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Importance of Some Traditional Medicinal Plants on Human Health

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ABSTRACT: For centuries across countries, people have turned to traditional healers, home remedies and ancient medicinal knowledge to address their health and well-being needs. According to the WHO Global Report on Traditional and Complementary Medicine (2019), various systems of traditional medicine being used around the world include acupuncture, herbal medicines, indigenous traditional medicine, homeopathy, traditional Chinese medicine, naturopathy, chiropractic, osteopathy, ayurvedic and Unani medicine. And one hundred and seventy WHO Member States have reported on the use of traditional medicine by their populations.

KEYWORDS: traditional, medicinal, human, health, importance

I. INTRODUCTION

Traditional medicine is sometimes seen as pre-scientific, its practices and treatments to be replaced by modern, better, more efficient science-based medicine. What is less known, however, is its contribution to modern science and medicine, and a long history of traditional products and practices being translated into effective treatments for health conditions.

Around 40% of pharmaceutical products today draw from nature and traditional knowledge, including landmark drugs: aspirin, artemisinin, and childhood cancer treatments. A closer look at these drugs reveals that the scientists behind them built off traditional knowledge to achieve their breakthrough discoveries.[1,2,3]

Tapping nature and indigenous knowledge to advance modern medicine

After testing – unsuccessfully -- over 240 000 compounds for use in antimalarials, Chinese scientist Tu Youyou, head of the Project 523 to discover a cure for chloroquine-resistant malaria, turned to traditional Chinese medical literature for clues. There, she and her team found a reference to sweet wormwood to treat intermittent fevers. In 1971, Tu Youyou's team isolated artemisinin, an active compound in sweet wormwood that was particularly effective in treating malaria. Artemisinin is now recommended by the World Health Organization as the first and second line of treatment for malaria. In 2015, Tu Youyou was awarded the Nobel Prize in Physiology or Medicine for her work on malaria, which has saved millions of lives.

Willow bark as the basis of aspirin is another example of how nature and traditional knowledge have contributed to modern medicine. Over 3 500 years ago, bark from the willow tree was used as a pain reliever and an anti-inflammatory, by Sumerians and Egyptians. In later years, it was used to ease the pain of childbirth in ancient Greece and cure fevers. In the 1897, Bayer chemist Felix Hoffmann synthesized aspirin and the drug has gone on to improve, and save, the lives of millions of people every day – with multiple benefits including preventing heart attack or stroke, improving blood pressure, and relieving pain and swelling.[4,5,6] Aspirin is now one of the most used drugs in the world.

Aside from sweet wormwood and willow bark, the Madagascar periwinkle, hawthorn, foxglove, star anise and wild Mexican yam have contributed to medical breakthroughs including childhood cancer medicines and contraceptive pills. The Madagascar periwinkle, which is now the source of childhood cancer drugs vinblastine and vincristine has an



exceptionally long history of being used as a medicinal plant and finds mention in Mesopotamian folklore, the Ayurveda system of traditional Indian medicine as well as traditional Chinese medicine. Medicinal plants like hawthorn and foxglove have been used to treat cardiovascular disease and hypertension. Other examples include: shikimic acid that is drawn from star anise and used in the manufacture of Tamiflu, antiviral medication that blocks the actions of influenza virus types A and B in the body; and norethindrone, derived from the wild Mexican yam, that is one of the first active ingredients in contraceptive pills.[7,8,9]

II. DISCUSSION

Modern medicine has built on what nature has to offer and has drawn upon traditional systems of knowledge of how these medicinal plants, herbs, roots, and bark were wielded to cure diseases across civilizations.

Leveraging ancient practices to eradicate global diseases

In addition to learning from how ancient cultures tapped natural resources for health, we have also looked to traditional community-based health practices for answers to modern diseases. The development of the smallpox vaccine in this global health success story is one such example.

One of the deadliest diseases known to humans, smallpox remains the only human disease to have been eradicated. Over thousands of years, smallpox killed hundreds of millions of people around the world. Today's vaccine for smallpox draws from the principle used in the ancient practice of variolation, where material from smallpox sores were transferred to healthy people, resulting in milder forms of illness. Ancient practices of variolation date back to as early as 200 BCE, with records of it being widely used in Asia and some parts of Africa.

In 1721, Lady Mary Wortley Montagu observed the Turkish folk practice of inoculation among Greek and Armenian women, and successfully inoculated her own child against smallpox. This practice was also used in Persia, China, India and other countries. Similar accounts of enslaved West Africans in American colonies inoculating themselves against smallpox brought much needed attention to this ancient practice. Over time, through extensive testing, the traditional practice of inoculation was shown to effectively protect against smallpox—resulting in a widely used smallpox vaccine and ultimate eradication of this disease.[10,11,12]

Yoga and acupuncture are also examples of traditional healing practices that have been successfully used to address chronic health issues. Dr Susan Wieland, co-chair of the WHO Traditional Medicine External Advisory Group and Director of Cochrane Complementary Medicine, notes how “evidence from over 20 clinical trials indicates that yoga is effective in improving pain and back-related function in chronic non-specific lower back pain. The same holds true for acupuncture when it comes to pain relief.” Thus, research data underscores the value of these ancient practices that have gained popularity around the world, in modern times.

III. RESULTS

In another example, Dr Wieland talks about how exposing babies with jaundice to sunlight—a timeless ayurvedic practice—corresponds to the modern medical treatment of phototherapy: "we now understand the mechanism of why this (exposure to sunlight) is effective, how it converts bilirubin into an unconjugated form that can be excreted — so, we now have a different understanding of why it works. But traditional medicine understood that it did work."

Expanding knowledge through new technologies

Where else can traditional and Indigenous knowledge of the world around us guide the discovery for the health and well-being of the people and the planet?

With remarkable and rapid modernization of the ways traditional medicine is being studied, new technologies and technological innovation could show the way and provide a deeper understanding of the tangible benefits of traditional medicine.



Artificial intelligence (AI) is emerging as a game-changer, revolutionizing the study and practice of traditional healing systems. AI's advanced algorithms and machine learning capabilities allow researchers to explore extensive traditional medical knowledge, mapping evidence and identifying once elusive patterns and trends.[13]

IV. CONCLUSION

Functional magnetic resonance imaging (fMRI) has enabled the study of brain activity and measuring of relaxation responses of individuals engaged in traditional practices of yoga and meditation, which people around the world increasingly use for their mental health, stress management and overall well-being. Taking clues from traditional uses, new clinically effective drugs can be identified through research methods such as ethnopharmacology and reverse pharmacology.

It is an exciting time in research about traditional medicine products and practices, which are increasingly used by people around the world. With increased use comes more research and more evidence to establish what works and what doesn't. And the research looks really promising.[14,15]

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