Conventional medical attitudes to using a traditional medicine vodou-based model of pain management: survey of French dentists and the proposal of a pain model to facilitate integration[☆]

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Abstract

Objectives: The purposes of this study were to develop a pain management model using traditional medicine (TM) vodou healing methods; to survey a sample of French dentists to rate components of conventional and proposed TM vodou-based pain management model; and to assess the possibility of conventional, allopathic providers to integrate TM or complementary and alternative medicine concepts.

Methods: From a set of 30 fact sheets collected from TM African healers (vodou healers), main clinical concepts and terminology were extracted. Twenty vodou-based pain management concepts were collected from an interview with a TM vodou practitioner. From this information, a

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7-step vodou-based pain management model was created. A sample of 40 French dentists from Nantes, France, whose practices focused on the clinical treatment of dental pain, was surveyed to assess the importance of both TM (vodou) and conventional biomedical components.

Results: Seventy percent of the dentists sampled rated the rational components of the TM model as “very important” or “important” for pain treatment, whereas 2 other traditional concepts were considered to be “supernatural” or beyond understanding.

Conclusion: This study showed that traditional healers used conventional concepts and conventional practitioners could use traditional concepts. This suggests that conventional allopathic medical providers have the capacity to integrate biomedical concepts and other therapeutic and explanatory models. This information may be helpful to understand and improve risk management by anticipating and preventing potential reasons for failure in TM integration strategies and to enhance communication between patients, healers, and physicians to optimize TM or complementary and alternative medicine integration.

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Introduction

The value given to traditional medicine (TM) is a function of public health and drug policies at a national level. Its potential contribution to conventional allopathic medicine can be characterized by how it is defined, the motivation for its use, and country-specific integration strategies.

The World Health Organization’s (WHO’s) definition of TM recognizes that it predates Western medicine. WHO describes TM as “... the sum total of knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures that are used to maintain health, as well as to prevent, diagnose, improve or treat physical and mental illnesses.”¹ In some countries, the terms *complementary and alternative medicine* (CAM) are synonyms for TM. Together, these terms refer to a broad set of health care practices that are not integrated into a country’s primary biomedical health care system.¹⁻³ For example, the French health care system defines TM or CAM¹ as unconventional health care practices that should be regulated.⁴

For the purposes of this study, we merged the WHO definition¹ into an integrated approach.⁵ In this approach, TM is seen as a medical model that has always “existed”¹ and whose concepts, knowledge, skills, and practices can be associated with conventional allopathic medicine to improve levels of health care and additional services. It also can be an evaluation, treatment, or counseling tool for health care providers to be used in the management of pathology or medical, social, cultural, ethnic, and economic problems in either a conventional or a traditional context.

The motivation for patient use of TM has changed over time. For example, WHO 2008 figures show in some Asian and African countries that 80% of the

population depended on TM or CAM for primary health care.⁶ In the United States, data from the 2007 National Health Interview Survey showed that the adult population spent US \$33.9 billion of their own money on visits to CAM practitioners and on the purchase of CAM products, training, and materials.⁷

In France, a 2007 survey showed that 39% of French people had used at least 1 type of TM/CAM in the previous 12 months. Their main motivations were reported to be a desire to take fewer drugs (39%) and effectiveness (28%).⁸ In a 2008 survey, 50% of French people reported having confidence in CAM; and 41% treated themselves without consulting a practitioner.⁹ These numbers suggest that there is competition between primary biomedical providers and CAM practitioners, as well as a sustained and growing market for CAM.^{5,10}

Assuming that integration is beneficial for patients and public health, for TM to be integrated into conventional allopathic medicine, appropriate strategies must be established. In 2002, WHO defined the first global Traditional Medicine Strategy. The purpose was to discuss the role of TM in health care systems, identify current challenges and opportunities, and assess WHO’s role and strategy for TM.¹¹ Since then, other models for the integration of TM into Western medicine have been put forward that have different interpretations and definitions of the terms *integration*, *integrated*, and *integrative*.⁵ These models describe implicit and explicit levels of collaboration and communication between providers in integrative health care and may be centered on the patient, the healer, the practitioner, or the health care system.^{5,11}

Each country has its own way to integrate TM into conventional allopathic medicine. Integration is closely related to the role of health care providers and may depend partially on their capacity to assimilate TM/

CAM knowledge. Lack of awareness may be one reason why TM/CAM integration strategies have failed and the ability of conventional practitioners to learn from a TM model may provide an indication of the capacity of the overall health care system to integrate TM knowledge.

According to WHO classification¹¹ and French health care regulations,⁴ France has an inclusive system that recognizes TM/CAM but has not yet fully integrated it into all aspects of health care, including delivery, education and training, and regulation. Traditional medicine/CAM is not available at all levels in the health care system. Health insurance does not cover TM/CAM treatment, training in TM/CAM is not available at university level, and regulation of TM/CAM providers and products is partial or lacking. This is disappointing because, ultimately, full integration can only happen when countries operate a fully inclusive system.^{4,10,11}

The definition of *integration* we use for this article is systemic and healer centered. It follows the example of WHO, which has proposed incorporating traditional healers into the conventional health care system.^{1,11} These individuals bring with them their own concepts, knowledge, reasoning system, skills, practices, and communication processes.^{1,11,12}

There are several challenges to be overcome in further developing the potential of TM or CAM to assist in the health care system. The first is that TM/CAM practices have evolved in different cultures and regions and there has been no parallel development of standards and methods—either national or international—for evaluating them. The evaluation of TM/CAM products can be problematic. This is especially true of herbal medicines, the effectiveness and quality of which can be influenced by numerous factors. Research into TM/CAM has been inadequate to date, resulting in a lack of data and methodologies.^{1,11}

An additional challenge is the lack of harmonization of communication between TM consumers and providers in the conventional health care system.^{4,10,11} There is a lack of communication both between TM and allopathic medical practitioners, and between allopathic medical practitioners and consumers.¹¹ Most disease management models can be described as an aggregation of concepts that are learned and shared by health care providers. Explanatory models (whether traditional or modern) in medical anthropology, ethnomedicine, and ethnopharmacology define different disease taxonomies and use different biomedical concepts, which make it difficult for traditional healers, patients, and practitioners to communicate with one another.^{13,14} This problem is

exacerbated by the exponential growth of data and knowledge representation methods in both TM and mainstream allopathic medicine.¹⁴⁻¹⁶

A third challenge is the provision of information to consumers about risks and risk management strategies^{10,11} related to the use of TM/CAM. This includes the fight against misleading advertising and sectarian divides in the use of TM/CAM therapies.^{10,17} Another challenge is the ability to integrate TM/CAM into the medical curriculum and the ongoing education of practitioners and health care professionals.^{4,10}

For this study, we chose vodou as the representative method for TM/CAM. Vodou (also known as *voodoo*, *voudou*, *vaudou*, *vodu*, *vodun*, *vodoun*) healing is a traditional therapy model that is common to Africans, Afro-Americans and some Europeans. It is a recognized religion in some countries and is used in public health research.^{18,19} Vodou practices are understood to involve belief systems and ritual^{20,21} and serve as a way to treat spiritual, social, and medical problems in traditional or modern societies.²²⁻²⁵ Historically, explanatory vodou models have been used in psychiatry.²⁶

There are similarities between Western medicine and CAM in patients' motives for consulting a practitioner. Pain is one of the oldest medical problems and a universal physical affliction for humankind.²⁷ It is a concept that is common to both TM and Western medicine and is one of the most frequent reasons for consulting either a traditional healer or a biomedical practitioner. Some CAM therapies are well known for their effectiveness in managing pain. For example, acupuncture has been used to treat pain (and many other health conditions) for more than 3000 years.²⁸ On the other hand, the role of vodou in pain management is not well understood. In Africa, traditional healers play an important role in the delivery of primary health care (particularly in remote communities)^{29,30} and offer various approaches to pain management. Their traditional methods range from plant remedies to tooth extractions. The question we investigate in this study is whether it is possible to develop a vodou-based model for the treatment of patients with acute or chronic pain.

We feel it is important to study the capacity of a health care system and its providers to integrate biomedical concepts and other therapeutic and explanatory medical models. In addition, there is a need to understand and improve risk management by anticipating and preventing potential reasons for failure in TM/CAM integration strategies and to enhance communication between patients, healers, and physicians to optimize TM/CAM integration. Therefore, the aim of

the study was to develop a TM vodou pain management model and then to assess the capacity of French dental practitioners to use it in the context of the French health care system. In particular, we aimed to identify specific factors, criteria, and conditions for the integration of TM into conventional allopathic medicine.

Methods

The methods were divided into 3 stages: (1) an analysis of the concepts and terminology of vodou traditional healers using knowledge-engineering techniques, (2) the development of a pain management model based on a traditional therapy, and (3) a 3-part survey of a sample of French dental practitioners. The survey gathered information about the terms practitioners typically use to describe dental pain, assessed their capacity to use the TM concepts, and evaluated their communication profile. This study was approved by the research ethics committee of the Université de Nantes.

Collection and analysis of the TM terminology

From 2002 to 2011, we collected 30 commercial fact sheets from traditional vodou healers in various African countries (Benin, Burkina Faso, Gabon, Gambia, and Mali). These paper documents provided a range of information about the healers and their services, such as the therapies available, the illness or problems treated, and the medical products used. From these fact sheets, we extracted frequently used terms using natural language processing procedures. A corpus of 10,800 words was established, unidentifiable words were checked for spelling mistakes, and the text was preprocessed using Unitex 2.1 (a corpus processing system). Terms were extracted manually according to token frequency, the identification of collocations, the use of patterns for locating information, and statements about the definition of pain.³¹

We then identified the principal pathologies through a correlation of term frequencies and the concepts of healers. We also categorized terms indexed in conventional biomedical terminologies to identify semantic differences between socioeconomic or cultural problems, and disease or illness.

Pain management model development

We selected vodou healing as the TM model for this study for several reasons. Although vodou is not

classified by the American National Center for Complementary and Alternative Medicine² and its full integration into the American health care system is still in question, in France, it is recognized as a nonconventional therapy.⁴ There are historical, social, and anthropological links between the vodou healer and conventional French medical practitioners. Some of the earliest theories of vodou came from Dahomey (Benin), which was a West African French colony.^{20,21,23} Thus, because vodou is recognized in the French system and we wished to survey French dentists, it was logical to select this method for TM for our study.

We carried out a semidirective interview with a recognized vodou healer. The principal questions were as follows: How is pain (*mal* or *douleur* in French) managed with vodou healing? How does it work in dental pain management?^{29,30,32-36} What medical products are used? How do the paradigms of the vodou model compare to “modern” models such as the biopsychosocial model of pain?³⁷⁻³⁹ From the description of how he used vodou to treat pain, we extracted 20 steps and formalized the conceptual pain management model.

Survey of French dental practitioners

We used a sample of dental practitioners in Nantes, France, for this study. Dentists have traditionally been associated with pain, which is one of the most common reasons patients seek dental treatment. Dentists are expected to be able to diagnose the source of pain and provide conventional strategies for its management.⁴⁰ Therefore, they are expected to have clinical experience of different models of pain management. The main criterion for inclusion in the sample was dentists working in the area of Nantes (western France) who were involved in the clinical treatment of dental pain; this included dentists working in private practice outside an academic setting.

The profile of the sample of dentists was male (55%) or female (45%) aged 45 to 65 (57.5%) with an average of 20 years of clinical practice. Most worked with 0 to 2 professional colleagues (65%) and 0 to 2 other collaborators (50%). English was the first foreign language spoken (62.5%). Forty dentists took part in the survey.

The first part of the survey asked dentists to list terms frequently used in the treatment of dental pain. The purpose of this was to be able to compare the terms used by traditional healers and conventional practitioners. The second part of the survey assessed the ability of the sample of dentists to use the pain management model. The 20

traditional treatment components were merged with 3 conventional modalities (diagnosis, use of anesthetic, and therapeutic choice) to determine the principal modalities selected by the conventional dental practitioner.

The third part of the survey evaluated the communication profile of practitioners. It can be difficult to “translate” between the concepts of TM and conventional allopathic medicine, and similarities between therapeutic methods may only refer to a logic equality or equivalence of medical facts.⁵ The communication profile of practitioners may help to characterize the strategies of mainstream health care providers. Therefore, we asked dental practitioners to classify a set of terms and expressions, which were associated with 2 variables (whether they had an informational or a medical/paramedical impact).

Results

Analysis of the terminology used by traditional healers

The 30 fact sheets provided by traditional healers showed that the most frequently used terms were pain and disease oriented. The concept of *mal* or *maux* (roughly translated as *pain* or *ache* in English) was the most frequently cited term (Table 1). In French, these terms can represent pain, symptoms, pathology, illness, disease, the supernatural, or other problems (social, cultural, family, professional, spiritual, mystical, occultism, economic, etc).

These results showed that traditional African healers use biomedical concepts that are sometimes equivalent to conventional medical terminology, such as that of the Medical Subject Headings⁴¹ or the French Catalog and Index of French Language Health Resources on the Internet,⁴² albeit without knowing the medical meaning. Indexed terms were used 25% and unindexed terms were used 75% of the time (Fig 1). We quantified this ability to use conventional concepts through the development of a health care indicator, which may be useful as a predictor of the constraints to the integration of TM/CAM into Western medicine.

Development of the pain management model

A TM pain management model was derived from the 20 treatment components shown in Table 2. Fig 2 shows the 7 steps of this model.

Table 1 Frequently used terms extracted from the fact sheets of 30 traditional African vodou healers

Term (French)	Term (English)	Frequency
<i>Abcès</i>	<i>Abscess</i>	4
<i>Carie dentaire</i>	<i>Tooth decay</i>	3
<i>Chronique</i>	<i>Chronic</i>	26
<i>Cœur</i>	<i>Heart</i>	29
<i>Constipation</i>	<i>Constipation</i>	23
<i>Dentifrice</i>	<i>Toothpaste</i>	1
<i>Dentition</i>	<i>Dentition</i>	1
<i>Dents</i>	<i>Teeth</i>	18
<i>Diabète</i>	<i>Diabetes</i>	22
<i>Douleurs</i>	<i>Pains</i>	25
<i>Estomac</i>	<i>Stomach</i>	30
<i>Faiblesse sexuelle</i>	<i>Sexual weakness</i>	13
<i>Fatigue</i>	<i>Fatigue</i>	32
<i>Femme</i>	<i>Woman</i>	25
<i>Foie</i>	<i>Liver</i>	26
<i>Gencive</i>	<i>Gums</i>	1
<i>Impuissance sexuelle</i>	<i>Sexual impotence</i>	9
<i>Infections</i>	<i>Infection</i>	12
<i>Inflammation</i>	<i>Inflammation</i>	10
<i>Maladie, maladies</i>	<i>Disease, diseases</i>	47; 40
<i>Maux, mal</i>	<i>Pain</i>	155; 10
<i>Maux de dent</i>	<i>Tooth pain</i>	4
<i>Maux de dents</i>	<i>Tooth pain</i>	13
<i>Médecine</i>	<i>Medicine</i>	4
<i>Médicament</i>	<i>Drug, medicine</i>	4
<i>Nerfs</i>	<i>Nerves</i>	4
<i>Paludisme</i>	<i>Malaria</i>	25
<i>Plaie grave</i>	<i>Serious wound</i>	1
<i>Plantes</i>	<i>Plants</i>	15
<i>Poudre</i>	<i>Powder</i>	68
<i>Problèmes</i>	<i>Problems</i>	6
<i>Puissance sexuelle</i>	<i>Sexual potency, virility</i>	2
<i>Sachet</i>	<i>Sachet</i>	38
<i>SIDA</i>	<i>AIDS</i>	7
<i>Symptômes</i>	<i>Symptoms</i>	16
<i>Tisane</i>	<i>Tisane</i>	42
<i>Toux</i>	<i>Cough</i>	44
<i>Ventre</i>	<i>Stomach</i>	47

Survey of French dental practitioners

Dentists were asked to assess TM and conventional healing components according to their importance in their clinical practice. The results shown in Table 3 indicate that, for 70% of dentists surveyed, rational modalities were seen as “very important” (30%) or “important” (40%) in pain treatment. Two traditional concepts (in particular, the “miniaturization” process and “thought forms”) were considered as supernatural or beyond understanding by 30% of the sample. Most surveyed dentists (65%) had no opinion about the miniaturization process, and it held no interest for another 22%. Similarly, 50% of

Fig 1. A fact sheet from a traditional healer showing some typical concepts including *diarrhée* (diarrhea), *maux de dent* (dental pain), and *amour* (love).

dentists had no opinion about “thought forms”; and it held no interest for another 27.5%. These results suggest that, apart from the more mystical modalities, the traditional pain management model could be used by dental practitioners.

An analysis of the communication profile of dental practitioners showed that they were information oriented. They focused on health information, clinical facts, and the doctor-patient relationship (mean, 31.18%; standard deviation, 14.98). They were also interested in protocols and ways to measure pain management (mean, 23.95%; standard deviation, 14.91); the conceptualization of medical facts (mean, 11.45%; standard deviation, 6.73); and the social, economic, and health impacts of treatment on the patient (mean, 8.68%; standard deviation, 14.32). The automation of clinical procedures and the urgency of the patient’s pain were their priorities. They tended to focus on therapeutic procedures, and patient communication was rarely mentioned (mean, 1.57%; standard deviation, 1.70).

Finally, 23.16% of the dentists sampled had no opinion about the impact of communication and terminology in dental pain management.

A composite health care index for TM/CAM integration

Our results were organized into a composite health care index. The aim was to describe TM/CAM integration strategies at systemic and individual level. The index uses 4 sets of indicators to characterize the capacity of a health care system and its providers to use the TM model. The indicators represent the definition, integration, motivation, and challenges for TM/CAM use. Further regulatory indicators may be implemented for the control of TM/CAM therapeutic products. Indicators take several forms. Evidence-based indicators relate to randomized clinical trials of the therapy in question. Knowledge-streaming indicators relate to the concepts, terminology, and therapeutic modalities of

Table 2 The 20 components of vodou-based pain management

	Phase	Description	Field of application in Western medicine
1	Identification of patient	This initial phase consists of identifying the patient by conventional or supernatural methods. The physical presence of the patient is not required; he or she can be represented by a personal object.	Diagnosis
2	Identification of problem	Determining the context and the type of problem (medical, social, spiritual, etc).	Diagnosis
3	Traditional healer self-evaluation	The vodou practitioners test their ability to manage the problem. They deduce the complexity of the situation and may ask the “permission” of spirits or ancestors before beginning the consultation.	Self-evaluation Therapeutic strategy
4	Patient confidence-building	This is based on the principle of “demagnetizing the molecules constituting the body” and concerns stress management.	Psychological approach Transference Doctor-patient relationship
5	Traditional and additional examinations	The healer looks for cosmologic, religious, and anthropological factors. Metaphysical, rational, medical, and ethnopharmacological processes lead to a diagnosis of the problem.	Laboratory techniques and procedures Diagnostic techniques and procedures
6	Determining the field of intervention	Vodou interventions can be physical or supernatural (for problems of mind, spirit, and soul). They highlight the use of pharmacopeia and traditional plants. <i>Disease</i> is defined as an unbalance of vital or intangible forces in the person or their community. <i>Health</i> is described as a balance between visible and invisible forces.	Pain management Disease management
7	Health care and therapeutic procedures	Preparation of a set of traditional healing procedures.	Pain management Disease management
8	Miniaturization process	A metaphysic and non-Cartesian description of traditional investigations that corresponds to an energy transfer. It uses supernatural processes to treat the cause of pain and requires holistic knowledge and ritual initiation.	Possible pain management
9	Identification of pain symptoms	Identifying symptoms of the problem and the effects of the therapeutic procedures. This phase may have a negative or positive impact on the healer’s approach.	Pain management Safety, effectiveness, and risk management
10	Evaluating pain symptoms	This step makes it possible to distinguish physical signs from immaterial symptoms.	Pain management Safety, effectiveness, and quality Evaluation
11	Assessment of the results of healing	Determining the extent of the patient’s recovery. According to vodou philosophy, healing is the result of divine intervention: “only God heals.”	Pain management Safety, effectiveness, and quality Evaluation
12	Assessment of pain relief	Pain relief is a therapeutic procedure that can be attributed to human intervention. It emphasizes the impotence of man when faced with disease.	Pain management Safety, effectiveness, and quality Evaluation
13	The use of thought forms	Thought forms are “materializable or unmaterializable” purified knowledge. They include the incantations used in pain management and sometimes require initiation.	Psychological approach Transference
14	Summary of the consultation process and therapy	Defining or redefining the problem. The patient and the healer discuss their views on the proposed therapy.	Evaluation Therapeutic strategy
15	Prescription of medicinal products	The healers explain how to collect and prepare medicinal plants from the traditional pharmacopeia. Sometimes, they provide guidelines for healing or ways to solve a specific problem.	Pain management Pharmacology Phytotherapy
16	Healing precautions	Instructions that ensure the balance between “health forces.”	Recommendations Clinical follow-up

Table 2 (continued)

	Phase	Description	Field of application in Western medicine
17	Verbal prescription	Advice based on oral traditions and the transmission of the key to the traditional therapeutic practice.	Patient-doctor communication Knowledge transfer
18	Behavioral advice	Identification of the attitudes and actions of the patient that could lead to treatment failure.	Prevention and risk management
19	Advice	Discussion of other aspects that may have an impact on the health problem, for example, the patient's social and family environment, any professional or emotional problems.	Biopsychosocial model of pain
20	Recommending the patient to other therapists	Instructions for recommending the patient to other initiated practitioners who may be more specialized. This may be another traditional healer or a conventional practitioner	Prevention and risk management

the healer. Usage indicators relate to social and environment factors, such as the conditions and constraints for the integration of TM/CAM (Fig 3).

Discussion

In our analysis of the terms used by healers to describe the concept of pain (*mal* or *maux*), it is important to

highlight that the word *mal* has a broader meaning in French than in English.⁴² In French, the word *mal* is a synonym for *douleur*, which is usually used to translate the English word *pain*; however, as discussed earlier, it also equates to many other biomedical terms. The same problem occurs in the definition of the anthropological differences between *illness* and *disease*.^{43,44}

Our approach aimed to classify the heterogeneous terminology used by the various health care providers. Conventional concepts such as evidence-based medicine⁴⁵ are often unfamiliar to traditional healers who have their own beliefs about the safety, effectiveness, and quality of treatments, such as herbal medicines.^{11,46,47} Their therapeutic choices may be based on spiritual beliefs, traditional knowledge systems, and experience.^{11,48} These conceptual differences suggest that there is a need for the “translation”⁴⁵ of transcultural medical concepts, which would improve the quality of communication^{49,50} between traditional healers and Western biomedical practitioners.

Our method offers one way to compare a TM, vodou-based pain management model with conventional models. Our analysis described the pathological dimensions of pain. In this respect, the biopsychosocial model and the TM model have much in common. Both systems describe pain using concepts that involve systemic interrelationships between the biological, the psychological, and the social in health and illness.^{51,52} However, in this study, we have not been able to establish valid correlations between the 2 models. More research will be needed if the conventional method and the traditional approach are to be merged. The TM model may be a tool for pain assessment and management in other domains such as social science, religion, complementary and alternative medicines, integrative medicine, allopathic medicine,

Fig 2. A proposed TM, vodou-based pain management model.

Table 3 Assessment of conventional and traditional treatment components

Treatment components	Importance (% of dentists)				
	Very important	Important	Unimportant	No interest	No opinion
Identification of patient	27.5	40	27.5	5	0
Identification of problem	72.5	25	2.5	0	0
Diagnosis	72.5	20	7.5	0	0
Self-evaluation of traditional healer experience	10	35	17.5	15	22.5
Patient confidence-building	32.5	52.5	7.5	5	2.5
Traditional and additional examinations	17.5	60	17.5	0	5
Determining the field of intervention	32.5	42.5	10	5	10
Definition of pain characteristics	65	30	5	0	0
Therapeutic choice	60	30	7.5	2.5	0
Health care and therapeutic procedures	50	37.5	7.5	2.5	2.5
Use of anesthetics	40	35	17.5	2.5	5
Miniaturization process	2.5	0	10	22.5	65
Identification of pain symptoms	22.5	32.5	22.5	20	2.5
Evaluating pain symptoms	17.5	35	22.5	20	5
Assessment of the results of pain healing	37.5	45	10	0	7.5
Assessment of the results of pain relief	40	50	2.5	0	7.5
The use of thought forms	5	10	7.5	27.5	50
Summary of consultation process and therapy	12.5	37.5	10	22.5	17.5
Behavioral advice	15	65	17.5	0	2.5
Verbal prescription	12.5	77.5	7.5	0	2.5
Prescription of medical products	15	52.5	22.5	0	10
Check of patient satisfaction	15	55	25	2.5	2.5
Explaining changes to the initial treatment protocol	22.5	45	15	12.5	5
Overall capacity to use all therapeutic modalities	30	40	13	7	10
Overall capacity to use the modalities of the traditional pain management model	28	41	13	8	10

chiropractic, and others. It may also be useful for the evaluation and comparison of other Western or allopathic medicines.

A comparative study of vodou-based pain management models is complex because of the variety of

paradigms and forms it takes. In the course of our work, we did not find any other formalized vodou-based pain models. The literature describing vodou therapy uses explanatory models from social, anthropological, historical, magical, and medical contexts. Secret, magic rituals, and belief in the supernatural make it difficult to explain vodou in everyday language.^{22-26,18}

Can a medical concept, whether traditional or conventional, be socially unacceptable? Our results showed that the concept of “miniaturization” was not generally understood or accepted by our sample of dental practitioners. This may be due to the lack of a clear and rational reasoning system around what seems to be a metaphysical concept. More information and improved communication between traditional healers and conventional practitioners might bridge this gap.

Finally, this study showed a convergence between French TM/CAM policies and the dentists’ communication profile. French authorities currently seek to limit risk related to TM/CAM by providing information.^{4,17} Dentists, but not patients, are actively interested in this information. This may render the French strategy for TM/CAM integration ineffective. It appears that efforts should instead be made to anticipate medical risks

Fig 3. Process for evaluating the capacity of a health care system and its practitioners to integrate TM concepts. Each process could be an indicator into a composite health care index dedicated to TM/CAM integration.

related to a lack of understanding or the existence of misleading information.

Limitations and future research

The following are limitations to this study. The sample size of dentists was small, not randomized, and from only one region of one country. It is possible that dentists from other areas or practitioners from other specialties may have responded differently. A larger sample should be used in the future. Dentists also have a unique training and thus have their own terminology and approach to pain management; thus, they do not necessarily represent all types of Western biomedical practitioners. Therefore, the findings of this study are limited to dentists of this region. Other studies using different types of practitioners should be considered.

Vodou healing is one of many TM methods of healing. Concepts and terminology for vodou may not necessarily translate to other types of TM or CAM. Thus, additional studies should be performed on other types of TM and CAM. The present study may serve as a model for research into other TM and CAM areas. As authors, we selected relevant findings and words; thus, we influenced the process for creating the survey and models. Other studies should be completed to validate our findings.

The criteria and conditions for the use of TM/CAM are changing. As more information about the effectiveness and safety of TM/CAM treatments becomes available, they may become integrated into conventional medicine. This study provides some arguments that suggest that a lack of proof and randomized clinical trials are not absolute barriers to the integration of TM/CAM therapies. Some medical practitioners are already convinced of the benefits of TM/CAM, and patients can decide for themselves which therapies they use. Further research is needed to assess the impact of the patient, who by their choice of treatment can influence the behavior of practitioners and healers.

It would also be interesting to look at the potential role of dental practitioners in primary health care as new diagnostic opportunities open up.⁵³ Community care models for essential oral health have been encouraged in developing countries, and several pilot projects based on sociocultural conditions have been supported or carried out jointly under the auspices of the WHO oral health program.⁵⁴

The aim of the study was to assess TM/CAM integration strategies at systemic and individual levels. The composite index implements 4 sets of variables that assess the capacity of a health care system and its

providers to use the traditional therapy model. These quantitative and qualitative indicators make it possible to measure the extent to which practitioners prefer conventional, rather than traditional, practices. In light of this, we suggest the use of a new term: *associated medicine*. This term may reflect the capacity of a health care system and its providers to “associate” or “be associated with” a medical concept and/or therapeutic model from another system. The concept of associated medicine may also help to investigate why certain established therapies (whether traditional or conventional) are not used by physicians, healers, or patients despite clear medical and social evidence of their benefits. The next step of our work is to develop an ontology and thesaurus dedicated to the concept of associated medicine and to facilitate 3-way communication between healers, practitioners, and patients and improve the quality of the information available.

Conclusion

Our assessment of the ability of French dental practitioners to use a TM model of pain management highlighted 2 findings: the capacity of traditional healers to use conventional concepts and ability of conventional dental practitioners to use traditional concepts. The ability of traditional healers to learn from conventional allopathic medicine was shown by the adoption of Western terminology. Healers frequently used biomedical concepts that are part of standard Western medical terminology, although they did not necessarily understand their meaning. The ability of French dentists to use a traditional pain management model was demonstrated by an analysis of therapeutic modalities.

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