

Relationship of Science to Health Sciences

Science is an objective, logical and repeatable way of asking questions and investigating answers. Although it may seem tedious and boring at first, when proper scientific attention is focused on a problem, the answer can be accepted as correct or true. This is because the conclusions provided by the research are backed up by multiple scientists working to provide the best possible information. Imagine how much scarier it would be if your physician didn't use medicine or medical techniques that were researched in this way.

Science is a process that involves a structured way of researching a problem called the scientific method. Or, science can be done through the examination of evidence, much as crime scene investigators collect evidence to solve a crime.

Pseudoscience (also called fringe or alternative science) is when a person or organization tries to trick people into accepting a thought or conclusion as science, by using science-like ideas, words or tools. In pseudoscience, these thoughts or conclusions do not stand up to the high standards required by science. Often, this is done by using attractive, superficially acceptable ideas or by appealing to our preconceived ideas in order to make money or elevate that importance of the person providing the information.

So what does this have to do with health care? We need to know with complete confidence that a medicine or treatment has been thoroughly tested, before we trust the money and lives of our clients with these treatments. For instance, a Google search for the term "herbal remedies" yielded 15,100,000 web sites, including everything from drinking Australian Emu (the ostrich-like bird) oil for sore muscles and joints to human urine which may be used for a variety of things, from allergies to diabetes to cancer. Would you give urine to a sick patient? Would you drink it yourself?

I hope you answered no to both questions! However, don't discount all herbal medicines as being pseudoscience. Many of the drugs we take today are directly derived from plants. For instance, aspirin is made from the roots of the Willow tree. Digitalis is a powerful drug that causes the heart to contract more forcibly and is derived from the foxglove plant. Taxol is used to effectively treat some types of cancer, yet is made from a shrubby plant called a Yew.

So what separates taxol from urine as a treatment? The fact that taxol has been rigorously tested by experts in chemistry and medicine who then published their results in medical journals for other researchers to copy. Urine as a treatment may have been used for hundreds of years, but there is no evidence collected by legitimate scientists that shows it is effective in treating disease.

As a result, it is important for health care workers to understand a little about what science is in order to make sure that their patients receive the best, most rigorously tested treatments available.