The Pseudoscientific Characteristic of Traditional and Alternative Medicines

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Abstract

This paper exposes the pseudoscientific characteristic as well the moral issue of traditional and alternative medicines in the Philippines by employing philosophical critical inquiry. Critical philosophical inquiry questions reality, looks for contradictions and is change or action-oriented.Specifically, this paper answers the following questions:'How traditional and alternative medicines are perceived and received by Filipinos?''Do traditional and alternative medicines fall under the category pseudoscientific using the Falsifiability Theory of Karl Popper?'and 'What are the underlying moral issues regarding the pseudoscientific characteristic of traditional and alternative medicines? Discussions like these are necessary in order to detect fallacies, especially, in how traditional and alternative medicine information is communicated through product advertising, practices and the media, which is significant for consumers in making right decisions.

Keywords: traditional and alternative medicines,pseudoscience, falsifiability theory and philosophy of science

1.0 Introduction

The proliferation of many products under the category of traditional and alternative medicine in the market raises concerns regarding efficacy. How can the consumers be sure of the legitimacy of the claims of the products as it is being advertised in the media? This is a moral issue knowing that there are unscrupulous and enterprising people who are using 'traditional and alternative medicines' in order to gain money from hapless consumers. This moral issue should be discussed by considering scholarly thoughts from different fields including philosophy in order to shed light and expose anomalies. There is an urgency for such discussions knowing that all forms of media today are flooded by advertisements promoting products under traditional and alternative medicines. Karl Popper's philosophy of science is utilized in the discussion of this paper in order to bring out the pseudoscientific characteristic of traditional and alternative medicine. Popper is well-known for his *Falsifiability Theory* that can be aptly summarized in the statement, any claim that does not give room for falsification is considered pseudoscientific. Furthermore, scientific claims are provisionary conjectures that remains valid until falsified. The researcher argues that traditional and alternative medicines as they are advertised in the market today is very difficult, if not impossible to falsify hence they fall under pseudoscientific category.

The Pseudoscientific Character

Pseudoscience includes all claims/theories that pretend to be scientifically valid, but actually

do not conform to the strict standards that scientific theories are expected to fulfill."What pseudoscience utterly lacks, however, is the critical spirit and the robust empirical support that are characteristic of genuine science" (Pavic 2013). Pseudoscience is a concept influenced by Karl Popper as he embarked to address the challenge of making a definitive demarcation of science from pseudoscience. In 1962, Popper was able to develop his *Theory of Falsifiability* as a consequence of his endeavor. Even until today the demarcation problem is still a significant issue knowing that numerous papers are being published in this regard (Nickles 2006, Pennock 2009, Hansson 2008, 2009, Pigliucci 2010).

This paper, however, is neither up to demarcating science from pseudosciencenor questioning or confirming the efficacy of traditional and alternative medicines instead whatever significant knowledge gained after the long course of the demarcation project will be utilized to pose questions with the purpose of emancipation against oppressive systems andpromotion of good life in the society.

Traditional and Alternative Medicines

Republic Act No. 8432 or the "Traditional and Alternative Medicine Act (TAMA) of 1997" defines traditional and alternative health care as "the sum total of knowledge, skills and practices on health care, other than those embodied in biomedicine, used in the prevention, diagnosis and elimination of physical or mental disorder." Likewise, World Health Organization defines traditional medicine as

> Diverse health practices, approaches, knowledge and beliefs incorporating plant, animal, and/or mineral based medicines, spiritual therapies, manual techniques and exercises applied singularly or in combination to maintain well-being, as well as to treat, diagnose or prevent illness (WHO 2002)

In many ways, traditional medicine is the totality of knowledge, skills and practice on health care that cannot be explicitly explained in a scientific framework but its impact in maintaining health and wellness has been recognized by the society to be reflective of their culture, history and social consciousness. It uses various terms such as herbal and/or traditional drug, herbal medicine, traditionally used herbal products and herbal supplements which include food supplements(Robles *et al* 2012).

Why people use traditional and alternative medicines?

Literature have varied answers why people use traditional and alternative medicines. Reasons, sometimes, are very interesting like for example the trends that surfaced out in the study of Nazrul Islam in the urban slum of Balubad, Marikina City.

> Firstly, poor people usually visit or choose the alternative healers, and the rich rely on modern medicine. In other words, economic affordability and the level of modern education make a difference in healer choice. Secondly, after the failure of alternative healing practices, poor people go to the modern physician. However, it is also evident in some cases that after the failure of a modern doctor, patients got the alternative healers, albolarios for spiritual healing or herbal remedy, even when they have modern education and money (Islam 2005).

On the other hand, Management Sciences for Health has four answers to the question 'Why People Use Traditional and Complementary Medicines' and they are Accessibility, Affordability, Perceived Safety, Potential for treating disease (Falkenberg 2012).In our country, accessibility and affordability are the main reasons why people are attracted to traditional and alternative medicines especially in a situation wherein "1 physician per 800 community members (or 1 physician per 80,000 in some municipalities)"(Kadetz 2009).Furthermore, traditional and alternative medicines are perceived safe due to its natural components "natural means safe" though it is not necessarily true (WHO 2004). In addition, a local study revealed that the most common reason why people turn to traditional and alternative medicine is that they cannot afford the costs of conventional medicine and finally,Filipinos are drawn towards traditional and alternative medicines after they are recommended by friends and relatives(Dahilig*et al*, 2012).

I would like to argue that people resort to traditional and alternative medicines after hearing testimonies of healing experiences from friends and relatives. Aside from word of mouth, media have played major roles in broadcasting testimonies. Like for example, it is usual to see nowadays herbal supplement advertisements focused on the testimonials of costumers who have positive feedbacks regarding the efficacy of the product sold. By the way,testimonies are also known in the field of science as anecdotal evidences. In this regard, anecdotal evidences serve as proofs of traditional and alternative medicines' efficacy.

Presentation of the anecdotal evidences are anomalous as they are not in conformity with the Department of Health Administrative Order no. 184 series of 2004. Traditional and alternative medicines are supposed to base their efficacies on traditional experience of long usage which should be at least five (5) or more decades as documented in medical, historical and ethnological literature. Anecdotal evidences that are available in media are shortcuts of the supposed long history of recognition regarding the effectiveness of a certain traditional or alternative medicines. Furthermore, anecdotal evidences are merely based on intuitive experiences of the specific costumer for their use of the product without any scientific testing or methods of validation. Moreover, anecdotal evidences are very difficult to argue or even disprove as "thinking anecdotally comes naturally, whereas thinking scientifically does not" (Shermer 2008).The compelling allure of personal testimony is one of the most seductive sources of information. For example, when a friend shared that her cancer disappeared after taking a certain herbal supplement out in the market is a powerful convincing factor to use the same. Somehow, stories involving a real person is more convincing than results of studies based on thousands of anonymous participants. By the way, anecdotal evidences are usually based on individual experiences or observations, as distinct from probabilistic evidences that give estimates of how likely somethings are to occur based on experience with large number of people.

Finally, "anecdotal evidence tends to be overwhelmed by confirmation bias, and a host of cognitive biases so that they will appear to support whatever we [especially the person sharing] believe or wish to believe" (Novella 2012). This is akin to Karl Popper's *Oedipus Effect*or "to describe the influence of a theory or expectation or prediction upon the event which it predicts or describes: it will be remembered that the causal

chain leading to Oedipus' parricide was started by the oracle's prediction of this event" (Popper 1962). The *Oedipus Effect*[1] is shown in the plot of the myth in terms of how the words or the prediction of the oracle influenced the behavior of the characters in the story. The predicted destiny was believed by the characters to be true that is why their actions followed accordingly to the predictions. In the end the words of the Oracle was realized. The Oedipus effect can be likened to our convictions wherein finding proofs is not so much a challenge. Karl Popper wanted to do away with the Oedipus effect especially in the field of science. Science for Popper is not looking for confirmations instead he wanted falsifiability. The aim of science is not to prove theories rather falsify them and in the event replace them by better theories. Falsification is the main aim of science because there is no way to test every possible experience to validate the confirmation. For example, the proposition 'All swans are white' is true not because we have observed that swans are in fact white instead we have not seen so far a black swan. "[N]o matter how many instances of white swans we may have observed, this does not justify the conclusion that all swans are white" (Popper 1959).

The Falsifiability Theory

Popper is distinctively different as he emphasizes the value of theoretical falsifiability over verification. He believes that theories in order to qualify as scientific need not only be verifiable but falsifiable as well. Genuine science then is prohibitive and forbidding in nature, which implies that it is testable and falsifiable but never logically verified.In order to elucidate the point further, it is good to look into the considerations done by Sir Karl Popper regarding the theories of Marxism, Freudian Psychoanalysis and Adlerian psychology.

> I [Karl Popper] found that those of my friends who were admirers of Marx, Freud, and Adler, were impressed by a number of points common to these theories, and especially by their apparent explanatorypower. These theories appear to be able to explain practically everything that happened within the fields to which they referred. The study of any of them seemed to have the effect of an intellectual conversion or revelation, open your eyes to a new truth hidden from those not yet initiated. Once your eyes were thus opened you saw confirmed instances everywhere: the world was full of verifications of the theory. Whatever happened always confirmed it. Thus its truth appeared manifest; and unbelievers were clearly people who did not want to see the manifest truth; who refuse to see it, either because it was against their class interest, or because of their repressions which were still "un-analyzed" and crying aloud for treatment (Popper 1962, 34-35).

The common factor among the three theories is the incessant stream of confirmations which verify the theories in question. The fact that theories provide evidence of verification does not give it more credence rather the fact that it is always confirmed in the eyes of their admirers is a manifestation of weakness.

The arguments of Sir Karl Popper are best exemplified by the contrast of Einstein's theory and those of Marx, Freud, and Adler. The relativity theory of Einstein was already established theoretically but it lacked empirical verification and without it the theory would be rejected as improbable.

Fortunately, Eddington's expedition in 1910 was able to verify the claims of Einstein. Had the result of Eddington's expedition was different, Einstein theory would be dismissed. The significant element that Popper wanted to emphasize in this particular experience was the risk of possible rejection of the theory without the support of empirical verification and Einstein willingness to embrace the possibility that his theory, theory of relativity in this case, would be rejected. Thus in 1919 Popper concluded that the critical attitude, which does not look for verifications but rather looks for crucial tests that can refute the tested theory, is the correct attitude for science, even though the crucial tests can never establish the theory. This is Popper's falsificationist philosophy of scientific criticism, the central thesis of his philosophy of science.

In order to understand the distinctive Popperian philosophy of science it is best to look into the summary of the significant points he asserted in seven propositions he formulated in the book *Conjectures and Refutations*.

1. It is easy to obtain confirmations, or verifications, for nearly every – if we look for confirmations.
2. Confirmations should count only if they are the result of *risky predictions*; that is to say, if, unenlightened by the theory in question, we should expected an event which was incompatible with the theory – an event which would have refuted the theory.
3. Every "good" scientific theory is a prohibition: it forbids certain things to happen. The more a theory forbids, the better it is.
4. A theory which is not refutable by any conceivable event is non-scientific. Irrefutability is not a virtue of theory (as people often think) but a vice.
5. Every genuine test of a theory is an attempt to falsify it, or to refute it. Testability is falsifiability; but there are degrees of testability: some theories are more testable, more exposed to refutation, than others; they take as it were, greater risks.
6. Confirming evidence should not count except *when it is the result of a genuine test of the theory*; and this means that it can be presented as a serious but unsuccessful attempt to falsify the theory.
7. Some genuine testable theories, when found to be false, are still upheld by their admirers – for example by introducing ad hoc in such a way that it escapes refutation. Such a procedure is always possible, but it rescues the theory from refutation. Such a procedure is always possible, but it rescues the theory from refutation only at the price of destroying, or at least lowering, its scientific status. (Popper 1962, 37-39)

The Popperian demarcation of pseudo-scientific from the scientific one is not the only standard available but relatively it is simple and suited in the purpose of exposing the pseudoscientific characteristic of traditional and alternative medicine. The fact that these products are sold with a label 'No Therapeutic Claim'; how can the efficacy claims based on anecdotal evidences of the many traditional and alternative medicines sold in the market be falsified?Nevertheless, even if traditional and alternative medicines are pseudoscientific but it does not imply that these products are useless and ineffective. As it was argued in the earlier part of this paper, traditional and alternative medicines are resorting to anecdotal

evidences, which are difficult if not impossible to falsify. This is an issue that should be looked into knowing that costumers are in a difficult situation especially regarding their safety after taking the said medicines. Besides, what is the assurance of the costumers as they spend their money in buying traditional and alternative medicines. Of course, it is very naïve to entertain any thought of a medicine that its efficacy is beyond question.

The Pseudoscientific Characteristic of Traditional and Alternative Medicine Issue

The issue over the pseudoscientific characteristic of traditional and alternative medicine is not only conceptual after doubts were raised concerning the efficacy of the many products sold under this category. In fact, the controversy has even caused government to respond and implement measures after several calls for the traditional and alternative medicine industry regulation.

In the article "Is It Really Medicine? The Traditional and Alternative Medicine Act and Informal Health Economy in the Philippines" Roger Lee Mendoza has a very good point "[T] he legalization and professionalization of TCAM [traditional and alternative medicine] will inevitably involve testing and validation"(Mendoza, 2009). Moreover,Pedrito de la Cruz and Alana Gorospe Ramos recommend "the need for studies that will enable government – as the guardian of health and safety – to act towards the folkloric-commercial sector especially with this sector's use of the media in promoting commercial products like dietary supplements, or in propagating beliefs that have no sound foundation" (de la Cruz *et al* 2006). Aware of these challenges, Philippine government promulgated certain "national standards for certain TM/CAM [traditional and alternative medicines] practices and practitioners governed by PITAHC [Philippine Institute of Traditional and Alternative Health Care] (specifically the scope of practice for acupuncture, acupressure, and tui-na); the Bureau of Food and Drug (for herbs); and the Department of Health (for regulation of Traditional Birth Attendants and Massage Therapists/Reflexologists" (Kadetz2009, 13).

However, there are still lots of things to do in order to better the regulation of the proliferation of traditional and alternative medicine. WHO prescribed 10 Strategic Actions for Members State and number 8 fits the objective of this paper that is "Identify how T&CM [traditional and alternative medicine] information is communicated through practitioners, product advertising, practices and the media"(WHO 2014, 48). This aspect is very significant as it ensures the safety of the consumers not only in terms of the quality of the product they bought but especially regarding information necessary for them to make right decision whether to trust traditional and alternative medicines or go for conventional scientific approach of healing.

The proliferation of many advertisements and promotional activities about traditional and alternative medicines in different media raise concerns regarding which among the many are accurate and those that are not. Another significant characteristic common among the many advertisements is their massive reliance on anecdotal evidence, which is an issue raised in the early part of this paper. Is there a room for falsification when dealing with anecdotal evidence? Previous discussions concluded that there is none and this is an issue that needs to be addressed properly knowing that anecdotal evidence influence the decision making of the

user/consumer. Without an assurance, the user/consumer is at the mercy of the seller that could take advantage anytime.

2.0 Conclusion

Traditional and alternative medicines have always been popular in the Philippine culture (Jocano 1973, Tan 1996). Moreover, the fact that many people today suffer ailments for which appropriate treatment would require a lot of resources or remedies from medical science can do little due to worsening condition traditional and alternative medicines continues its relevance. Peoplein desperate situation would risk to resort towards treatments even with unwarranted claims. What is more appalling is the fact that there are people who are trying to cash in and exploit their situation for financial gains. Indeed, the pseudo-scientific characteristic of traditional and alternative medicine is a moral and ethical issue. It needs to be exposed and discussed in order to raise awareness and eventually clarify the real score of traditional and alternative medicine business.

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(Endnotes)

1 In order to understand the point of Popper, it is better to go back to the myth itself. The story begins when a child is born to King Laius and Queen Jocasta of Thebes. But the happy parents received warning from an Oracle at Delphi that the child brings bad omen to the family. The bold prediction said that the child is destined to kill his father and marry his widowed mother. Alarmed by the negative message of the Oracle the parents decided to send the newborn child to the mountainside and fastened the infant's feet together with a large pin thinking that the child would not be able to survive. However, the child was found by the shepherds and called the baby boy Oedipus or 'swollen foot.' The baby was then brought to Corinth. In Corinth King Polybus and Queen Merope adopted and raised the child like their own son. When Oedipus grew older somebody told him that he was not the

son of King Polybus and Queen Merope. Full of confusion Oedipus went to Delphi to ask the Oracle about his real parents. Unexpectedly, he received an answer telling him that you are the man fated to murder your father and marry your widowed mother.

Like Laius and Jocasta, Oedipus was determined to avoid the destiny predicted for him. Believing what the oracle had said, he vowed never to return to Corinth instead he headed towards Thebes. Along the way, Oedipus came to a narrow road between cliffs where he met an older man in a chariot coming the other way. The two began to quarrel over regarding who should give way. The conflict resulted to a fierce fight that Oedipus killed the stranger after which he continued his journey to Thebes. Actually, Oedipus was unaware that the stranger he killed was his real father Laius. Upon reaching Thebes, Oedipus learned about the Sphinx devouring the people after the Thebans were unable to give a correct answer to the riddle "What walks on four legs in the morning, two at noon and three in the evening?" Oedipus gave the correct answer: "A human being, who crawls as an infant, walks erect in maturity, and leans on a staff in old age." With this correct answer, Oedipus not only defeated the Sphinx, which killed itself in rage, but won the throne of the dead king and the hand in marriage of the king's widow, Jocasta who happened to be his biological mother. Hence, the Oracle's prediction was realized.