:

- Experience trumps science
- Reductionistic thinking is wrong
- Intuition is better than evidence
- Nature knows best
- Ancient wisdom must be respected
- The medical establishment is against SCAM
- “Big Pharma” is the enemy

It seems obvious that undermining rational thought in these ways can cause harm on the societal level. This was perhaps most succinctly formulated by Voltaire: “Those who can make you believe in absurdities can make you commit atrocities.”

Conclusion

So-called alternative medicine is regularly being promoted as gentle and safe. This notion, though false, is an excellent sales gimmick. Even though the risks of SCAM are generally under-researched, it is indisputable that they do exist and that SCAM can cause harm on multiple levels.

Proponents of SCAM often counter that conventional medicine can cause much more harm than SCAM. But this refutation misses an important point: The value of any treatment is not determined by either the harm or the benefit it generates; *it depends crucially on the balance between the harms and the benefits it can produce.*

As the benefits of SCAM are often only marginal or entirely absent, even relatively minor risks count heavily. It follows that the risk-benefit balance of much of SCAM fails to be positive. In turn, this means that consumers should think twice before they use or recommend SCAM. ■

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