

Premier Reference Source

# Complementary and Alternative Medicine and Kidney Health



Mayuree Tangkiatkumjai, Annalisa Casarin,  
Li-Chia Chen, and Dawn-Marie Walker

**IGI Global**  
DISSEMINATOR OF KNOWLEDGE

# Complementary and Alternative Medicine and Kidney Health

Mayuree Tangkiatkumjai  
*Srinakharinwirot University, Thailand*

Annalisa Casarin  
*The NIHR Research Design Service East of England, UK*

Li-Chia Chen  
*University of Manchester, UK*

Dawn-Marie Walker  
*University of Southampton, UK*

A volume in the Advances in  
Medical Diagnosis, Treatment, and  
Care (AMDTC) Book Series





Published in the United States of America by

IGI Global

Medical Information Science Reference (an imprint of IGI Global)

701 E. Chocolate Avenue

Hershey PA, USA 17033

Tel: 717-533-8845

Fax: 717-533-8661

E-mail: [cust@igi-global.com](mailto:cust@igi-global.com)

Web site: <http://www.igi-global.com>

Copyright © 2018 by IGI Global. All rights reserved. No part of this publication may be reproduced, stored or distributed in any form or by any means, electronic or mechanical, including photocopying, without written permission from the publisher.

Product or company names used in this set are for identification purposes only. Inclusion of the names of the products or companies does not indicate a claim of ownership by IGI Global of the trademark or registered trademark.

#### Library of Congress Cataloging-in-Publication Data

Names: Tangkiatkumjai, Mayuree, 1976- editor. | Walker, Dawn-Marie, editor. | Chen, Li-Chia, editor. | Casarin, Annalisa, editor.

Title: Complementary and alternative medicine and kidney health / Mayuree Tangkiatkumjai, Annalisa Casarin, Li-Chia Chen, and Dawn-Marie Walker.

Description: Hershey, PA : Medical Information Science Reference, [2018] | Includes bibliographical references.

Identifiers: LCCN 2017011897 | ISBN 9781522528821 (hardcover) | ISBN 9781522528838 (eBook)

Subjects: | MESH: Complementary Therapies--standards | Clinical Decision-Making | Kidney Diseases--therapy

Classification: LCC R733 | NLM WB 890 | DDC 615.5/3--dc23 LC record available at <https://lcn.loc.gov/2017011897>

This book is published in the IGI Global book series Advances in Medical Diagnosis, Treatment, and Care (AMDTC) (ISSN: 2475-6628; eISSN: 2475-6636)

#### British Cataloguing in Publication Data

A Cataloguing in Publication record for this book is available from the British Library.

All work contributed to this book is new, previously-unpublished material.

The views expressed in this book are those of the authors, but not necessarily of the publisher.

For electronic access to this publication, please contact: [eresources@igi-global.com](mailto:eresources@igi-global.com).



# Advances in Medical Diagnosis, Treatment, and Care (AMDTC) Book Series

ISSN:2475-6628

EISSN:2475-6636

## MISSION

Advancements in medicine have prolonged the life expectancy of individuals all over the world. Once life-threatening conditions have become significantly easier to treat and even cure in many cases. Continued research in the medical field will further improve the quality of life, longevity, and wellbeing of individuals.

The **Advances in Medical Diagnosis, Treatment, and Care (AMDTC)** book series seeks to highlight publications on innovative treatment methodologies, diagnosis tools and techniques, and best practices for patient care. Comprised of comprehensive resources aimed to assist professionals in the medical field apply the latest innovations in the identification and management of medical conditions as well as patient care and interaction, the books within the AMDTC series are relevant to the research and practical needs of medical practitioners, researchers, students, and hospital administrators.

## COVERAGE

- Internal Medicine
- Critical Care
- Alternative Medicine
- Patient-Centered Care
- Experimental Medicine
- Disease Prevention
- Cancer Treatment
- Diagnostic Medicine
- Medical Testing
- Patient Interaction

IGI Global is currently accepting manuscripts for publication within this series. To submit a proposal for a volume in this series, please contact our Acquisition Editors at [Acquisitions@igi-global.com](mailto:Acquisitions@igi-global.com) or visit: <http://www.igi-global.com/publish/>.

The Advances in Medical Diagnosis, Treatment, and Care (AMDTC) Book Series (ISSN 2475-6628) is published by IGI Global, 701 E. Chocolate Avenue, Hershey, PA 17033-1240, USA, [www.igi-global.com](http://www.igi-global.com). This series is composed of titles available for purchase individually; each title is edited to be contextually exclusive from any other title within the series. For pricing and ordering information please visit <http://www.igi-global.com/book-series/advances-medical-diagnosis-treatment-care/129618>. Postmaster: Send all address changes to above address. ©© 2018 IGI Global. All rights, including translation in other languages reserved by the publisher. No part of this series may be reproduced or used in any form or by any means – graphics, electronic, or mechanical, including photocopying, recording, taping, or information and retrieval systems – without written permission from the publisher, except for non commercial, educational use, including classroom teaching purposes. The views expressed in this series are those of the authors, but not necessarily of IGI Global.

## Titles in this Series

For a list of additional titles in this series, please visit:

<https://www.igi-global.com/book-series/advances-medical-diagnosis-treatment-care/129618>

### ***Sustainable Health and Long-Term Care Solutions for an Aging Population***

Ben Fong (The Hong Kong Polytechnic University, Hong Kong) Artie Ng (The Hong Kong Polytechnic University, Hong Kong) and Peter Yuen (The Hong Kong Polytechnic University, Hong Kong)

Medical Information Science Reference • ©2018 • 441pp • H/C (ISBN: 9781522526339)  
• US \$225.00

### ***Emerging Applications, Perspectives, and Discoveries in Cardiovascular Research***

Ashim Malhotra (Pacific University, USA) and Shivani Soni (California State University, Fullerton, USA & Chapman University, USA & Alabama State University, USA)

Medical Information Science Reference • ©2017 • 439pp • H/C (ISBN: 9781522520924)  
• US \$225.00

### ***Healthcare Community Synergism between Patients, Practitioners, and Researchers***

Valerie C. Bryan (Florida Atlantic University, USA) and Jennifer Lynne Bird (Florida Atlantic University, USA)

Medical Information Science Reference • ©2017 • 348pp • H/C (ISBN: 9781522506409)  
• US \$210.00

### ***Transformative Healthcare Practice through Patient Engagement***

Guendalina Graffigna (Catholic University of the Sacred Heart, Italy)

Medical Information Science Reference • ©2017 • 382pp • H/C (ISBN: 9781522506638)  
• US \$215.00

### ***Promoting Patient Engagement and Participation for Effective Healthcare Reform***

Guendalina Graffigna (Catholic University of the Sacred Heart of Milan, Italy)

Medical Information Science Reference • ©2016 • 357pp • H/C (ISBN: 9781466699922)  
• US \$220.00

For an entire list of titles in this series, please visit:

<https://www.igi-global.com/book-series/advances-medical-diagnosis-treatment-care/129618>



701 East Chocolate Avenue, Hershey, PA 17033, USA

Tel: 717-533-8845 x100 • Fax: 717-533-8661

E-Mail: [cust@igi-global.com](mailto:cust@igi-global.com) • [www.igi-global.com](http://www.igi-global.com)

## Editorial Advisory Board

Sirivan Athikomkulchai, *Srinakharinwirot University, Thailand*

Ashley Bennett, *University of Hertfordshire, UK*

Chuda Chittasupho, *Srinakharinwirot University, Thailand*

Janine Hawkins, *University of Hertfordshire, UK*

Chatchai Kreepala, *Srinakharinwirot University, Thailand*

Vipaporn Sareedenchai, *Srinakharinwirot University, Thailand*

Sukhumaphorn Sriwisit, *Sirindhorn College of Public Health, Thailand*

Sayamon Sukkha, *Mahidol University, Thailand*

Srunya Vajrodaya, *Kasetsart University, Thailand*

Sornkanok Vimolmangkang, *Chulalongkorn University, Thailand*

Sawaeng Watcharathanakij, *Ubon Ratchathani University, Thailand*

Win Winit-Watjana, *International Medical University, Malaysia*

## Foreword

Complementary and alternative medicine stems from ancient and have been used throughout history. Use of complementary and alternative medicines for preventive and therapeutic purposes has increased tremendously over the last two decades globally. Although modern medicine has developed tremendously, complementary and alternative medicine will always have their place as they are useful for treating conditions which no satisfactory conventional medical intervention exists, or to complement conventional medicine in promoting well-being, or helping to alleviate symptoms associated with a disease such as fatigue, or indeed side effects from pharmaceutical treatments.

*Complementary and Alternative Medicine and Kidney Health* comprehensively explores gaps of modern medicine, provides information how complementary and alternative medicine fills these gaps and how to consider complementary and alternative medicines for patient benefit. Without scientific and systemic evaluation of a complementary medicine's safety and efficacy, patients can be exploited by companies who sell unproven, and sometimes dangerous, remedies. There are common situations, especially in low- and middle-income countries, who may have less intense regulations, where complementary and alternative medicine are abused in this way.

There is currently a global pandemic of end stage renal disease. This catastrophic illness not only causes financial burdens to individuals and their countries, but also causes patients panic and disability. Dialysis as a treatment for end stage renal disease can be perceived as palliative treatment, and complementary and alternative medicine are often used in the hope that dialysis may be avoided or delayed.

*Complementary and Alternative Medicine and Kidney Health* defines the types of methods used in research in this area, the prevalence of use, and the characteristics of patients including the attitudes of users especially in relation to chronic kidney disease. The book also explores the effect of culture, including the Western and Asian perspectives, and how the behaviour and beliefs of

## Foreword

each population differently handles complementary and alternative medicine and how the differences should be seen through the vision of the regulatory agencies. *Complementary and Alternative Medicine and Kidney Health* is a source of reference for people interested in conducting complementary and alternative medicine research, including highlight gaps in knowledge, and suggestions of how clinical research in this field should be designed.

The most important issue to consider regarding complementary and alternative medicine is the evaluation of benefits and toxicity. *Complementary and Alternative Medicine and Kidney Health* comprehensively explores the evidence of both benefits and safety, critical knowledge for health care professionals and patients, including Chinese herbal medicines, aristolochic acid, acupuncture, yoga, aromatherapy and unregistered herbal products from India and China. These unregistered products are not required to submit proof of safety or efficacy to the Food and Drug Administration of the nation before their launch in the market. Therefore of concern, are not only benefits and toxicities of products, but also the issue of drug interactions, either herb-drug or herb-herb. The strict regulation and pharmacopoeias for ready references are needed.

*Complementary and Alternative Medicine and Kidney Health* offers suggestions for how to conduct benefit evaluations, toxicity assessments and economic evaluations through evidence-based medicine process. These important steps offer critical scientific information for decision-making and for informing guidelines. Evidence based complementary and alternative medicine can only be possible via integrative medicine models, and prospective research, such as randomized controlled trials and adverse effect studies, cohort, pragmatic clinical trials and multiple randomized controlled trials.

*Chatchai Kreepala*

*Srinakharinwirot University, Thailand*

*Mymoona Akhter*

*Hamdard University, India*

*Win Winit-Watjana*

*Srinakharinwirot University, Thailand*



# Preface

## BACKGROUND

Traditional medicine is embedded in Asian regions and health care providers in this area are more likely to have experience in this field. As a pharmacist with speciality in chronic kidney disease (CKD), I always receive questions about herbal medicine from patients with CKD. Received common questions are, “Could I use herbal medicine?”, “Which herbal medicine can improve my illness?”, and “Is it safe to use herbal medicine?” Due to being trained in only the modern concept of health care, I struggled to answer such questions. Colleagues faced similar questions from patients and came to me as a multidisciplinary team expects a pharmacist to answer such questions as they perceive that a pharmacist well know about conventional medication, including herbal medicine. This situation led me to study and build up knowledge about herbal medicine in CKD. During conducted research in this field, I learned many aspects of complementary and alternative medicine (CAM) that I did not expect. The more I learned, the more I understood. Now I am well placed to answer questions from patients and colleagues, but also thought it would be useful to write a textbook for a novice and health care providers who are interested in this field, and who may have similar questions posed to them. This book aims to bridge the gap of concepts between conventional medicine and CAM.

## CONTENTS AND ORGANISATION

CAM has become more popular in the last decade and health expenditure on CAM has been increasing worldwide. People seek an alternative treatment when they are disappointed in conventional medicine, and believe CAM to be safer than pharmaceutical interventions. Additionally, in some parts of

the world, people cannot access conventional medicine; therefore CAM is a mainstream of their health care system. In other countries, traditional medicine is embedded in their culture, and therefore remains the main health care system. Reasons for using CAM in patients with kidney disease are similar to the general population's. However, patients with renal insufficiency are more vulnerable to adverse effects of CAM, particularly herbal medicine.

Health care providers, who have been trained in conventional medicine, are less likely to trust CAM and argue that the efficacy and safety of CAM as supported by scientific evidence, are lacking. However, health professionals have limited time to search and evaluate evidence in the CAM field. This results in health care providers to suggest their patient to avoid using CAM due to unknown efficacy or safety. Patients therefore may lose an opportunity to use CAM, which may improve their illness. Meanwhile, CAM practitioners are strongly confident that CAM is useful despite a lack of scientific evidence. They argue that research methodologies for conventional medicine are unsuitable for CAM. However, CAM is still required to develop its research methodologies and establish sufficient evidence in order to convince health professionals to recommend CAM. The concept of evidence based medicine is applied to form the structure and contents of this book. The authors attempted to present mutual concepts between CAM and conventional medicine and consists of ten chapters:

- Chapter 1 gives an overview of CAM including CAM definitions and types of CAM. The prevalence and demographic characteristics of CAM use in general populations and patients with kidney disease worldwide are indicated, including reasons for CAM use in both populations. Placebo effects are discussed in this chapter.
- Chapter 2 presents similarities and differences in perspectives regarding CAM between Western and Eastern populations, and compares the prevalence of CAM use, factors related to CAM use, and disclosure of CAM use in both populations. Regulation of CAM and CAM practitioners, and legislation for herbal medicinal products are provided.
- Chapter 3 reviewed the quantity and quality of clinical research in CAM worldwide and shows a trend in CAM research in terms of descriptive studies, and a gap regarding efficacy and safety research in CAM. Publication bias in CAM, particularly open-access journals, are discussed, and a guideline for choosing trusted journals is presented.

- Chapter 4 provides a basic knowledge about how to evaluate the benefits and adverse effects of CAM in kidney disease. It focuses on chronic kidney disease, dialysis therapy, kidney transplantation, and urolithiasis due to there being a high number of such patients. Assessment of clinical outcomes related to positive and negative effects of CAM in kidney diseases is presented. This chapter also suggests standard questionnaires to measure the quality of life, and individual symptoms in CAM users with kidney disease. The modified Naranjo algorithm is proposed as a way to evaluate renal adverse effects of herbal medicine.
- Chapter 5 describes a method of systematic searching and critiquing scientific evidence on CAM, and suggests assessment of web based CAM information that nowadays is a main information source. CAM databases and standard questionnaires to evaluate scientific papers are indicated. Finally, a way of decision making based on evidence is proposed.
- Chapter 6 points out that many guidelines for chronic illnesses, e.g., chronic kidney disease, asthma, cancer, etc., suggests using CAM. The author summarises which CAM has, or has not, been recommended in a guideline or illness. Suggestions for CAM in guidelines is inconsistent and is discussed. This chapter also provides details of standard tools for guideline appraisal.
- Chapter 7 provides evidence for the efficacy and nephrotoxicity of CAM, focussing on herbal medicine that is the most common CAM for treating kidney diseases. Other CAMs for relieving uraemic symptoms are mentioned. Such information is presented based on existing scientific evidence. This chapter also proposes recommendations for preventing acute kidney injury from using herbal and dietary supplements.
- Chapter 8 discusses herb-drug interactions and focuses on herbal medicine for kidney diseases that interact with conventional medicine or other herbal products. The author also explains the basic mechanisms of herb-drug interactions, i.e. pharmacokinetic and pharmacodynamic effects, and summarises common herb-drug interactions in a table.
- Chapter 9 explains a basic concept of economic evaluation and interpretations of economic results. Decision making for using CAM considers not only the efficacy and safety of CAM, but also economic evaluation. The authors summarise economic evaluation research regarding CAM, although there is a lack of such research in kidney diseases.

- Chapter 10 presents models of CAM integrated into conventional medicine in Western and Eastern regions and definitions of integrative medicine. This chapter highlights the limitations of clinical research in CAM and proposes alternative appropriate methodologies for CAM research. International and national organisations of CAM research are mentioned.

Scientific evidence on CAM is frequently published and research methodologies in are developing. Therefore readers should keep in mind that some contents in this book may be subject to change.

## **CONTRIBUTION**

This book amalgamates recent and essential knowledge of CAM, and is presented from a scientific perspective. Although this book mainly contributes to CAM for kidney diseases, it also provides the general concept of CAM from research to practice. It prepares health care providers to be ready to work in an era of increasing CAM use, especially professionals who take care of patients with kidney disease. This book is appropriate for health care providers who are either unfamiliar with CAM, or are interested in CAM. Additionally, this book suggests future research in the CAM field and would be useful for health researchers.

# Table of Contents

**Foreword** ..... viii

**Preface** ..... x

**Chapter 1**

An Overview of Complementary and Alternative Medicine ..... 1

*Annalisa Casarin, The NIHR Research Design Service East of England, UK*

*Mayuree Tangkiatkumjai, Srinakharinwirot University, Thailand*

*Dawn-Marie Walker, University of Southampton, UK*

**Chapter 2**

CAM Use From Western and Asian Perspectives: Overview of Different Cultural Beliefs of CAM Medicine and Prevalence of Use ..... 24

*Dawn-Marie Walker, University of Southampton, UK*

*Mayuree Tangkiatkumjai, Srinakharinwirot University, Thailand*

**Chapter 3**

An Overview of Publications of Complementary and Alternative Medicine Research ..... 43

*Mayuree Tangkiatkumjai, Srinakharinwirot University, Thailand*

**Chapter 4**

General Approach to Evaluating Beneficial and Adverse Effects of CAM Use in Kidney Diseases ..... 60

*Mayuree Tangkiatkumjai, Srinakharinwirot University, Thailand*

*Chatchai Kreepala, Srinakharinwirot University, Thailand*



## **Chapter 5**

- How to Search and Critique Scientific Evidence for Decision-Making ..... 100  
*Mayuree Tangkiatkumjai, Srinakharinwirot University, Thailand*  
*Win Winit-Watjana, International Medical University, Malaysia*  
*Li-Chia Chen, The University of Manchester, UK*

## **Chapter 6**

- CAM Recommended by Standard Guidelines for Chronic Illnesses ..... 124  
*Annalisa Casarin, The NIHR Research Design Service East of England, UK*

## **Chapter 7**

- Efficacy and Safety of CAM in Kidney Diseases ..... 156  
*Mayuree Tangkiatkumjai, Srinakharinwirot University, Thailand*  
*Chatchai Kreepala, Srinakharinwirot University, Thailand*  
*Li-Chia Chen, The University of Manchester, UK*

## **Chapter 8**

- Herbal Drug Interactions ..... 201  
*Mymoona Akhter, Jamia Hamdard, India*

## **Chapter 9**

- Economic Evaluation of CAM Use ..... 232  
*Li-Chia Chen, The University of Manchester, UK*  
*Mayuree Tangkiatkumjai, Srinakharinwirot University, Thailand*

## **Chapter 10**

- Integrative Medicine and Prospective Research on CAM ..... 272  
*Mayuree Tangkiatkumjai, Srinakharinwirot University, Thailand*  
*Annalisa Casarin, The NIHR Research Design Service East of England, UK*

- About the Authors..... 302

- Index..... 305

# Chapter 1

## An Overview of Complementary and Alternative Medicine

**Annalisa Casarin**

*The NIHR Research Design Service East of England, UK*

**Mayuree Tangkiatkumjai**

*Srinakharinwirot University, Thailand*

**Dawn-Marie Walker**

*University of Southampton, UK*

### ABSTRACT

*A treatment that is not recognised as conventional medicine is frequently referred to as part of complementary and alternative medicine (CAM) methods. This Chapter will provide an overview of the several CAM definitions currently proposed and the types of CAM methods. The prevalence of CAM use and the characteristics and attitudes of CAM users will be also explored with a focus on patients with kidney diseases. The reasons for CAM use and the literature on the placebo effects as a debated hypothesis of CAM mechanism of action is presented.*

DOI: 10.4018/978-1-5225-2882-1.ch001

## **INTRODUCTION**

Complementary and alternative medicine (CAM) has existed in Asian cultures for centuries, recently it has become prominent in the western world. A study published in 2008 showed that 38% of adults and 12% of children used CAM in the United States in 2007 (Barnes, et al. 2008). Most recently, a survey conducted under the cross European CAMbrella project, showed that in Europe one in two surveyed people had used CAM between 2010 and 2012 (EuroCAM, 2014), and it is evident that ancient therapies have been re-discovered by patients in order to find solutions to their increasing numbers of health issues. Writing an overview of CAM is difficult. While the definition of orthodox medicine is well established, CAM techniques are so widely spread across the world and embedded in different cultures that giving CAM a single definition is a challenge. Not only do different organisations define CAM in various ways, but also they include or exclude techniques within this term according to the organisation's beliefs and culture. For example, some people may identify dietary advice, exercise or prayer as CAM, but Asian people do not think that prayer is an alternative medicine as it is a part of their religion.

The interest in CAM may possibly be due to the rising number of concerns that patients have towards orthodox, western medicine. This in turn has led to a call for regulation and proof of efficacy. International establishments like the World Health Organization (WHO), recognize that it is essential to guide this process by suggesting the development of country specific policies (WHO, 2013). The goal of WHO, and CAM practitioner associations, is to analyse the value and safety of CAM interventions with scientific methods in order to best advise patients.

This chapter aims to: explain the difficulties in collating different understanding of CAM practices by Western organisations; discuss the prevalence of CAM use; explore the penchant for CAM seen in patients with renal conditions; and discuss the placebo effect, an important part of all healing processes. Suggestions of future research directions will be presented at the end of this and the following chapters.

## **DEFINITION OF COMPLEMENTARY AND ALTERNATIVE MEDICINE**

A complementary technique is considered as one which falls beyond the scope of orthodox medicine, but which may be used alongside it ([www.OxfordDictionaries.com](http://www.OxfordDictionaries.com) [last accessed 17/03/17]), while an alternative method may be used instead of conventional medicine. Whether a healing method is considered as a CAM depends on the context, or culture in which is used. For example, herbal medicine is considered as traditional and integrative in China, and complementary or alternative in Europe. In regards to context, herbs can be used as a complementary therapy for infertility whilst they can be used as an alternative treatment to medications for urological conditions. In cases of incurable conditions, like end stage kidney failure where only conventional treatment will save the patient, CAM can be offered in order to relieve symptoms associated with the technique or the disease (Barnes et al., 2008). In this case the techniques may be considered complementary because they cannot be offered as alternative to dialysis. Another term frequently used and recently adopted to indicate a combination of CAM techniques and conventional medicine is integrative. In this case, Asian countries led the way in adopting the integration between systems. As Bodeker stated (2001), the Asian experience should be used by western countries when developing policies for integrating two health systems. Chapter 10 will explore the integration concept in depth.

Each CAM may also have differential definitions. Acupuncture, for example, has many different definitions according to context. The Chinese Medicine acupuncture practitioner looks at the symptoms in order to detect energy blocks, and healing ability depends upon emotions that the patient experiences during the appointment. Whilst in the western world, medical acupuncture practitioners evaluate symptoms and deliver treatments thinking of neuromodulating endogenous systems (International Council of Medical Acupuncture and Related Techniques, 2015). Therefore, the definition of a single technique may have different meanings. This makes defining CAM even more difficult.