Journal of Ethnopharmacology 148 (2013) 305–310

Contents lists available at SciVerse ScienceDirect

Journal of Ethnopharmacology

journal homepage: www.elsevier.com/locate/jep

An assessment of the Bhutanese traditional medicine for its ethnopharmacology, ethnobotany and ethnoquality: Textual understanding and the current practices

Phurpa Wangchuk*[,1], Stephen G. Pyne, Paul A. Keller

School of Chemistry, University of Wollongong, NSW 2500, Australia

ARTICLE INFO

Article history:
Received 24 July 2012
Received in revised form
12 April 2013
Accepted 12 April 2013
Available online 24 April 2013

Keywords:
Bhutanese traditional medicine
Medicinal plant
Ethnopharmacology
Ethnobotany
Ethnoquality

ABSTRACT

Ethnopharmacological relevance: This study involves the assessment of the Bhutanese traditional medicine (BTM) which was integrated with the mainstream biomedicine in 1967 to provide primary health care services in the country. It caters to 20–30% of the daily out-patients within 49 traditional medicine units attached to 20 district modern hospitals and 29 Basic Health Units in the country.
Aim of the study: This study presents the ethnopharmacological, ethnobotanical and the ethnoquality concepts in relation to mainstream Tibetan medicine and describes the current practices of BTM.
Materials and methods: Experienced BTM practitioners (*Drung-tshos* and *Smen-pas*) were selected using a convenience sampling method and were interviewed using an open questionnaire followed by informal discussions. The corpus of BTM, Tibetan and scientific literature was obtained and the information on ethnopharmacological, ethnoquality and ethnobotanical concepts and current practices of BTM was extracted.
Results: This study found that the BTM shares many similarities in terms of *materia medica*, pharmacopoeia and the principles and concepts of ethnopharmacology and ethnobotany with its mainstream Tibetan medicine. However, the resourceful Bhutanese *Drung-tshos* and *Smen-pas* have adapted this medical system based on the local language, culture, disease trend, health care needs and their familiarity with the locally available medicinal ingredients making it particular to the country. A number of notable distinctions observed in the current practices include a code of classification of diseases (only 79 of 404 types of disorders recognized), formulations (currently used only 103 of thousands formulation types), usage of medicinal plants (only 229 species of thousands described) and selected treatment procedures (golden needle and water therapy). This BTM was found to cater to 20–30% of daily out-patients visiting 49 modern hospitals and basic health units in the country.
Conclusions: The BTM has been evolved from the Tibetan medicine. While the pharmacopoeia, ethnopharmacology, ethnobotany and the ethnoquality aspects shares commonalities with the mainstream Tibetan medicine, there are some practices unique to BTM. Such uniqueness observed in the current practices of BTM include formulations, medicinal plants collection and usage, and the treatment procedures including golden needle and water therapy. This could be a promising source of information for the rediscovery of useful remedies, the development of modern phytotherapeutics and the establishment of efficient quality control measures.

1. Introduction

In Bhutan, there are two forms of traditional healing systems: the *G.so-ba-rig-pa* medicine and the *Folk Medicine* or *Local Healing Systems*. The practitioners of the *Local Healing Systems* are known as *Folk* or *Local Healers* and include *Lama* (accomplished Buddhist master), *Gom-chen* (layman Buddhist practitioner), *Rtsip* (astrologer), *D.pao* (shaman), *Bon-po* (animistic practitioner), *Ru-to-thue-mi* (bone setter) and *Dug-jib-mi* (poison extractor). Except for highly accomplished Buddhist master like *Lama*, *Gom-chen* (layman Buddhist practitioner), *Rtsip* (astrologer) which mainly practices spiritual healing system, rest of the *Local Healing Systems* are primarily based on oral traditions passed down from generation to generation, from father to son and master to apprentice. The practitioners of *G.so-ba-rig-pa* medicine are known as *Drung-tsho (Traditional Physician)* and *Smen-pa (Traditional Clinical Assistant)*. The Bhutanese *G.so-ba-rig-pa* medicine was adapted from a Tibetan scholarly education system. This medical tradition has properly documented principles, pharmacopoeias, diagnostic procedures and treatment regimens.

* Corresponding author. Tel.: +61 2 4221 4338; fax: +61 4221 4287.
E-mail address: phurpaw@yahoo.com (P. Wangchuk).
[1] Permanent address: Menjong Sorig Pharmaceuticals, Ministry of Health, Thimphu, Bhutan.

0378-8741/$ - see front matter © 2013 Elsevier Ireland Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.jep.2013.04.030

Until the advent of modern allopathic medicine in the 1960s, *G.so-ba-rig-pa* medicine and the *Local Healing Systems* have been the sole health care providers (Wangchuk, 2010). Their practices are still widespread in the country and the recent article by Pelden (2012) which reported the existence of 1683 *Folk Healers* and 112 *G.so-ba-rig-pa* practitioners alongside 1593 modern health care providers supports this. This study deals with the Bhutanese form of *G.so-ba-rig-pa* medicine or popularly known as Bhutanese traditional medicine (BTM).

The BTM was officially recognized and integrated with the mainstream biomedicine health care services in 1967 and today this medical system operates under the guardianship of the Institute of Traditional Medicine Services (ITMS). The ITMS has three main components, the National Institute of Traditional Medicine (NITM) which trains human resources for carrying out the BTM services, the Manjong Sorig Pharmaceuticals (MSP) which collects medicinal plants and manufactures medicines, and the National Traditional Medicine Hospitals (NTMH) which deliver traditional medical services. The NTMH caters to 20–30% of the daily out-patients within 49 traditional medicine units attached to 20 district modern hospitals and 29 Basic Health Units in the country (Wangchuk et al., 2007a).

Since BTM plays a significant role in the primary health care services of the country, the Ministry of Health in Bhutan emphasizes the improvement of the quality, safety and efficacy of its medicine through scientific studies. Therefore, with the aim of generating good scientific data to assist this cause, we have recently engaged in studies of selected medicinal plants used in BTM. The findings in terms of ethnobotanical identification, phytochemical content and biological activity studies were previously reported (Wangchuk et al., 2007b, 2008, 2010a, 2010b, 2011a, 2011b, 2012a, 2012b). These studies required us to first gain an intimate understanding of the BTM, its *materia medica*, pharmacopoeia, concepts, ethnoquality, medicinal plants and its current practices in Bhutan. Therefore, we studied the BTM methods, traditional literature, current BTM practices, BTM practitioners' views and analyzed them with a modern scientific perspective. The outcomes from this study are reported here and are expected to influence our ongoing experiments, guide future scientific research and facilitate comparative studies of the *G.so-ba-rig-pa* medicines practiced in other countries.

2. Materials and methods

Five selected BTM practitioners, *Drung-tshos* and *Smen-pas* with vast experience in the areas of traditional clinical practices, herbal formulations, field identification and collection of medicinal plants were interviewed using a convenience sampling method and an open questionnaire followed by informal discussions. The current practices of BTM were also observed. The literature belonging to BTM (Dorji, 1989; Anonymous, 1999; Tenzin, 2007; Wangdi and Wangdi, 2007; Krug, 2008; Wangchuk, 2008; Gayleg et al., 2010) and the Tibetan *G.so-ba-rig-pa* including Tibetan-based *Amchi* medicine (Choeda, 1989; M.gonpo, 1992; Chophel, 1993; Phuntshok, 1994; Dorji, 1995; Ghimire et al., 1999; Dawa et al., 2001; Lama et al., 2001; Boesi, 2005, 2006; Dekhang, 2008) were consulted. This paper was also proof-read by the selected Bhutanese *Drung-tshos* and *Smen-pas* for its accuracy of BTM information.

3. Results and discussions

3.1. Overview of BTM

The origin and the pharmacopoeias of BTM is closely related to the mainstream Tibetan *G.so-ba-rig-pa* medicine and has been previously reported (Dorji, 1989; Wangdi and Wangdi, 2007; Wangchuk et al., 2007a; Wangchuk, 2008). From our analysis of traditional literature, we found that *Rgyud-zhi* (Four Root Medical Tantras) (Choeda, 1989; M.gonpo, 1992), *Shel-gong-shel-phreng* (Phuntshok, 1994) and as many as 26 other Tibetan contemporary *G.so-ba-rig-pa* related books are in use at the National Institute of Traditional Medicine (NITM) in Bhutan. We found that the concepts and principles of the BTM ethnopharmacology and the ethnobotany to be no different to that of the Tibetan medicine, and these are described here briefly.

Ethnopharmacologically, there are four universal principles: (1) the principle of five cosmo-physical elements (*byung-ba-nga*); (2) the principle of three humors (*nad-pa-g.sum*); (3) the principle of astrology (*rtsi*); and (4) the principle of binary opposition of intrinsic hot–cold quality (*tsha-brang-byung-ba*). Etiologically, about 404 disorders are recognized which are classified into four major categories as: (1) afflictions by spirits (*kuen-rtag-g.don-gyi-nad*); (2) sufferings originating from bad karmic actions of a previous life (*g.shen-d.bang-sgon-les-kyi-nad*); (3) minor ailments that heal by themselves without requiring major medical intervention (*star-snang-'phrel-gyi-nad*); and (4) life threatening diseases based on the principles of the three humors (*yongs-grub-tsheyi-nad*). The *kuen-rtag-g.don-gyi-nad* and the *g.shen-d.bang-sgon-les-kyi-nad* are mainly dealt within the *Local Healing Systems* (not described here), the *star-snang-'phrel-gyi-nad* and the *yongs-grub-tsheyi-nad* are principally dealt by the BTM. These diseases are diagnosed through pulse reading, urine analysis, examination of the physical changes and studies of the patient's medical history.

Ethnobotanically, both BTM and the Tibetan medicine consider the five cosmo-physical elements (earth, water, fire, air and space) as the vital components responsible for the growth of medicinal plants. It is only the matter of balance in these elements that would determine whether the plant is healthy, diseased, toxic or medicinal. Therefore, these five cosmo-physical elements determine the properties *(yon-tan)* like taste *(ro)*, smell *(grim)*, main constituents (*zes'jor*), potency (*ngo-bo-nus-pa*), quality (*pue-tshey)* and other traits of a medicinal plant. In terms of ethnotaxonomical and plant identification framework, we found that the BTM system was similar to what has been described by Boesi (2005, 2006) whose works were based on Tibetan *Rgyud-b.zhi* and *Shel-gong-shel-phreng*. Similar ethnobotanical framework focusing on *G.so-ba-rig-pa* practiced by *Amchis* of Dolpo in Nepal was also reported by Lama et al. (2001) and Ghimire et al. (1999).

While there are many similarities between the mainstream Tibetan medicine and BTM, we also found that there are some practices specific to BTM. The Bhutanese *Drung-tshos* and *Smen-pas* believe that the local beliefs, culture and traditions, and the constant processes of review, adaptation, innovation and evolution made the BTM particular to Bhutan. Such variations are to be expected as the *materia medica* of the mainstream Tibetan medicine should not be considered as standard and static both in time and space, but as a tradition that has been constantly evolving in several countries with its adaptations to local vegetation, culture and foreign influences (Boesi, 2006). The language of a community or a country is also an important factor that can affect description, identification and classification of a plant. For example, the *G.so-ba-rig-pa* medical practitioners in Bhutan are known as *Drung-tsho* and *Smen-pa*, in Tibet as *Gso-gyad* and *Smen-pa*, and in Dolpo (Nepal) and Mongolia as *Am-chis* and *Olamjila Emchi*, respectively.

One of the notable differences is that, the BTM have segregated the medical services, training, and the collection and processing of medicines. The MSP is responsible for the identification, collection and formulation of medicines. To supplement the students' theoretical knowledge, the NITM in collaboration with the MSP, organizes field trips to various medicinal plant collection centres. The MSP also provides apprenticeship or internship for the students of NITM, during which the students learn and experience