

Traditional Medicine Diagnostic Codes in ICD-11 and Alternative Diagnostic Classifications in the Mainstream Healthcare

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Abstract

In 2018, the 11th Edition of the International Classification of Diseases (ICD-11) defined a diagnostic code list for standard traditional medicine (TM) conditions. The codes improve patient safety by providing more comprehensive and accurate medical records for hospitals in the Western Pacific Region. In these facilities, TM is often a standard of care for those populations. In several mainstream media sources, writers are circumventing evidence-based peer-reviewed medical literature by unduly influencing public opinion and, in this case, against the new ICD-11 codes. The dangers imposed by the transgression of popular writing onto the discipline of peer-reviewed works are present since best practices in medical record-keeping will fail without the inclusion of TM in the ICD-11 codes. Such failures directly affect the health of the patients and policymakers in regions where TM and conventional medicine are combined. This article investigates the boundaries between substantial evidence and popular opinion. In this era where media is used to manipulate evidence, the reader's use of sound judgment and critical thought are thwarted. This article also challenges three controversial themes in pop literature, including the threat to endangered species, increased patient risk, and contaminants in the TM. These themes are made without evidence and are, in fact, of flawed logic. There is no reason to assume that improved medical record-keeping and knowledge of patient cases increase risks.

Keywords: Endangered species, 11th Edition of the International Classification of Diseases (ICD-11), medical error, pattern differentiation, terminology study, traditional medicine

Introduction

The International Classification of Diseases (ICD) is a tool for organizing diseases into taxonomies that clarify ontological assumptions for described health conditions. Hospitals, clinics, and practitioners use these codes to define, quantify, and standardize human diseases.^[1-3]

Agencies, facilities, and practitioners use the ICD codes for research, billing,^[4,5] epidemiological statistics, plus morbidity, and mortality data.^[6] They improve medical terms used to describe circumstances, empirical observations, and to collect evidence. These provide an effortless implementation of disease classification for various needs in a clinical setting.

An international community of stakeholders from the US, Europe, Japan, Korea, and China has identified the need for a code set that captures actual practices.

The best medical practices include the record of all medical interventions on behalf of a patient. The 11th Edition of the ICD (ICD-11) codes provide a scaffold for communication about the various observations. They include a standard for describing actual practices in regions of the world, for which traditional medicine (TM) is, in fact, a standard of practice. The need to provide real data on these practices regarding morbidity and mortality exceeds the concerns conveyed regarding these practices in the popular literature, which are indigenous to significant portions of the global population.

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This unfounded controversy surrounding the ICD-11 codes for TM increases patient risk by failing to adhere to best practices regarding record-keeping. It would further impair research into the actual practices within the Asia regions, bringing a racial and ethnological bias to the discussion.

Criticism following the Inclusion of Chapter 26 in the Latest Edition of the International Classification of Diseases

In June 2018, the World Health Organization (WHO) announced the release of ICD-11, which, for the first time, contained codes for TM diagnoses.^[7,8]

Just before the adopting of the list by the Member States in May 2019, the news also appeared in relevant editorials in the *Nature*^[9] and the *Lancet*.^[2]

At the time of writing this article, no peer-reviewed publications systematically oppose developing the ICD-11 code set for TM. There have been some opinions that oppose the inclusion of the TM codes in the ICD11. As of this analysis, there were two articles in the academic literature that expressed negative sentiments. Nevertheless, they also lacked peer review and good quality evidence.^[10,11]

However, at the same time, as the publication of Chapter 26 (ICD-11-26) of the ICD-11, there was an unprecedented slandering campaign in business, politics, popular science magazines, social media, and other related platforms that influence popular opinion.

In an age where public opinion may be manipulated in such a way as to affect policy, it is vital to point out that a published personal declaration does not necessarily comprise evidence-based medicine (EBM). These authors often take arguments out of context that appears logical to the average reader. However, they are inflicting a distorted view on this project, which is composed of an international consortium of medical experts and scientists.

For example, one of the articles stated that the inclusion of ICD-11-26 would result in “a rise of deaths,”^[12] because according to the author, TM is a “fraud,” a “scam,” a “belief system,” and “an unscientific set of practices.” However, the appropriate way to verify this allegation is by looking at relevant statistics for TM and determining how many deaths by erroneous TM treatment occurred during a specified period while using error statistics for mainstream medicine as the point of reference for the same timeframe. However, it is unfortunate that all previous and current editions of the ICD were limited in codes for reporting human medical errors.^[13,14] Even in an era where medical errors are said to account as the third cause of death in the US,^[15,16] there is no

systematic collection of such data. Thus, it is difficult to make any meaningful comparison.

Among the bibliographies that we assessed on medical error, there appears to be a significant case study that discusses the death certificate related to a person who died from a needle left in the body during a surgical procedure.^[14] The reporting investigator describes how the compiler used a fraudulent code instead of identifying the medical error. Ominously, such failures of the adverse events reporting systems are common.

It is beyond the scope of this article to carefully examine “adverse events reporting systems.” However, the author touches briefly upon the doubt of how many deaths are unreported in the same way to manipulate the statistics. Unfortunately, although some medical error statistics for TM^[17,18] are available, there has never been a comparative study to conclusively expose the impact of both systems as a cause of death and irrefutably inform the public about the potential dangers of one over the other. Future editions of ICD may facilitate this process.

Facts and Fiction about International Classification of Diseases-11-26

ICD-11-26 states that it “is a subclassification for optional use” and that it “is not intended for mortality reporting. Coding should always include also a category from the chapters 1–24 of ICD.”^[19] The inclusion of TM codes in the ICD-11 will answer questions regarding real practices in all regions and countries.

Redefining the field: who would “optionally” be allowed to use the codes?

Traditional doctors in China are regarded as equivalent to conventional doctors, however, this is not so in other parts of the world.^[20-22] Given the number of TM schools recently removed from the World Directory of Medical Schools (WDMS),^[23,24] many TM graduates in the Western Pacific Region are ineligible to apply for medical licensure outside that specific geographic area. They could, however, apply for an acupuncture license in many countries around the globe.

The WDMS is a joint venture of the World Federation for Medical Education and the Foundation for Advancement of International Medical Education and Research.^[25,26] It is closely linked to the WHO, which is the same international body that lays down the ICD codes. Therefore, since the WHO indirectly has amended the way it regards TM education, policy worldwide may also be readjusted to redefine the field.

However, outside the Western Pacific Region, the ability to use the coding in ICD-11-26 will determine who is legally liable for producing the patient’s diagnosis according to

chapters 1–24 of ICD. For ICD-10 in the United States, current policy determines that “code assignment is based on the documentation by the patient’s provider (i.e. physician or other qualified healthcare practitioners legally accountable for establishing the patient’s diagnosis),”^[27] which in most states of America does not include TM practitioners.

Realistically speaking, besides the necessary legislation and policy changes, the adaptation of ICD-11-26 will require: (a) the US Centers for Disease Control and Prevention to create a new chapter for TM in their ICD Clinical Modification standard and (b) the insurance companies to create consistent billing and fee schedules for these codes. At this moment, it will take years for such an adaptation to be achieved. It is also uncertain how many countries will attest to the need for implementing ICD-11-26 into their established versions of the ICD codes. At present, it seems that many TM practitioners in the Western hemisphere are also very confused about the codes,^[28,29] something that is not necessarily a TM trait.^[30]

Therefore, at this time, we can conclude that the group targeted by ICD-11-26 only includes medical physicians with knowledge of TM in the Western Pacific Region. It is also challenging to define who will be eligible to utilize the ICD-11-26 list of codes in the Western hemisphere, if and when they get implemented.

Pangolin scales, *Aristolochia* roots, heavy metals, pesticides, and toxicity of traditional materia medica

The ICD-11-26 discussion should examine the diagnostic codes and categorize symptoms into an alternative model of correspondences. The ICD debate in popular literature often misses the public safety feature and the practice of designating diagnostic codes. It instead focuses on the extinction of several animal species, which is a totally different problem, but it undoubtedly also deserves attention.

Historically, TM has used a wide range of medicinal substances. Overpopulation and excessive demand lead to a depletion of natural resources. Besides TM, several other factors may contribute to the extinction of animal species.^[31] These include collections, trophy hunting, luxury items, exotic pets, and ecotourism. However, in various anti-TM articles published at the time of the publication of ICD-11-26,^[32-34] much of the discussion was centered around rare, banned, and endangered species, such as pangolin scales, tiger bone, bear paws, elephant tusks, or rhino horns, which are nearly impossible to access for virtually all licensed TM practitioners, especially in the West. Further, the ethical and moral considerations are the basis upon which the American Association of Acupuncture and Oriental Medicine and the Council of Colleges of Acupuncture and Oriental Medicine have both signed documents opposing the use of such agents in trade.

Other concerns drive global consumption of endangered species that outpace black market medical uses. The nouveau riche often seeks them in an attempt to fulfill their “peasant dreams.”^[35] Then, some want to sample uncommon tastes and rare delicacies, a practice that sometimes backfires. This can contribute to dangerous conditions such as the SARS epidemic of 2002–2003 and the more recent COVID-19.^[36-40] Further, some of those substances are expensive, with prices exceeding several times that of gold.^[31]

As for the toxicity of the medicinals, there are reports of Chinese herbs containing aristolochic acid,^[41,42] heavy metals, arsenic,^[43,44] sulfur,^[45,46] or pesticides.^[47-49] The US Food and Drug Administration and many other regulatory bodies around the globe do an excellent job in ensuring that contaminated substances do not reach traditional clinics and consumers in the Western hemisphere.

It is a logical inconsistency to conflate a diagnostic model for TM in ICD-11 with the abuses of the various trade, hunting, and customs laws. More importantly, there is a need for better research data on TM practices, which are intrinsic to many global regions. If there is an argument of insufficient data for these practices, then the tools for gathering that data must be identified and implemented. The ICD-11 code set does just that.

Endorsement of Traditional Medicine as a Medical System

In several countries in the Western Pacific Region, TM such as acupuncture and herbal medicine is preferred for ailments that respond well to them, such as pain,^[50,51] common cold,^[52,53] allergies,^[54] and asthma.^[55] For such cases, coding should be available to enable accurate statistics in safe hospital environments, where TM is practiced alongside mainstream medicine. The fact that the ICD-11 includes TM does not signify an endorsement of the system. Instead, ICD-11 describes the standards of practice in hospitals throughout the Western Pacific Region relative to TM.

Chinese business interests in the global medical market and other economic and financial benefits – Cultivation of traditional medicine herbs outside the Western Pacific region

This form of TM originated in the Western Pacific Region, and therefore, it makes sense that the native medicinals, specific to that geographic area, be used in its treatment modalities. There are also economic forces whereby China and the neighboring countries have an interest in capitalizing and monopolizing the natural resources that are used in TM.^[56-58] In addition, strict quality control methods have been employed since the early 1980s and they include spectrum chromatographic analyses to determine correct materials, contaminants, and adequate active constituents.

There is a growing body of English language literature^[59,60] examining the correct methods for growing TM herbs outside the Western Pacific Region. Since the bioregional growth

of medicinals has ecological value, it becomes necessary to determine whether the medicinals grown in one region will have an equal value to that of another. This requires the examination of the soil conditions, climate, and elevation in an attempt to assure that the chromatographic fingerprint of the herb grown in the West will demonstrate phytoequivalence to its counterpart grown in their native place of origin and ensure the fingerprint–efficacy relationship,^[61-64] that can guarantee the precise therapeutic effect.

It is theoretically possible that with proper botanical research, appropriate cultivation methods, and soil preparation, TM herbs can be grown in other parts of the world. Although this may take a long time from ever being accomplished, for the critics of the Chinese financial interests in herbal trade, it is perceivable that a Chinese monopoly on these resources can be reduced or eliminated as TM becomes globalized.

What is the Traditional Medicine Pattern (Syndrome) Differentiation?

To understand the diagnostic process of TM relative to ICD-11 codes, TM considers that the body can produce a finite number of externally observable symptoms. The causes of those symptoms, however, can be infinite and multifactorial.

All medicine categorizes the various diseases in terms of location, process, and intensity. So also, TM. TM doctors collect both signs and symptoms for further grouping and summarization into a designated pattern (syndrome). Physicians collect these data using low technology-based clinical skills including interview, palpation, observation, auscultation, and olfaction. In contrast, conventional medicine relies more heavily on imaging, laboratory work, and technologically informed inquiry.

Indeed, the modern hospitals throughout the Asian-Pacific region often combine TM syndrome differentiation with information obtained from laboratories, radiography, and other advanced diagnostic procedures, allowing a more integrative understanding of patients' condition. A detailed medical record of these practices is critical to understanding practice and improvement for humanity.

Background Work for Traditional Medicine Terminology, before Being Included in 11th Edition of the International Classification of Diseases

In the mid-20th century, in an attempt to reduce health-care cost in several countries in the Western Pacific Region, where diagnosis and treatment were unaffordable for many people,

governments looked into their indigenous medical systems as sustainable alternatives.

The United Nations and the WHO endorsed preliminary work toward the future implementation of TM into the standard coding since the 1970s. This effort yielded a standardization of the acupuncture points, which were released in the book entitled “WHO Standard Acupuncture Point Locations in the Western Pacific Region” and a permissive standard on the terminology of TM, under the title “WHO International Standard Terminologies on Traditional Medicine in the Western Pacific Region.” In addition to these, key references for the TM coding also included the GB/T15657-1995 and GB/T16751.1-1997 (China), the Kampo Medicine Pattern Codes (Japan), and KCD-OM (South Korea).

The work on the International Classification of TM officially started in 2009, with the participation of China, South Korea, and Japan, i.e. the three main countries that stood to benefit from this project.

In China specifically, the State Administration of Traditional Chinese Medicine appointed the academician Zhang Boli and Professor Yan Shiyun to spearhead this project, commanding a team of 36 experts in numerous technical fields such as terminology, information, standards, and classification.

The project lasted nearly 10 years, with the Chinese expert group innovatively establishing the “Traditional Medicine Conditions Module and Classification Framework of Disorders and Patterns,” which became the template utilized in the final stages. The construction of this framework ultimately reflected the merging of the traditional Chinese medicine theory with the specific variations existing in the Japanese, Korean, Vietnamese, and other related traditions. After 10 years of continuous efforts by China, Japan, South Korea, and other participating countries, a disease classification system was finally established, which listed 150 diseases and 196 patterns in TM terms, and these were included in the latest version of ICD-11.

What China, Japan, and South Korea Still Need to do for Their Indigenous Traditional Medicine

Explanation of terminology in a language that makes sense to other medical professions

The criticism following the publication of ICD-11 reveals the failure of the TM community to explain the terminology and the principles behind its traditional diagnostic vernacular in a way that makes sense to other medical professionals. This lack of communication creates a lingering discrepancy to a certain extent that justifies the increasing number of voices wishing to discredit TM in the Western hemisphere. Although there

are already scholars proposing changes in the terminology aspects of the list,^[65] meticulous work is also necessary to elaborate what these “flowery” terms mean in a language that other health-care providers can relate and understand. Understandably, many TM scholars wish to maintain the distinctiveness of the cultural origins of the system for patriotic or marketing purposes. However, to survive in a globalized world, maintaining this attitude is unacceptable.

The WHO should consider initiating a procedure to redefine the terms in conventional language, or otherwise, the inclusion of ICD-11-26 may backfire.

Research to reconfirm traditional theories

In addition to the terminology work, much attention should also be paid to methodically reconfirming the traditional theories and clinical patterns. Typical TM textbooks often failed to mention any modern research undertaken to reconfirm the traditional grouping of symptoms under patterns or syndromes in a comprehensive conventional model. This major inconsistency between theory and practice comprises reasonable grounds for skepticism regarding the clinical applicability of TM.

TM research methodologies should try to adopt standards under established evidence-based (EBM) models that may address the theoretical issues and present a comprehensible outcome in conventional terms.

Conclusions

Without a full accounting of the care a patient receives, there is an increased risk of morbidity and mortality. Thus, it is critical for even the best medical practices to engage in the full scope of care provided. This requires adequate record-keeping systems and specifically the inclusion of TM codes since they are a standard of practice within certain regions of the world.

Media criticism on ICD-11-26 was likely due to “status quo bias” and possibly “agenda-setting” from undisclosed parties. This campaign aims to slander TM on topics including the extinction of rare species, human medical error, and herbal safety while completely ignoring that it is merely a list of diagnostic codes used predominantly in the Western Pacific Region.

However, the criticism also revealed the many discrepancies that the TM community should address on current terminology and TM theory research. Resolving these discrepancies is vital for the TM development outside the Western Pacific Region, i.e. in countries and territories where the legislation is not as accommodating for non-EBM practices.

Although, at the moment, the financial gains from trading TM herbs in the Western hemisphere may be seemingly booming, it is very hard to predict if this trait can be ultimately sustainable. China, Japan, South Korea, Vietnam, and the neighboring

countries should team up to seek solutions and to ensure the continuous development of ICD-11-26 so that their efforts can guarantee the advancement of TM in its places of origin and around the world.

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Authors' contributions

Ioannis Solos undertook the tasks of conceptualization, methodology, investigation, writing- original draft preparation. Mei Hong undertook the tasks of validation, resources and writing-reviewing and editing. William Morris undertook the tasks of validation, writing-reviewing and editing. Jian-Ping Zhu undertook the tasks of resources, supervision, and funding acquisition.

Ethical approval

The authors have no ethical conflicts to disclose.

Conflicts of interest

Ioannis Solos is an Editorial Board member of *Chinese Medicine and Culture*. The article was subject to the journal's standard procedures, with peer review handled independently of this Editorial Board member and their research groups.

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