

## Traditional and herbal medicine in Bhutan

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## Preface

This project work is in part of the self-directed study in the course 499722 Foreign language for communication in medicine,  
academic year 2021

**“Traditional and Herbal medicine in Bhutan,”** is a project aimed towards medical practitioners and students to provide a short summary of the existing concept of traditional medicine system in Bhutan with a few examples of common medicinal herbs found in Bhutan, in hope that this study may be useful during their practice in local District hospitals and Basic Health Units.

This project would roughly take 2 hours of each person's time to finish reading through once and at the end of it, there is a short survey/questionnaire to test the reader's understanding of the topic along with a satisfaction survey which I would like to kindly ask the dear readers to fill. Your feedback would be immensely appreciated.

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“Self-learning lesson: Traditional and Herbal medicine in Bhutan”

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**Abstract**

The Bhutanese Traditional Medicinal (BTM) system is a science of healing and it is one of the five major subjects among ten fields of cultural studies. Therapy services were established in the hospitals and the Basic Health Units (BHUs) providing complementary care along with the traditional medicine treatments for patients with both human resources and medicine being developed within the country itself. A questionnaire related to the self-learning lesson was conducted among 7 Bhutanese who are working or are currently studying in the medical field consisting of 3 clinical medical students currently studying in Sri Lanka, 2 clinical medical students studying in Thailand, 1 nurse currently studying in Thailand and 1 medical doctor currently working in Bhutan. The questionnaire of 15 questions divided into pre-test and post-test sections, was handed out to assess the success of this lesson. **Result:** The pre-test scores ranged from 7-12 points with an average of 9.71/15. The post test was then conducted after learning the lesson and the scores showed a significant improvement with an average score of 14.57/15, range of 14-15. Then a satisfaction assessment was performed using Google forms of which the average score was 4.65/5(93%) across 5 areas of evaluation which was higher than the preset passing score of 3/5. The objectives of this project work have been completely fulfilled.

Key words: Traditional medicine, Basic Health Units(BHUs), Herbal medicine, *Sowa Rigpa*, Dzongkhags, Gross National Happiness, *Khrog-men*(low altitude medicinal plants), *Ngo-men*(high altitude medicinal plants), Three humors.

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“บทเรียนรู้ด้วยตนเอง เรื่อง การแพทย์แบบดั้งเดิมและสมุนไพรในประเทศภูฏาน”

Thrigyal Lhagari Wangchuk\*

**บทคัดย่อ**

ระบบการแพทย์แบบดั้งเดิมของภูฏาน (BTM) เป็นศาสตร์แห่งการรักษา และเป็นหนึ่งในห้าวิชาหลักจากสิบสาขาวิชาวัฒนธรรมศึกษา บริการการรักษา ก่อตั้งขึ้นในโรงพยาบาลและหน่วยสุขภาพพื้นฐาน (BHUs) ที่ให้การดูแลเสริมควบคู่ไปกับการรักษาแบบแพทย์แผนโบราณสำหรับผู้ป่วยทั้ง ด้านทรัพยากร มนุษย์และยาที่ได้รับการพัฒนาภายในประเทศ แบบทดสอบที่เกี่ยวข้องกับบทเรียนรู้ด้วยตัวเองได้ดำเนินการในกลุ่มชาวภูฏาน 7 คนที่กำลังทำงานหรือ กำลังศึกษาด้านการแพทย์ โดยเป็นนักศึกษาแพทย์คลินิกจำนวน 3 คน ที่กำลังศึกษาอยู่ในประเทศศรีลังกา นักศึกษาแพทย์คลินิกที่กำลังศึกษาอยู่ที่ ประเทศไทยจำนวน 1 คน นักศึกษาพยาบาลที่กำลังศึกษาอยู่ในประเทศไทยจำนวน 1 คน และนายแพทย์ 1 คน กำลังปฏิบัติงานในภูฏาน แบบทดสอบ จำนวน 15 ข้อ แบ่งออกเป็นแบบทดสอบก่อนและหลัง เพื่อประเมินผลลัพธ์บทเรียนรู้ด้วยตัวเองนี้ โดยผลลัพธ์: คะแนนสอบก่อนเรียนรู้อยู่ระหว่าง 7-12 คะแนน ค่าเฉลี่ย 9.71 การทดสอบหลังดำเนินการหลังจากที่ได้เรียนรู้แล้ว และคะแนนมีความแตกต่างอย่างมากด้วยคะแนนเฉลี่ย 14.57/15 คะแนน แบบทดสอบหลังเรียนการอยู่ระหว่าง 14-15 คะแนน จากนั้นจึงทำการประเมินความพึงพอใจโดยใช้ Google forms ซึ่งมีจำนวน 5 ด้านในการประเมิน ซึ่งคะแนนเฉลี่ยอยู่ที่ 4.65/5(93%) ซึ่งสูงการเกณฑ์ผ่านที่กำหนดไว้ล่วงหน้า 3/5 ผลงานนี้บรรลุวัตถุประสงค์ตามที่กำหนดไว้ทุกประการ

คำสำคัญ: การแพทย์แบบดั้งเดิม, สมุนไพร, ประเทศภูฏาน, บริการการรักษา

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## 1. Introduction

Bhutan, is a small landlocked country located in South Asia between massive superpowers India and China, nestled along the eastern slope of the Himalayan mountain range with an elevation of 200 m to more than 7000 m above sea level and a population of 771,612 as of 2021. A developing country renowned for its rich cultural and biodiversity, preserved under the concept of Gross National Happiness which takes a holistic approach towards notions of progress and gives equal importance to non-economic aspects of wellbeing. It is also home to a diverse range of medicinal flora and fauna, abundant resources, with a myriad of endangered/threatened species residing in the many national nature reserve parks located in the country. Therefore, it is no surprise that a country such as Bhutan would pertain to the extensive use of traditional and herbal medicines in this modern day and age.

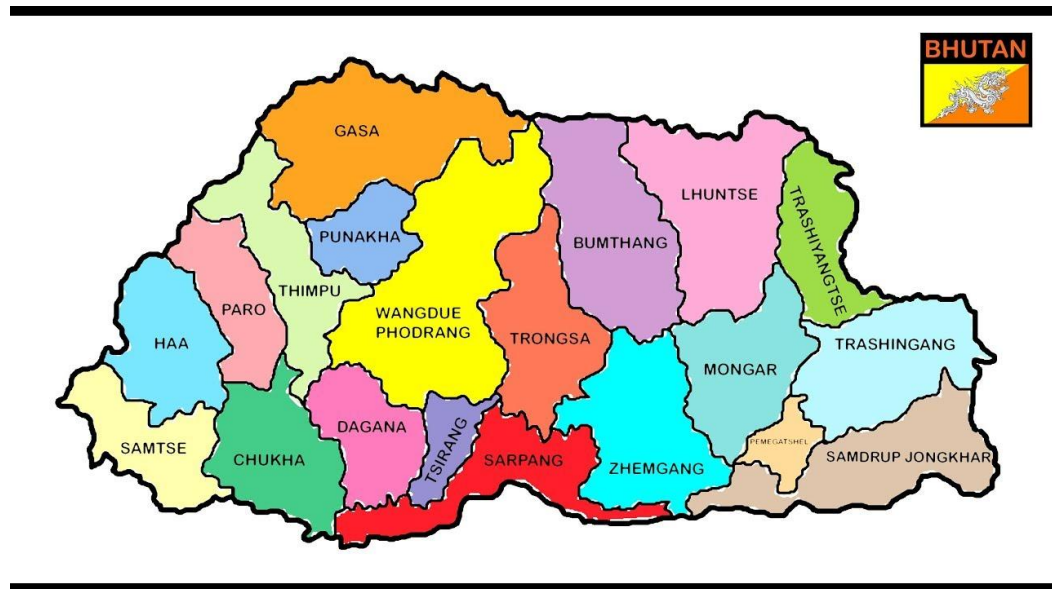
The Bhutanese Traditional Medicinal (BTM) system is a science of healing and it is one of the five major subjects among ten fields of cultural studies. It is one of the oldest surviving medical traditions, in which Buddhist philosophy still remains the mainstream of this medical system. Due to its deep-rooted impact in Bhutan's history and its cultural significance, the Bhutanese Traditional Medicine system came into existence officially in 1968 under the Royal command of His Majesty the 3rd king of Bhutan. Enshrined into the constitution in 2008 ensuring a strong commitment and since its birth, has progressed into a comprehensive medical system witnessing various reforms and growth with its plans and programs streamlined to National Goals and Mandates.

Therapy services were established in the hospitals and the Basic Health Units (BHUs) providing complementary care along with the traditional medicine treatments for patients with both human resources and medicine being developed within the country itself. As of current times, the raw materials used to produce these essential traditional medicines are extensively collected from Thimphu, Trongsa and Bumthang Dzongkhag. However, there is still a lack of proper statistics and detailed records of medicinal resources which limit the study of traditional medicine in Bhutan. Due to this, under the Royal command of His Majesty the Fourth and Fifth Druk Gyalpo, within the 12 Five Year plan, there will be nationwide surveys and mapping of medicinal plants to document their distribution and diversity with the purpose of sustainable use and preservation. This was initiated in 2019.

## 2. Basic Geographical map of Bhutan

Bhutan is a landlocked country located in South Asia. It is divided into 20 districts or *Dzongkhags* namely Bumthang, Chhukha, Dagana, Gasa, Haa, Lhuentse, Mongar, Paro, Pemagatshel, Punakha, Samdrup Jongkhar, Samtse, Sarpang, Thimphu, Trashigang, Trashi Yangtse, Trongsa, Wangdue Phodrang and Zhemgang and the capital is Thimphu (Image 1)

Image 1: Map of Bhutan

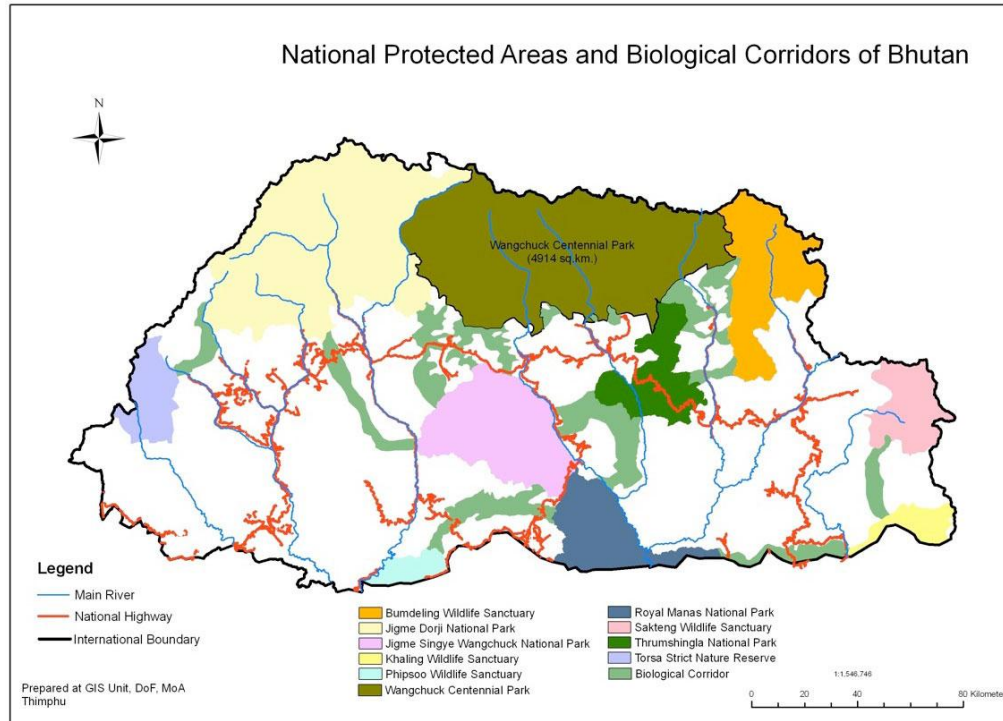


reference:

<https://bhutanage.com/2020/09/20/geography-of-bhutan/>

The protected areas system in Bhutan was initiated in the 1960's. Today, Bhutan has 10 formally protected areas covering more than half of the total area of the country.

Image 2: National Protected Areas of Bhutan



Reference: <https://www.rspnbhutan.org/protected-areas-of-bhutan/>



### 3. Concept of Traditional Medicine in Bhutan

The World Health Organization defines traditional medicine as a “sum total of knowledge, skill, and practices based on theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness.”

The BTM is knowledge and practices based on *Sowa Rigpa* theories and beliefs. *Sowa Rigpa* means “The science of nourishment”, consisting of two words, *Sowa*, which means to heal, nourish, correct and *Rigpa* which means the science or knowledge of. Fundamentally the *Sowa Rigpa* theory states that the human being consists of three basic elements also known as the *Three Humors*. These include *Lung* (Air), *Kripa* (Bile) and *Badkan* (Phlegm). It is believed that these Three Humors each have a different function (Table 1) but are all interrelated and vital in the overall functioning of the body.

Table 1 The Three humors and their functions<sup>[5]</sup>

Humors	Characteristics	Functions
<i>Lung</i> (Air)	Nature of air: rough, light, cold, subtle, hard and mobile	Controls movement and bodily functions such as respiration, excretion, circulation, speech, intellect and impulses. Gives clarity to sense organs and sustains life by means of acting as a medium between mind and body.
<i>Kripa</i> (Bile)	Nature of fire: purgative, oily, fluid, hot, sharp, light and fetid	Controls digestion, assimilation and basic metabolism generating heat and energy. Stimulates feelings of hunger and thirst. Gives luster to body complexion and provides courage and determination.
<i>Badkan</i> (Phlegm)	Nature of cold: oily, cool, heavy, blunt, smooth, firm and sticky	Gives firmness of body, stability of mind, induces sleep, connects body joints, generates tolerance, lubricates the body and regulates the balance of energies.

Each of the three humors of the human body is considered a combination of a further five proto elements of the Universe: *Sa* (Earth), *Chu* (Water), *Mei* (Fire), *Lung* (Air) and *NamKha* (Space). When these elements and proto elements are balanced in an individual, the person is said to be healthy.

Sowa Rigpa includes five kinds of healing methods: behavioral modification, physiotherapy, herbal medicines, minor surgery and spiritual healing. The behavioral and lifestyle changes include diet changes, stopping harmful practices such as smoking and alcohol, getting adequate sleep and physical exercise. Physiotherapy includes acupressure and herbal therapy (herbal baths, herbal steaming, nasal irrigation, and medicinal water baths). Only those patients who suffer from skin diseases, arthritis, old age syndromes, paralysis, are advised to undergo this treatment. The herbal medicines are multi-ingredient compounds and can be used for various purposes. Many of the herbal ingredients used are poisonous in their raw form and require proper methods of detoxification and inspection. Therefore their use is limited. Presently, minor surgery is not commonly practiced in Bhutan, simply because the western surgical methods are more efficient. Spiritual healing includes practices such as meditation and is currently applied in mental health care in Bhutan.

#### 4. Medicinal herbs in Bhutan and Collection of Medicinal plants

According to the *Sowa Rigpa* beliefs, the medicinal raw materials found in Bhutan are divided into three main categories based on their origin. These are:

1. Vegetable origin: This is further divided into *ngo-men*(high altitude medicinal plants, 2000-5000 meters above sea level), *khrog-men*(low altitude medicinal plants, 95-2000 meters above sea level), and *tsi-men*(resins and extracts).
2. Mineral origin: This is further divided into *rinpoche-men*(precious stones and gems), *dho-men*(rocks, rock salts and other base minerals) and *sa-men*(medicinal soil and salts).
3. Animal origin: Also called *rog-chag-men*(13 types of animal parts)

For the manufacturing and collection of any medicinal compounds, the *ches-pai-yang-la-deun*(seven branches of affectionate practice) is very important. These include: (i) Right natural habitat (ii) Right collection time (iii) Right drying (iv) Right storage (v) Detoxification (vi) Smoothing the potency (vii) Right combination of ingredients. These help in maximizing the potency and beneficiary effect of the medicinal compound which in its raw and single form is considered to be toxic. Most of them are practiced currently but due to the Government of Bhutan's policy of self sustenance and exploration of natural resources, practicing all of the seven practices is practically impossible, that too when collection, cultivation and commercialization of the natural product is done on a larger scale.

## 5. Common Medicinal plants

Medicinal plants found in Bhutan are broadly divided into *ngo-men* (high altitude medicinal plants, 2000-5000 meters above sea level) and *khrog-men* (low altitude medicinal plants, 95-2000 meters above sea level). A few examples of these plants of which are in high demand across borders are described below.

### A. *Khrog-men* (low altitude medicinal plants, 95-2000 meters above sea level)



Botanical name: *Aquilaria malaccensis*

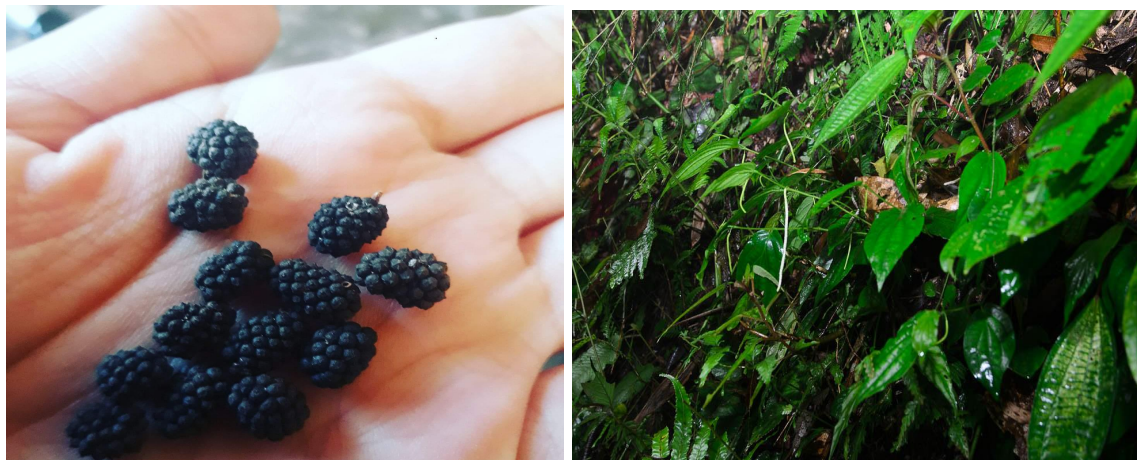
Local name: *Agaru* (Dzongkha) and *Akuru* (Kheng)

Description: Evergreen tree which grows up to 30-40 meters tall

Distribution: Samdrup Jongkhar, Chhukha, Sarpang, Zhemgang

Part used: Wood and Resinous heartwood

Medicinal value: Nervine and refrigerant for *nying-rog* (tendons and other connective tissues that connect to the heart)



Botanical name: *Piper pedicellatum*

Local name: *Pipiling*(Dzongkha) and *Bordamzalu*(Kheng)

Description: Shrub that grows to 1-2 meters tall. Leaves are simple and oval with white flowers. Fruits are round and green which become blackish when ripe.

Distribution: Samtse, Chhukha, Sarpang, Trongsa, Trashigang, Zhemgang

Part used: Fruit

Medicinal value: Aphrodisiac, blood purifier and haematinic. Allays indigestion, flatulence, and asthma. Expectorant and alleviates dry cough. Heals *grang-nad*(disorder associated with coldness with symptoms such as backache, abdominal pain, difficulty passing urine) and *bad-rlung*(complicated disorder arising due to defect in two of the three humors: Phlegm and Air)



Botanical name: *Cassia fistula*

Local name: *Donga*(Dzongkha) and *Dongkashing*(Sha)

Description: Deciduous tree which grows up to 20 meters tall, leaves are opposite and flowers are yellow.  
Pods are woody and black. Seeds are ovate and in line

Distribution: Samdrup Jongkhar, Chhukha, Sarpang, Trashigang

Part used: Seed

Medicinal value: Purgative, laxative, demulcent and allays liver disorders



Botanical name: *Coriandrum sativum*

Local name: *Husu*(Dzongkha and Kheng)

Description: Herb growing up to 60 centimeters tall. Leaves pinnately lobed with white/pinkish flowers.

Distribution: Almost all parts of Bhutan

Part used: Seed

Medicinal value: Lithontriptic and disintegrates small masses in stomach due to defect in *bad-kan*(Phlegm)

B. *Ngo-men*(high altitude medicinal plants,2000-5000 meters above sea level)



Botanical name: *Cordyceps sinensis*

Local name: *Jyar-tsa-guen-bu*(Dzongkha)

Description: Caterpillar shaped roots which is dark brown or black, but can be a yellow color when fresh  
usually 4–10 centimeters

Distribution: Thimphu, Bumthang, Trashi Yangtse

Part used: Whole plant

Medicinal value: Useful for kidney disorders, general tonic, antipyretic, spermatogenesis





Botanical name: *Panax pseudo ginseng*

Local name: *Bingiraza*(Dzongkha)

Description: Short Herb with oval leaves and bright red/blackish fruit

Distribution: Thimphu, Bumthang, Trashigang, Paro, Gasa, Haa

Part used: Rhizomes

Medicinal value: Provides nourishment, improves immune system, stop or slow down bleeding



Botanical name: *Neopicrorhiza scrophulariiflora*

Local name: *Hong-len*(Dzongkha)

Description: Herb with short leaf blade spatulate to ovate, hairy spike with purplish/black flower

Distribution: Thimphu, Bumthang

Part used: Rhizomes

Medicinal value: Anticoagulant, antidiarrheal, hematinic, depurative and febrifuge

## 6. Glossary of Local Terminology

- *Bad-tsad* : Fever associated with Phlegm disorders
- *Chu-ser* : Serum/serous fluid
- *Dhug-nad* : Poisoning
- *Gab-tsad* : Inflammation affecting internal body with no symptoms
- *Gag-lhog* : Laryngitis
- *Glo-nad* : Lung disorders
- *Gnan* : Sepsis/infection
- *Grang-nad* : disorder associated with coldness with symptoms such as backache, abdominal pain, difficulty passing urine
- *Gyur-dug* : Food poisoning
- *G.zer-thung* : Sudden above waist abdominal pain
- *Khrag-khrug* : Disturbance in blood flow
- *Khrag-tsad* : Blood disorder with fever
- *Lhog-pa* : Skin disorder marked by red pustules and rash
- *M.cher-tsad* : Spleen disorder with back pain, whitening of tongue, swelling of stomach area
- *M.khal-rkid* : Kidney disorder with backache and numbness of legs
- *Rgyu-tsad* : Intestinal disorder with fever
- *Rim-tsad* : Common cold
- *Rma-tsad* : Chronic wound with fever
- *Rtsa-tsad* : Neuralgia with fever and other neurological problems such as paralysis
- *Rue-tsad* : Fever due to infection of bones
- *Skad-gag* : Difficulty speaking due to Phlegm or lung disorder
- *Skran* : Pebble like mass
- *Snying-tsad* : Heart disorder with fever, drowsiness, chest pain

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## 8. QR code and link to Post-test and Satisfaction survey



[https://docs.google.com/forms/d/e/1FAIpQLSeH-aKqvADwX46pX\\_L\\_aM7ax70MJD8uAHTNl3D3hr-wamZaFA/viewform](https://docs.google.com/forms/d/e/1FAIpQLSeH-aKqvADwX46pX_L_aM7ax70MJD8uAHTNl3D3hr-wamZaFA/viewform)