

## Letters to the Editor

Cite this article as: Bishehsari F, Nayernouri T, Eivazi-ziaei J, Vaez J, Hamed-Barghi G, Azizi MH. Letter to the Editor. *Arch Iran Med.* 2014; **17(6)**: 461 – 464.

### Practice of Sense and Nonsense in the Medicine; a Critique of Traditional Medicine, Readers' Views

**Note:** Presented here are the comments of one of the respected *Archives of Iranian Medicine* readers regarding the article published in the journal as Vol. 16, No.12, December 2013, *Sense and Nonsense in the Practice of Medicine* by T. Nayernouri, MD, FRCS.

#### Editorial Board

##### Dear Editor,

I read with interest the article published in the AIM on criticizing the traditional medicine by Dr. Touraj Nayernouri.

The author, who is quite familiar with the history of traditional medicine, has shown concerns with regard to the traditional medicine for several reasons, some of which are summarized as follows:

1) It is deemed irrational to practice a medicine that stems from beliefs and theories that are proven to be false by advancements over the recent history. An example is given on the misunderstanding of circulation in the old time. In this letter I try to emphasize that observations that are gathered throughout centuries of science should not be readily discarded only because the proposed mechanisms by the observant were incorrect.

2) The author presents instances from variety of the scientific fields (e.g. physics, chemistry, mathematics, medicine and astronomy) to prove that “looking back” in science, is a “step backward”. I would not necessarily agree with this view as is discussed in the following paragraphs.

3) It is appropriately emphasized that the roots of “Islamic traditional medicine” are not from religious beliefs, and that many non-Islamic scholars from pre-Islamic era have contributed to the field. As is discussed further, I would argue that this actually only acts in the favor of the “traditional medicine”, and has enriched it with the perspectives and observations made by innumerable scientists and philosophers throughout the history.

I agree that no one should accept the incorrect anatomical view of circulation that “bright blood contained by the arteries is produced in the heart and darker blood is produced in the liver and carried by the veins”. Nevertheless, the interest in the topic and historical efforts to uncover the anatomy of circulation should have provided scientists in different areas with some background, and prompted further research in this regard until William Harvey could elegantly show the circulation phenomenon.

Similarly, the concept of controlled trials that is the cornerstone for measuring drug efficacy and safety in the modern medicine, was well described by Ibn Sina, who himself elaborated on the concept that was proposed by his preceding scientists. [Daly WJ, Brater DC “Medieval contributions to the search for truth in clinical medicine”. *Perspect. Biol. Med.* 2000. 43 (4): 530–40.] [Sajadi MM, Mansouri D, Sajadi MR. Ibn Sina and the clinical trial. *Ann Intern Med.* 2009 150(9):640-3.]. Although their definition of controlled trials may have had some deficiencies compared to

our current one, we shall agree that Ibn Sina and his antecedents deserve credit for this matter.

This is just a sample of endless examples that attest to the cumulative nature of the knowledge that forms by discoveries during the history of mankind.

However, the science is an ever-growing field and our understanding of our body and our surroundings is evolving on a daily basis. Until a few years ago, nobody questioned the “one gene-one protein” hypothesis that has been the basis for explaining various diseases. Upon the discovery of splicing phenomenon, we know that one gene, through immediate posttranslational alterations, can result in splice variants that may have a completely different function than the original protein, hence development of the “one gene-many polypeptides” hypothesis. In some circumstances (e.g., cancer), the splice variants are even shown to be more important than the complete protein. But we are still practicing medicine, the same way, as we did in the era of “one gene-one protein”.

Therefore, I think “looking back” at previous scientific achievements, even if their concept of the mechanism was not fully correct, is not necessarily equivalent to going a “step backward”. In fact, it can enrich our perspective and give us clues that could be applied for taking stronger steps ahead of us. For example, stool transplantation has been recently proved effective for treatment of the recurrent *Clostridium difficile* infection and is proposed to have potentials for use in various other pathologies. Interestingly, the use of stool transplantation as “yellow soup” for diarrheal diseases was first documented in China more than 1500 years ago. Up until a few years ago, if somebody brought the idea of feeding or transplanting a person with feces of another person, he/she would gain nothing but a loud laughter from the scientific community. Practical science is, indeed, full of surprises. It took us many centuries until we have come to -partially- understand the mechanisms of an observation that the Chinese made more than thousand years ago. Medical observations are from case scenarios and experiences, and should not be disregarded solely because the mechanisms that had been proposed for the observation were incorrect.

It is well known that the roots of Iranian or Islamic traditional medicine can be found in the works of the Greek scholars. The Greek articles and approaches are frequently referred to by Iranian physician-scientists including Ibn Sina, Razi, and Jozjani. Science is shaped over time, and scientists at any given time contribute to the growth of knowledge also with the help of their antecedents' works. As such, it is not surprising to know that the Greek medicine and philosophy were greatly influenced by their predecessors in Egypt.

This cumulative nature of knowledge is rather reassuring, and is still happening around the globe but of course in a faster pace.

Iranian and Islamic scholars contributed to the advancements in the field of medicine (which at that time was tied closely with other scientific fields as well). Therefore, the fact that the traditional medicine is not entirely Iranian or Islamic, not only cannot

question its value but even gives it more credit. It indicates that the centuries of efforts, reflections, and observations should not be disregarded upon arrival of more tangible approaches and techniques in medicine.

In the pursuit of scientific and industrial progression, it may be easy for us to criticize anything linked with the tradition in a society that blames its lag in scientific achievement mainly on its links with the past, and in fact, is moving fast forward to embrace the “modernization”.

However, I think there are two separate elements with the traditional medicine that we should distinguish: firstly, the concept and its philosophy and secondly, its science. I completely agree that the science of traditional medicine (anatomy, physiology, biochemistry...) is outdated and not applicable anymore. However the philosophy behind it, and its associated approach, can still be a great resource to complement our deficiencies in the modern medicine, and may even give us a new angle to our practice of medicine.

This is not to ignore the unprecedented achievements offered by the modern medicine. I can't emphasize enough on how much the modern medicine improved the human life by preventing and treating deadly infectious diseases. Needless to say that, identifying microbes, and treating them with antibiotics were the most pronounced medical achievement in the past few centuries. Nobody can underestimate this progress, and surely it could not have happened if the medical science resisted moving along with other scientific fields after the renaissance.

Nevertheless, new medical issues have arisen as humans live longer, and as we experience a global growth in urbanization, lack of physical exercise and obesity. As a physician with a vested interest in cancer research, I would like to give an example of the evolution in cancer therapy. Primary medical treatment for cancer therapy has been based on cytotoxic drugs for chemotherapy for several decades. The nonspecific toxicity of these drugs, affecting both cancer and normal cells, usually results in intolerable side effects and compromised quality of life, and has called for more targeted therapies. Since 90s, the targeted therapies (e.g., monoclonal antibodies) have been invented to target critical pathways that are essential for the cancer cells' survival. Although these modalities may keep the cancer in check initially, pluripotency of cancer cells helps them escape the effects of these targeted modalities using compensatory pathways. As we learn that there is a great heterogeneity, not only between cancer patients of the same type, but also between cancer colonies within one patient, the scientists believe that for optimal treatment of each patient, his/her “cancer signature” (genetics, epigenetics, proteomics, metabolomics...) should be mapped first. Although, currently, this seems far from being practical, an “individualized medicine” has been proposed as the ideal approach to treat each patient with advanced cancer. In this view, we won't treat the disease anymore, but we treat the individual; a paradigm shift from the mainstream approach which had been taken in “modern medicine” to treat diseases and not the individual. This view, although initially proposed for therapeutic approaches in cancer, has now extended to treat other complex debilitating and chronic diseases that are on the rise (i.e. inflammatory conditions including inflammatory bowel disease, connective tissue disorders...). Isn't this approach exactly what was proposed by “traditional medicine” for centuries that the individual, and not the disease, should be managed and treated?

I can't interpret the doctrine of Naturals, and do not have the

insight to fully understand the philosophy behind the origin and fate of the bodily humors in “traditional medicine”. But I know that traditional medicine believes that human being can maintain its healthy state if the humors are in balance, hence there is an emphasis on diet, lifestyle, sleep, and other environmental risk factors. Also in traditional medicine, the organs are all considered as a whole and not as separate entities. This is also in line with our growing understanding of cellular biology and immunology thanks to the new biomedical technologies. For example, the gastrointestinal tract, the largest interacting organ with our surrounding environment is now proposed to be the initial trigger for a variety of pathologies not only in the GI tract (e.g., IBD) but also in other organs (e.g., hepatic encephalopathy, severe multi-organ failure pancreatitis, autoimmune diseases/connective tissue disorders, Alzheimer, multiple sclerosis, and many others). To support the importance of bodily balance, it is now well documented that many inflammatory cascades rev up once the homeostasis of the GI epithelium is disrupted. To support the importance of food in our overall health, many dietary factors, in interaction with the host genetic factors, can change the inflammatory milieu of the GI tract, and thus, would have a great influence on GI homeostasis and downstream pathways. The effect of circadian disruption (and lack of sleep) on several diseases, through alteration in metabolic and inflammatory pathways, is being heavily investigated. These are just a few examples of the elements that are used in the process of healing in traditional medicine and are increasingly shown by modern medicine to be important in maintaining our overall health, and contributing to the pathogenesis of the disease state once interrupted.

I agree that in the setting of lack of appropriate tools, the mechanisms of these interventions could not be dissected at that time, but cumulative observations through thousands of years led to approaches that may have been working, or else would have been discarded by subsequent scientists who didn't seem to be biased from the direct influence of their antecedents as frequently they appeared in geographically distant locations from one another.

I completely agree that we should not allow the “traditional medicine” to become a tool for making benefit of our suffering patients (although one can argue that the financial abuse are equally, if not more, occurring by those who practice modern medicine). However, we should at least allow our medical trainees and physicians, once have developed a solid background in the modern medicine and learned its basic scientific approach, to get an exposure to the philosophy underlying the traditional medicine whose elements are being re-discovered by modern medicine as discussed above.

Moreover, as also stated in the article, the traditional medicine with its emphasis on bodily balance can be a strong tool for “preventive medicine” which is the mainstay approach to lower the upcoming global burden of chronic diseases (e.g., obesity, coronary artery disease, diabetes, and cancer).

A one-sided view towards the alternative approaches in medicine (e.g., traditional medicine) is not constructive. Before we call any potential benefits that patient may experience from the traditional healing a “placebo effect” as stated in the article, we can at least allow them to be tested in a controlled fashion. Potential complementary effects of these alternative medicines can be at least tested in circumstances where the modern medicine is still imperfect, and the current standard treatments are limited. These circumstances are not uncommon in our daily practice: chronic pain, immune mediated diseases such as advanced asthma,

chronic urticaria, food allergy, complicated refractory inflammatory bowel disease, and others, to name a few. Even if they fail to achieve the end point of lengthening survival, they should be still considered as a complement if they result in a secondary end point of “better quality of life” in our patients.

The main criticism on the “dark ages” is on its intolerance of alternative thoughts that were different from the mainstream beliefs at the time, and not allowing them to be at least tested in an acceptable context. So isn't it better that we take a different approach now?

Finally, I am glad to see that we are discussing the “traditional medicine”, it maybe the time to try examining its potentials in a scientific manner, before fully discarding it

Faraz Bishehsari MD PhD  
Gastroenterology and Hepatology Division  
Northwestern University, Northwestern Memorial Hospital - Chicago, IL

### Reply,

There are certain points raised by my learned colleague which I feel I must address.

1) William Harvey's contribution to the circulation of blood (which was not complete until Malpighi demonstrated the microscopic capillaries connecting the arterioles to the venules) is far removed from the simple observation that bright blood is carried by arteries even though Aristotle and Hippocrates believed that the arteries and veins contained air or ‘pneuma’. In my article, I attempted to show that it took 2000 years of anatomical observation and theoretical refinements in order to arrive at a correct concept of the circulation of blood, having discarded many incorrect assumptions along the way.

2) Dr. Bishehsari writes that ‘the concept of randomized control trials’ was first described by Ibn Sina. It is true that Razi did carry out some controlled experimentation but I am not aware that Ibn Sina did.

The passage referred to as evidence is from book two of the Cannon titled ‘Al Adwiah Al Mofradah’ (simple basic drugs) in the second ‘Magalah’ (chapter) of his first ‘jumlah’ (section) wherein he writes: “The potency of drugs can be identified in two ways; one by ‘*qiyas*’ (comparison) and the second by ‘*tajribah*’ (experience)”.

The conundrum lies in the mistranslation of the word ‘*tajribah*’ as experiment rather than experience. Ibn Sina's description of ‘*tajribah*’ with regard to the properties of drugs which follows has nothing to do with ‘randomized control trials’. I refer Dr. Bishehsari to Book Two of the Cannon for the veracity of my statement.

3) Genetic theory is a relatively recent concept and gene splicing and control by microRNA's even more recent. Epigenetic influences on gene expression and the variability of phenotypic expression leading to the possibility of individualized medical treatment is in its infancy. I am also aware of recent advances in cancer therapy albeit not in a professional capacity, but I fail to grasp the relevance of these recent advances to the main argument of my article.

4) I state with relative confidence that any use of fecal transplantation in ancient Chinese medicine was not based on an understanding of the role of gut microbiota but was probably based on some superstitious ritual, common in ancient Chinese medicine, rather similar to the consumption of the brains of close relatives in

Papua New Guinea. This method of reasoning, common in ‘New Age’ philosophy has no grounding in scientific methodology.

5) It is an incorrect assumption that scientific knowledge progresses by incremental accumulation of ‘facts’. Science, in essence, is a method of describing objective reality within a rational system of model making in order to make that objective reality as comprehensible as our tentative theories allow. These theories can always evolve into more accurate models confirmed by experimental observations, but are never final ‘truths’ and can be improved or discarded when more recent observations contradict the tenets of our previous theories. These paradigm shifts, constitute scientific revolutions as described by Thomas Kuhn [and mentioned in my article] and have occurred several times in the progress of medical practice. To disregard these paradigm shifts and still cling to the Aristotelian Elements and Galenic Humors is what I have described as retrogressive in my article.

6) The philosophical principles underlying Traditional Medicine to which Dr. Bishehsari refers are twofold.

On the one hand, it relates to the practice of environmental and personal hygiene, as well as diet, exercise and rest which as I have mentioned are recommended by all medical traditions, especially Avestan medicine and is basically common sense.

Secondly, it is the concept of elements and humors which I have opposed on scientific grounds.

Touraj Nayemouri MD  
Iranian Academy of Medical Sciences, Tehran, Iran

### Dear Editor,

We have greatly enjoyed reading the article entitled “History of cancer in Iran” by M. H. Azizi, *et al* which was published in volume 16; number 10, 2013 issue of the “Archives of Iranian Medicine”. The authors presented important topics about history of cancer in different cities of Iran, but nothing was mentioned about Tabriz, the large city in the northwestern Iran. So, we present some notes about this matter.

Historically the academic activities in Azarbaijan, Iran started 16<sup>th</sup> December 1945. The initial university complex named as “*Tabrizin Tib facultas*” started functioning with 24 students at Daneshsara Square. After the 16<sup>th</sup> December 1946, this university was recognized as “Tabriz Medical College and Pharmacy” by the central government and continued its further academic activities. Dr. Mostafa Habibi Golpayegani was the first Dean of the faculty of medicine (medical college). He also had additional responsibilities such as managing anatomy hall and department of pathology. The cancer pathology as a general pathology courses were held with the collaboration of Tehran University teaching staff.<sup>1</sup>

In 1956, Professor Platner head of the Department of physiology from the Vienna Medical College (Germany), became the Dean of faculty of Tabriz medical college. Prof. Platner made great efforts to improve the teaching quality of pathology courses by inviting lectures from abroad. Later on, the French educated persons, especially Dr. Sayyed Jafar Ganjeizadeh and Dr. Arien actively promoted correlation between clinical and basic science of pathology subjects. So, the various cancers of the digestive system i.e., stomach, colon, lung and lymphomas were recognized.

Since 1958, the Faculty of Medicine employed a few residents of pathology for the first time in accordance with Tehran University's rules. Thereby, Dr. Vaseti, Dr. Mohammad Hossein Sadagiani and

Dr Yazdchi after getting especial training and achievement in this program were able to become faculty teaching members at the department of pathology, so in Azarbaijan, they had essential roles in cancer diagnosis.

In 1962, according to a scientific agreement between Tabriz and Paris Universities, Prof. Malvie 'a general surgeon', Prof. Duhriz 'a gastroenterologist', and Prof. Ahrozie 'an anatomist and general surgeon' started teaching on clinical aspects of the common types of cancers in Iran i.e. pancreatic cancer, hepatocellular carcinoma and osteogenic sarcoma to the students and clinicians in addition to teaching theoretical aspects of cancer.<sup>2</sup>

After 1963, with establishment of cancer registry office in Tabriz, the cancer cases were recorded on the basis of pathological diagnosis.<sup>3</sup>

From 1965 – 1971, surgeons like Dr. Abbas Nakhgovani, Dr. Majid Molavi and gastrointestinal cancer specialized persons such as Dr. Salehi and Dr. Abolfath Segatoleslami and Dr. Safi Amin as breast and thyroid surgeons and also most thoracic surgeons and urologists were active. The first center for cancer patients' diagnosis and treatment was established in 1981 at Shahid Ghazi hospital with the efforts of Dr. Sayyed Kazem Madaen during his vice chancellorship at Tabriz University of Medical Sciences and Dr. Jalil Vaez Gharamaleki.

Dr. Vaez was working enthusiastically on diagnosis and therapy of hematologic malignancies and solid tumors since 1971. He translated a book written by Broe S, *et al* entitled "Chemotherapy of Cancer" published by WHO: 1973. It was the first publication on cancer in Azarbaijan.<sup>2</sup>

With establishment of this center, all activities regarding cancer were well developed until the organization of hematology and medical oncology course was approved by Iranian Health Ministry in 1989. This center has currently 8 hematologist and medical oncologists and an approved research center that cancer diagnosis and chemotherapy, clinical and paraclinical researches, and fellowship courses as well as laboratory students teaching are attained in this center. Farmanfarmaian is the former name of the Tabriz Children Hospital, which has had the capability of diagno-

sis and treatment of pediatric malignancies since 1996.

The first radiotherapy department was provided using Cobalt instrument which was chaired by Professor Karim from Bangladesh. At the same time, Dr. Gholamali Hamed Bargi was trained by him as resident. After Professor Karim's departure from Iran, Dr. Nair and then Dr. Redy (both Indian radiotherapist) took the responsibility of the department. After them, Dr. Makhdoomi was the first Iranian radiotherapist who managed the patients. Dr. Hamed Bargi was the Head of the Cancer Registration (Sazeman-e-Mobareze-ba- Saratan) and Radiation Division at that time.

## Acknowledgement

*We would like to thank Dr. Rezazadeh and Sattari for reviewing the Letter.*

Jamal Eivazi-Ziaei MD•, J. Vaez MD, G. Hamed Bargi MD  
Hematology and Oncology Research Center, Tabriz University of Medical Sciences, jeziaei@yahoo.com. Tel: 0411 3343811

## References

1. History of Faculty of Medicine, Tabriz University of Medical Sciences. *Tarikhche-Taasis-e- Daneshkade-e-Pezeshki*; 1386: 11 – 14.
2. Invitation of Paris University's Academic members. Tabriz University's Archive; 1340.
3. Jalil Vaez, Squamous cell carcinoma of ethmoidal sinus and its chemotherapy. A case report. *Journal of Tabriz University of Medical Sciences*. 1368; 23: 82 – 92.

## Reply,

We read with interest the letter entitled "History of Cancer in Azarbaijan". We are grateful to the authors: J. Eivazi, *et al* for their valuable data regarding the contemporary historical background of cancer in northeastern Iran.

Mohammad Hossein Azizi MD  
Otolaryngologist, Iranian Academy of Medical Science, Tehran, Iran