A cross-national comparison of medicinal plants used by the Miao, Yi and Lisu ethnic groups in Yanbian, China

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Research

Keywords: Miao medicine, Yi medicine, Lisu medicine, Comparative study, Ethnobotany, Traditional medicine

Posted Date: September 21st, 2020

DOI: https://doi.org/10.21203/rs.3.rs-76207/v1

Abstract

Background

The Miao, Yi and Lisu ethnic groups all have traditional medicinal knowledge, and the unique climate and topography of Yanbian County make it rich in medicinal plants. So the exchange, collision and integration of medical cultures of ethnic minorities in Yanbian County have research significance. The study compared and analyzed the similarities and differences in the traditional medicinal usage of the Miao, Yi and Lisu ethnic groups in Yanbian, to provide the basis for the traditional medicinal culture and characteristics of the three medical systems in southwest China.

Methods

36 sample plots were selected in this study and 5 sample quadrats were randomly set up in each plot to collect specimens. Identified the collected medicinal plant specimens, and sort out the catalog of medicinal plants of Miao medicine (MM), Yi medicine (YM) and Lisu medicine (LM) in Yanbian County. The catalog includes scientific name, family names, latin names, medicinal parts, and diseases treated, etc. The existing traditional doctors were interviewed to supplement the efficacy and usage of the medicinal plants in the catalog. Finally, the similarities and differences of the three medical systems were analyzed and sorted out the special medication in each ethnic group.

Results

Among the medicinal plants collected in the sample plot survey, 345 species of 299 genera and 109 families are used in the 3 medical systems. 102 species are shared-use in MM, YM and LM, among which Compositae (14 species, 14%), Labiatae (6 species, 6%), Polygonaceae (4 species, 4%) and Rosaceae (4 species, 4%) were the dominant families. The statistical data shows that the Jaccard similarity index (JI) of the MM and YM is the highest (47.6%), and the whole similarity percentage of the drug system is the highest (45.9%). A total of 18 special usages were used in MM, YM and LM in Yanbian.

Conclusions

The results show that a large number of shared-use medicinal plants in MM, YM and LM in Yanbian County. The reason may be the intersecting medicine collecting location, frequent market communications and exchanges, and the influence of Han medicine. The more similar geographic environment, vegetation types, lifestyles, and closer spatial distance have resulted in MM and YM in Yanbian County being more parallel than those of LM.

Background

All ethnic groups in China have accumulated rich and unique medical experience in their long-term struggle against diseases. Many ethnic groups live in Southwest China, and these groups generally show the settlement pattern of big mixed, small communities. and generally have ethnic medical knowledge and experience. Some of them have developed medical theory systems, extensively collecting and using local medicinal materials to treat diseases. Most medical theory systems of ethnic minority rely on the passed down through the family, and only a few are recorded in written form [1]. The mutual exchange, influence, and development of medical knowledge and experience of various ethnic groups under the background of the small settlement and large mixed communities is a topic worthy of discussion. According to the data of the sixth national census [2], the Miao nationality ranks 6th, the Yi nationality ranks 7th, and the Lisu nationality ranks 21st in population. The three ethnic groups have their own medicinal characteristics and medical knowledge and experience. For example, the MM has five diagnostic methods: looking, listening, smelling, questioning, and pulse-taking. In treatment, there are seven rules: treating cold with heat, treating heat with cold, treating color with color, determining application by shape, treating the toxifying disease with poisonous agents, treating disease with the restricted thing, reinforcing organ with organ [3, 4]. In the diagnosis of diseases, YM mainly relies on the methods such as inspection, auscultation and olfaction, inquiry, pulse-taking and palpation, and cutting open the chicken to eliminate the disease. In the treatment, the following methods were used: decoction, mash, stimulate acupuncture points with heat, medical steam therapy, medicinal bath, Tuina and massage therapy and bloodletting [5]. LM has the characteristics of witch combination with doctor, drug therapy and spirit therapy work together [6], involving internal medical dept., surgery dept., obstetrics and gynecology dept., pediatrics dept., dermatology dept. and otorhinolaryngology dept.. The traditional treatment methods of Lisu include decoction, cleaning and dropping medicine, cutting the wound to suck out toxins, breaking wounds and draining pus, and whirling to vomiting and detoxification, etc. [7].

Yanbian County is located in the northern of the Yunnan-Guizhou Plateau, the southeastern edge of the Qinghai-Tibet Plateau, and the western edge of the Daliang Mountain. It is in the middle of Chinese Zhang-Yi Corridor [8], is one of the nodes of north-south migration and integration of ethnic groups in southwestern China, and is the main passage of the ancient southern Silk Road [9]. Yanbian is a typical multi-ethnic county in southwest China. 31 ethnic minorities are living in the county for generations, and ethnic minorities account for 30.1% of the county's total population, in descending order of total number of each ethnic group is Yi, Lisu, Miao, Hui, Naxi, Dai, etc. And Yanbian is a rare multi-ethnic settlement of the Miao,

Yi, and Lisu ethnic groups in China [6, 7, 10–17]: most of the Yi and Miao people live in Spa, Gesala and Hongbao Township, which have a high altitude (2200 ~ 4000 m) and steep terrain in the northern part of Yanbian. The Lisu live in Qinghe Township, which has a lower elevation (1500 ~ 2000 m) and a gentle terrain in the northern part of Yanbian County. Guosheng Township, which has a large altitude span and large undulating terrain, is a common distribution area of the three ethnic groups.

Therefore, the main purpose of this study is to take advantage of the 4th National Survey on Chinese Materia Medica Resource to conduct a cross-ethnic comparative analysis of the medicinal plants usage from MM, YM and LY in Yanbian County: The medicinal plants were investigated and collected in Yanbian. The varieties and habits of traditional medicine used in MM, YM and LM were investigated in Yanbian County. Analyzing the similarities, differences and causes of the medicine plants, medicinal parts, and disease treated in MM, YM and LM in Yanbian. The potentially valuable medicinal plants of the three medical systems in Yanbian were sorted out to make contribution to the knowledge and protection of plant biodiversity and the development of traditional medicine.

Materials And Methods

Study area

The study area is Yanbian County, Panzhihua, Sichuan Province, China, including 4 towns and 12 townships such as Tongzilin Town, Qinghe Township, and Hongbao Township. Yanbian is located in the southwestern edge of Sichuan and the north of Panzhihua City (Fig. 1), located at 26°25'~27°21'N and 101°08'~102°04'E. Yanbian County is adjacent to Miyi and Huili County in the east, Renhe District in the south, Huaping County and Ninglang Yi Autonomous County in the west, Liangshan Yi Autonomous Prefecture to the north, with a total area of 3269.453 square kilometers [18]. Yanbian County is a southern subtropical dry-hot valley climate zone, with a typical southern subtropical semi-arid monsoon climate, have warm winters, high spring temperatures, cool summers and autumns, small annual temperature differences, large daily differences, abundant sunshine and evaporation Vigorous, with distinct dry and rainy seasons and concentrated rainfall. Affected by the topography, the temperature in Yanbian County varies significantly vertically, from the valley to the high mountains, there are geographical components such as the southern subtropical zone, mid-subtropics zone, the northern subtropical zone, south temperate zone, and northern temperate zone [19]. Yanbian is known as the plant kingdom of Panzhihua, mount Berlin (Maximum altitude 4195.5 m) is known as a natural treasure house of Chinese herbal medicines, and Ertan Bird Nature Reserve traverses the county. The county has both typical subtropical forests and valley-type Savanna, which are suitable for the growth of various wild plants and have an abuandant diversity of medicinal plants [20].

Plant and information collection

According to relevant field survey documents [21,22], from July to August 2018, this study selected 36 plots for investigation from 46 plots that randomly set up by the Census Office in 16 townships in Yanbian County (Fig. 1). The medicinal plant specimens collected in the sample plot were identified by Qin Songrong, expert of Chongqing Academy of Chinese Materia Medica, with referring to ***Flora Reipublicae Popularis Sinicae*** [23] and confirm their scientific names. The collected voucher specimens are preserved in the Specimen Center of School of Ethnic Medicine, Chengdu University of Traditional Chinese Medicine.

In May 2019, based on the collected medicinal plant specimen information, a semi-structured interview with Miao, Yi, and Lisu traditional doctors was conducted in Yanbian County [24]; a record of the medicinal plant used by local doctors, local name, application, medicinal parts, processing, usage and dosage, contraindications was made to supplement the shared-use medicine catalog, and sort out the usage of special herbal plants in the medical system of various ethnic groups [25-27].

Data processing

Microsoft Excel was used to sort out the shared-use medicine catalog of the three medical systems in Yanbian, listed alphabetically, refer to the ***Dictionary of Chinese Ethnic Medicine*** [28]. The catalog includes the plant's scientific name, family name, Latin name, medicinal parts and diseases treated in the three medical systems [29, 30]. Use https://www.biovenn.nl to make Venn maps online [33], use MultiExperiment Viewer software to draw related heat maps and calculate JI [32].

$$JI = \frac{\mathrm{Na}}{\mathrm{Na} + \mathrm{Nb} + \mathrm{Nc}}$$

Among them, Na is the total number of cross-species in the two ethnic medical systems of A and B, Nb is the total number of medicinal plants used in only the A ethnic medical system, Nc is the total number of medicinal plants used in only the B ethnic medical system.

Use the R Programming Language software to perform cluster analysis on the medicinal parts and diseases treated of shared-use medicines in each two ethnic groups, according to clustering analysis, calculate the similarity percentage of medicinal plants used in the three medical systems and get the table of medicinal plants with the same efficacy in different systems [24].

Results

Shared-use medicine

The sample plot and quadrat survey collected 778 medicinal plant specimens in total. Among them, 345 species of 299 genera and 109 families are used in MM, YM and LM, 206 species are used in MM, 247 species are used in YM, and 205 species are used in LM, and the shared-use medicinal plants of the three medical systems are 102. The situation of the shared-use medicinal plants in the three medical systems is shown in Fig. 3, and the information of shared-use medicine is shown in Table 1.

Among the investigated varieties, there are 35, 61, and 38 medicinal plants only belong to the MM, YM, and LM, accounting for 17%, 24.7% and 18.5% of all varieties used in the MM, YM and LM. The number of shared-use medicines in MM and YM, MM and LM, YM and LM were 146, 126, and 142 respectively, accounting for 32.2%, 30.9% and 31.4% of the total number of varieties used by the corresponding two medical systems. The JI of MM and YM, MM and LM, YM and LM are 47.6%, 44.7%, and 45.8%, respectively; the higher the JI is, the more similar the medicinal plant used in the two medical systems, indicating that the MM and YM have more shared-use medicine plants.

Family distribution

From the dominant 10 families of plants in the utilization rate (Table 2) and the heat map of the families of the medicins plants used in the three medical systems (Fig. 4), it can be seen that Miao, Yi, and Lisu commonly use the plants of 14 families to treat diseases, including Compositae, Lamiaceae, Fabaceae, Rosaceae, Polygonaceae, Euphorbiaceae, Campanulaceae, Ranunculaceae, Apiaceae, Urticaceae, Orchidaceae, Solanaceae, Rutaceae, and Saxifragaceae. Moreover, the family distribution in the YM and LM are the most similar.

146 medicines are shared-use in MM and YM, involving 69 families and 130 genera, the largest families are Compositae (9%)and Cucurbitaceae (9%). 126 medicines are shared-use in MM and LM, involving 69 families and 116 genera, the dominant families are Urticaceae (8%), Lamiaceae (8%), and Acanthaceae (8%). 142 medicines are shared-use in YM and LM, involving 72 families and 129 genera, the dominant families are Caprifoliaceae (8%), Compositae (8%).

There are 102 shared-use medicines in the three medical systems, involving 66 families and 93 genera. Among the shared-use medicines, Compositae (14%) and Lamiaceae (6%) accounted for the dominant proportions (Fig. 5).

medicinal parts

The MM, YM and LM widely use whole plant or roots and rhizomes as medicine, caulis and lignum, folium, fruits and seeds, flowers, cortexs, resin, phycomycete and plant oil are used rarely. The MM and YM are similar in the medicinal parts, while the LM is quite different from the other two medical systems (Fig. 6). Compared with the other two medical systems, the LM have fewer applications of roots and rhizome, caulis and lignum, whole plant and plant oils, and more for resin and phycomycete.

Disease treated and special usages

Compared with the other two medical systems, more medicines are used for the diseases of surgery, anorectal, orthopedics, stomatology, and infectious dept. in YM; more medicines are used for the diseases of ophthalmology and otorhinolaryngology, but fewer medicines are used for the diseases of urological and infection in MM; fewer medicines are used for the diseases of obstetrics and gynecology, orthopedics, surgery, pediatrics, and stomatology in LM. In terms of the types of diseases treated, MM and YM are the most similar (Table 3, Fig. 7).

Partial information on the efficacy of medicinal plants obtained from interviews with key people are recorded in the ***Dictionary of Chinese Ethnic Medicine***, but some are not recorded. The unrecorded informations may be the special usage of medical plants by local Miao, Yi, and Lisu doctors in Yanbian, involving the treatment of rheumatism, snake and insect bites, burns and scalds, cold, strokes and other diseases (Table 4).

Comparison of medicinal

The raw data of the medicinal parts and diseases treated of the medicinal plants shared by every two medical systems are processed according to Table 5 [32], and cluster analysis was performed to obtain clustering analysis results (Fig. 8-10) and the medicinal plants with the same efficacy in different medical systems.

The results of the comparison between the MM and YM peoples (Fig. 8) show that the 146 shared-use medicines, 4 kind of plants have the same medicinal parts and disease treated in the MM and YM: the whole plant of *Eupatorium japonicum* Thunb. is used for the treatment of postpartum lumbar pain and the root is used for the treatment of traumatic injuries; the whole plant of Senecio analogus Candolle can treat influenza, headache, and pyrexia, hemiplegia, rheumatalgia, carbuncle sores, bacillary dysentery, indigestion distension syndrome, weak body physique due to long-lasting diseases snd hemorrhage; the whole plant of *Sagina japonica* (Sw.) Ohwi. is used to treat dermatitis rhus and snake bites; the whole plant of *Selaginella moellendorffii* Hieron. has a therapeutic effect on acute Icteric Hepatitis, phthisic hemoptysis, hemorrhoids, and burns, and scalds.

The results of the comparison between the MM and LM (Fig. 9) show that among the 126 shared-use medicines, 8 plants have the same medicinal parts and disease treated in the MM and LM: the root of *Psammosilene tunicoides* W. C. Wu et C. Y. Wu is used for the treatment of traumatic

injuries, traumatic bleeding, and rheumatalgia; the root of *D. asper* Wallich ex Candolle can treat traumatic injuries, aching lumbus and knees, rheumatic bone pain and functional uterine bleeding; the tuber of *Arisaema erubescens* (Wall.) Schott is used to treat facial hemiplegia, epilepsy, infantile convulsion, wind-phlegm dizziness and painful swelling of the throat; the root of *Scutellaria amoena* C. H. Wright has a therapeutic effect on lung heat cough, diarrhea, acute conjunctivitis, jaundice, metrorrhagia and metro taxis; the cortex of *Alnus nepalensis* D. Don can treat bleeding knife wound, cold, headache, and rheumatic arthrodynia; the fruiting body of *Ganoderma lucidum* (Curtis) P. Karst. is useful for Neurasthenia and chronic bronchitis; the whole plant of *Hemipilia flabellata* Bur. et Franch. is used for the treatment of low fever and lung dryness; the whole plant of *Crotalaria ferruginea* Grah. ex Benth. can treat tinnitus.

The results of the comparison between the YM and LM (Fig. 10) show that among the 142 shared-use medicines, 8 plants have the same medicinal parts and disease treated in the YM and LM: the root of *Phytolacca acinosa* Roxb. is used for the treatment of edema; the tuber of *A. konjac* K. Koch can treat traumatic injuries and rheumatic arthrodynia; the rhizomes of *Curcuma longa* L. is used to treat Pectoral pain and menstrual disorders; the whole plant of *Euphorbia sieboldiana* Morr. et Decne. has a therapeutic effect on traumatic injuries and hemorrhage; the rhizomes of *Paris marmorata* Stearn can treat snake and insect bites, boils and sores, throat sore, and stomachache; the seed of *Vernicia fordii* (Hemsl.) Airy Shaw is useful for dyspeptic abdominal distention andScrofula mange; the whole plant of *Metapanax delavayi* (Franchet) J. Wen & Frodin is used for the treatment of throat sore, cough, indigestion, ascariasis, menstrual disorders, traumatic injuries, enteritis, and rheumatic bone pain; the whole plant of *Peperomia tetraphylla* (Forst. F.) Hooker et Arnott can treat rheumatic arthritis, traumatic injuries, and asthma.

In the clustering analysis results, among the shared-use medicines in MM and YM, MM and LM, YM and LM, the identity rate (The same medicinal plant has the same or similar uses in two medical systems, and the proportion of plants that meet this situation in the total number of the shared-use medicines in the two medical systems.) is 2.7%, 6.3%, 5.6%, the functional equivalents rate (Two different medicinal plants have the same effect in two medical systems and the proportion of plants that meet this situation in the total number of the shared-use medicines in the two medical systems.) is 43.2%, 39.4%, 39.4%, and the similarity percentage is 45.9%. 45.7%, 45%. The MM and YM have the highest similarity percentages, indicating that MM and YMare the most similar, and the two are more closely related.

By comparing the traditional medical systems of the three medical systems, this study found and sorted out 169 functional equivalents composed of 98 plants. See Table 6 for details.

Social status of informants

The seven key informants are all ethnic doctors who are well-known in ethnic minority settlements and still treat patients in Yanbian. And their medical skills come from the elders or self-learning through experience.

Discussion

Family distribution

The 14 dominant plant families in the three medical systems, Polygonaceae, Campanulaceae, Rutaceae and Saxifragaceae are minor families, but many of them are used for medicinal purposes; Rubiaceae, Melastomataceae, Myrtaceae, and Apocynaceae contain many species but few are used for medicinal purposes. This is consistent with the results of our field plant survey in Yanbian. The 14 dominant plant families in the three medical systems, except for Urticaceae and Solanaceae, the other 12 families have the largest number of plant species in Yanbian. The family distribution of plants uses in the three medical systems is basically in line with the vegetation in Yanbian. This is related to the medication of MM, YM and LM. They are good at obtaining local materials, widely using plants that easily available in the surrounding environment to treat diseases that often occur in the living environment, or adopting treatment methods adapted to the local environment [16].

Differences in the diseases treated

The Miao and Yi ethnic groups in Yanbian live on high mountains above 2000m altitude above sea level, and the terrain is steep. Most of them live on stocking pigs and goats, selling wild medicinal plants collected from high mountains, due to the living environment and lifestyle, they are easily injured by accident. The Lisu people live in relatively flat hills, close to towns, and earn a living on doing business or working. Therefore, compared with LM, MM and YM have more medicines for surgical diseases and orthopedic diseases.

The Yi people in Yanbian have a special and single diet: pickles, cured meats, potatoes, and buckwheat cakes are the staple food, and they like to eat rough hard food, fire-roasted food, and have a favor of salty food. They often grab food with their fingers, drinking and smoking frequently, eating the leftovers and keeping irregular eating habits. Such dietary structure and eating habits are particularly unfavorable for the gastrointestinal and oral cavity, causing oral problems easily and increasing the transmission rate of Helicobacter pylori in the population [33, 34]. This may be the reason why Yi people have more drugs in the treatment of anal and rectal diseases, stomatology diseases, and infectious diseases.

Theintegral analysis of the three medical systems

The reasons for the similarity in medications of different medical systems may be the following aspects [35]: The medicinal material does have obvious medicinal effects in a certain aspect. The geographical environment is widely shared, so the types of medicinal plants are similar. Interactions between different medical systems. While the reasons for the differences of the same medicine vary, it could be the following: Different lifestyles and habits. The persistence of each ethnic groups to their own traditional medical knowledge.

The ancestors of White Hmong moved to Yanbian from Zunyi, Guizhou in the 9th year of Hongwu in the Ming dynasty (1376), and the ancestors of Blue Mong moved to Yanbian during the Xianfeng period of Qing dynasty (1851~1864); the Miao nationality has its own language, which belongs to the Miao branch of the Hmong–Mien languages [17]. Most of the Yi people in Yanbian migrated from Daliang Mountain in the north, the earliest Yi people moved in Yanbian around the 13th year of Jiaqing in the Qing Dynasty (1808). The Lisu moved to Yanbian from Lijiang, Yunnan Province in the south of China between the Daoguang (1821) and the Guangxu (1894) period of the Qing Dynasty. The Lisu originated from the ancient Di-Qiang ethnic group who migrated to the southern, and Lisu may belong to the same ethnic origin as the Yi [10,11], Its language belongs to the Tibetan-Burman language as the Yi.

In terms of ethnic origin and language, the Yi and Lisu peoples are closer and should be more conducive to cross-ethnic communication in the use of medicinal plants. However, in this study, regardless of the medicine plants, the medicinal parts, the diseases treated in the medical system, or the whole similarity percentage of the medical system, the YM and MM are closer.

This is because the formation of the theoretical system of the national traditional medicine is a long-term process, and its development must be affected by many factors. Among these influencing factors, the geographical environment is the strongest one [36]. In the long development process, the effect of geographical environment can overwhelm the influence of ethnic origin. Ethnic minorities in China are generally distributed in the form of big inhabitation and small settlements. Sharing the same geographic environment, vegetation type and lifestyle are more conducive to exchanges between ethnic groups. The closer connection between living space and daily life may be the main reason why the MM is closer to the YM in their medicines than the LM in Yanbian.

Although the MM and YM have the highest similarity percentage (45.9%), there is not much difference in the similarity percentages of the three medical systems (MM and LM: 45.7%, YM and LM: 45%); and the three medical systems have a large number of shared-use medicines. This is because The three ethnic groups mixed live in Yanbian, in addition to using the plants around the environment of the small settlement, they also gather medicinal plants in resource-rich areas such as the Bailin Mountain (at the junction of Guosheng Township and Hongbao Township). In addition to the intersection of medicinal collection sites, Yanbian has a developed medicinal market due to its convenient transportation (Fig. 11). A large number of medicinal material vendors set up stalls on the day of village marketing and the customs of the medicinal market during Dragon Boat Festival have strengthened the exchange of medical knowledge of various nationalities. Minority ethnic medicine has had close communication with HM since ancient times [36], and the influence of HM on ethnic medicine after the founding of New China cannot be ignored. The implementation of policies like barefoot doctor program has allowed HM to take root in the remote ethnic minorities, and the popularization of Mandarin and economic development have promoted the exchange and integration of primitive and plain national medicine knowledge and HM knowledge [37,38]. Six of the seven ethnic minority doctors interviewed in this study went to Xichang Health School to study HM systematically in the 1960s and 1970s. During their practice, they extensively combined the Han herbal compound with the national medicine prescriptions. The usage of the bulk medicinal materials in the three medical systems surveyed has a clear trend of convergence with the HM. Such as *D. asper* Wallich ex Candolle is used to treat soreness-tired of waist and knee, rheumatalgia, traumatic injuries, and functional uterine bleeding by the doctors of Han, Miao, Yi, and Lisu, and *A. erubescens* (Wall.) Schott is used to treat facial paralysis, hemiplegia, epilepsy, infantile convulsion, and snake and insect bites by the doctors of Han, Miao, Yi, and Lisu.

Conclusions

This study is a comparative study of the traditional medical system of the Miao, Yi, and Lisu in Yanbian. The 778 plants that obtained through field sample plot surveys in Yanbian, there are 345 species of 299 genera and 109 families medicinal plants are used in the three meidcal systems of Miao, Yi, and Lisu. And 102 species are the shared-use species in the three meidcal systems, which are used to treat diseases such as internal diseases, surgical diseases, skin diseases, anal and rectal diseases.

The MM, YM, and LM in Yanbian use single prescriptions frequently, while use formulas rarely. And they are accustomed to using fresh plants to treat diseases, some medicinal plants will be dried for later use, they seldom use processed medicinal materials. The Miao and Yi peoples are better at treating surgical diseases and orthopedic diseases, which are related to their high-altitude, steep and precarious living environment, and their lifestyle of grazing or gathering. The Yi people are good at treating anal and rectal diseases, stomatology diseases and infectious diseases, which are also related to their habits of eating rough hard food, fire-roasted food and often drink and smoke. Among the three ethnic groups of Miao, Yi, and Lisu in Yanbian, the Miao and Yi have the same medical system. This is because the Miao and Yi people in Yanbian are more closely connected in terms of living space and daily life, which is more conducive to the exchange and integration of the two ethnic groups.

The computer-assisted cross-cultural comparative study on ethnic pharmacy can discover more intersections of different ethnic groups in understanding and using natural medicines. Table 6 lists the medicinal plants with the same therapeutic function in MM, YM and LM in Yanbian,

these medicinal plants with the same function are of great significance and should be recorded in written form, which can be used as the basis for future research on new medicinal resources.

The knowledge of traditional medication of MM, YM and LM has been passed down from generation to generation, and has few written records. On one hand, the existing knowledge of traditional medicine of the local area is mastered by elders over 60 years of age with a lower level of education. Due to the extensive influence of HM, the developed folk medicinal market in the region, the same medicinal material collection sites and the same living environment under the background of the big inhabitation and small settlement, the use of bulk medicinal materials are obviously converging, and a large number of medicinal materials are shared-use. On the other hand, with the development of urbanization and the improvement of the modern medical system in rural areas, the soil for the survival of ethnic medicine is being lost, and the inheritors of ethnic medicine are decreasing. If there is no ethnic medicinal clinic or hospital support in county-level regions, the existence of ethnic medicine will be weakened.

Abbreviations

MM: Miao medicine; YM:Yi medicine; LM:Lisu medicine; JI:jaccard similarity index; HM:Han medicine.

Declarations

Ethics approval and consent to participate

Yuan-chang Cheng, director of the Yanbian County Health Bureau, and the subordinate health centers were informed of this traditional knowledge investigation and participated in and assisted. Before the interview, the interviewee was introduced to the team members and the intention of the visit, and the interviewee's verbal consent was obtained. The authors have all copyrights.

Consent for publication

The informants orally approved their consent for the publications of the shared information and photos.

Availability of data and material

The analysed during the current study are available in the Dictionary of Chinese Ethnic Medicine repository.

Competing interests

The authors declare that they have no competing interests.

Funding

This work was financially supported by the fourth national survey on Chinese material medica resources.

Authors’ contributions

Rui Gu and Shi-hong Zhong designed the study. Ke-ru Wang, Rong Ding, Nan-cuo and Ding-jian Hu collected data through field investigation. Jing Lin participated in data compilation. Ke-ru Wang analyzed the data and compiled the manuscript. All authors read and approved the final manuscript.

Acknowledgements

We are grateful to the County Health Bureau of Yanbian County for their help while carrying out this study. We fully acknowledged the local informants for participating the surveys and sharing their knowledge on the use of medicinal plants with us. Without their contribution, this study would have been impossible. Thanks to Qinghe Wang for her help in the analysis of data and Cheng-hui Wang for his help in writing.

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Tables

Table 1 The Information of shared-use medicine

No.	Family	Chinese name	Scientific name	Uses in MM	Uses in YM	Uses in LM
1	Compositae	□□□	*Achillea wilsoniana* Heimerl ex Hand.-Mazz.	Whole plant: traumatic injury, toothache, rheumatalgia, frequent or severe headaches, stomachache, amenorrhea and abdominal pain, carbuncles and sores, snake and insect bites, innominate inflammatory, mastitis, carbuncles and sores.	Whole plant: snakebite, mastitis, toothache, traumatic injury, dog bites.	Whole plant: rheumatalgia, toothache, amenorrhea and abdominal pain, stomachache, enteritis, dysentery, snakebite, traumatic injury, traumatic hemorrhage.
2	Compositae	□□□	*Bidens pilosa* L.	Whole plant: influenza, swollen sore throat, jaundice hepatitis, enteritis, dyspepsia in children, dysentery, hemorrhoids, snake and insect bites.	Whole plant: snake and insect bites, diarrhea, malarial, hepatitis, acute nephritis, stomachache, esophagus cancer, swollen sore throat, sinusitis, traumatic injury, rheumatism, rheumatalgia, heat strokeacute gastroenteritis, mastitis, urticarial.	Whole plant: upper respiratory tract infection, swollen sore throat, acute appendicitis, acute icteric hepatitis, gastroenteritis, dyspepsia, rheumatism arthralgia, malarial, snakebite, traumatic injury.
3	Lygodiaceae	□□□	*Lygodium japonicum* (Thunb.) Sw.	Whole plant and spore, urinary calculi, fever, urinary system infection, prostatitis edema, hematuria, urinary infection.	Whole plant and spore: urinary system infection, prostatitis edema, dysuria, urinary calculi, urinary infection, nephritis, icteric hepatitis, mastitis, pneumonia, innominate inflammatory.	Whole plant and spore, hepatitis, nephritis, parotitis, japan encephalitis, urinary infection, gonorrhea.
4	Phytolaccaceae	□□	*Phytolacca acinosa* Roxb.	Root: night sweating, edema.	Root: edema, snake bites, dysentery.	Root: scrofula, edema, skin infection.
5	Polygalaceae	□□□□	*Polygala arillata* Buch.-Ham. ex D. Don	Root: lumbagos, fracture, traumatic injury.	Root: menoxenia, hepatitis, urinary infection, upper respiratory tract infection, pneumonia, rheumatalgia, traumatic injury, pulmonary tuberculosis, lung heat cough, toothache, soreness-tired of waist and knee, hypotension, dizziness, nephritis, liver disease.	Root bark: rheumatalgia, traumatic injury, pulmonary tuberculosis, edema, infantile convulsion, pneumonia, hepatitis, acute nephritis, anxious chronic gastroenteritis, pertussis, urinary system infection, early mastitis, upper respiratory tract infection, bronchitis, rheumatic heart disease, lumbagos, uterine prolapse.
6	Caryophyllaceae	□□□	*Psammosilene tunicoides* W. C. Wu et C. Y. Wu	Root: traumatic injury, traumatic bleeding, rheumatic arthritis, stomachache, external use for snake bites.	Root: traumatic injury, rheumatism, traumatic hemorrhage, stomachache, hemiplegia, fracture, cough.	Root: traumatic injury, rheumatalgia, stomachache, external use for traumatic bleeding.
7	Saxifragaceae	□□□□	*Rodgersia sambucifolia* Hemsl.	Rhizome: traumatic injury, fracture, menoxenia, traumatic bleeding.	Rhizome: diarrhea, traumatic hemorrhage, dyspeptic abdominal distention, rheumatalgia, dysentery, stomachache, traumatic injury, dysmenorrhea, menoxenia.	Rhizome: coldheadache, rheumatic fracture pain, enteritis, traumatic hemorrhage, traumatic injury, diarrhea, gastropathy,

						traumatic injury, fracture, menoxenia, traumatic bleeding, senile chronic bronchitis.
8	Compositae	□□□	*Senecio scandens* Buch.-Ham. ex D. Don	Whole plant: upper respiratory tract infection, nephritis, pneumonia, impetigo, urticaria, dysentery, eczema, enteritis, acute keratitis, allergic dermatitis, eczema, trichomoniasis, cold. Folium: fever.	Whole plant: rheumatalgia, acute conjunctivitis, eczema, dermatitis, keratitis, skin infection, menoxenia, diarrhea, cold, malarial, scrofula, rheumatism arthralgia, hemorrhoids, swollen sore throat, syphilis, innominate inflammatory, nyctalopia, chronic conjunctivitis. Root: inflammation of eyes, traumatic injury, ecchymoma pain, dysentery, syphilisgonorrhea, hemorrhoids, eczema, insect and snake bites.	Whole plant: eczema, upper respiratory tract infection, nephritis, laryngopharyngitis, pneumonia, eye conjunctivitis, dysentery, enteritis, appendicitis, acute lymphangitis, erysipelas, allergic dermatitis, hemorrhoids, acute conjunctivitis, dermatitis, rheumatic arthritis.
9	Solanaceae	□□	*Solanum nigrum* L.	Whole plant: skin infection, carbuncles, erysipelas, parotitis, acute nephritis, urethritis, leucorrhoea, traumatic injury, chronic bronchitis, nephritis. Root: coughhemoptysis, menoxenia.	Whole plant: snake bites, skin infection, cough, hepatitis, liver disease, bladder stone, urinary infection, rheumatism, traumatic injury.	Whole plant: skin infection, carbuncles, erysipelas, traumatic injury, chronic bronchitis, acute nephritis.
10	Boraginaceae	□□□	*Cynoglossum amabile* Stapf et Drumm.	Whole plant: hepatitis, dysentery, cough.	Whole plant: rheumatism, menstrual disorders, infertility. Root: cystitis, urethritis, dysuria, dysuria, hepatitis, malarial, traumatic hemorrhage, abnormal leukorrhea, dystocia, hepatitis, leucorrhoea, dysentery, hernia. Folium: hernia.	Whole plant: malarial, hepatitis, dysentery, leucorrhoea, pulmonary tuberculosis, traumatic bleeding, fracture.
11	Lamiaceae	□□□	*Leonurus japonicus* Houttuyn	Whole plant: menoxenia, dysmenorrhea, amenorrhea, edema in acute nephritis, leucorrhoea, abortion. Root bark: hematuria.	Whole plant: menoxenia, acute mastitis, traumatic injury, afterpains, acute glomerulonephritis, postpartum uterine contraction, edema, dystocia.	The whole plant and seed: menoxenia, dysmenorrhea, afterpains, nephritis, dysuria, hematuria, boils and sores.
12	Punicaceae	□□	*Punica granatum* L.	Fruit, flower, root and root bark: ascariasis, taeniasis, diarrhea, leucorrhoea.	Pericarp: epistaxis, hemafecia, metrorrhagia and metrostaxis. Pericarp and folium: diarrhea, hemafecia, prolapse of rectum, functional uterine bleedingabnormal leukorrhea, ascariasis. Folium: leprosy, traumatic injury. Flower: epistaxis, tympanitis, traumatic bleeding. Fruit: flaccid limbs, dysentery, ascariasis, throat sore. Stem bark: bloody dysentery, chyluria, epistaxis. Whole plant: traumatic injury, cough.	Bark of fruit and Root: diarrhea, enteritis, dysentery, hemafecia, prolapse of rectum, functional uterine bleeding, taeniasis, ascariasis. Flower: hematemesis, traumatic hemorrhinia, tympanitis. Folium: acute enteritis.
13	Compositae	□□	*Arctium lappa* L.	Fruit, root and	Root and folium:	Fruit: cold, headache,

				folium: fever, cough, constipation, cold, swollen sore throat, measles, boils and sores, headache, parotitis, cough, constipation	gastropathy, skin infection, cold, pertussis, hemorrhoids, measles, swollen sore throat. Root: boils and sores, postnatal lack of lactation. Fruit: measles.	swollen sore throat, parotitis. Root: cold, swollen sore throat, skin infection, fungal infection, eczema, nephritis, cystitis.
14	Loganiaceae	□□□	*Buddleja officinalis* Maxim.	Flowe, root and folium: inflammation of eyes, dizziness.	Flowe, root and folium: inflammation of eyes, pterygium, pertussis, asthma, hepatitis. Root: snakebite. Whole plant: allergy.	Flower: inflammation of eyes, pterygium.
15	Caprifoliaceae	□□□	*Dipsacus asper* Wallich ex Candolle	Root: fracture, traumatic injury, threatened abortion, seminal emission, abnormal leukorrhea, skin infection, lumbagos, stomachache, abdominal pain, rheumatic fracture pain, functional uterine bleeding.	Whole plant: soreness-tired of waist and knee, rheumatic arthritis, threatened abortion. Root: rheumatism, asthma, aching loin and knees, traumatic hemorrhage, traumatic injury, flaccid limbs, metrorrhagia and metrostaxis, abdominal pain, stomachache, snakebite, skin infection, pulmonary tuberculosis, stomachache.	Rhizome: aching loin and knees, rheumatic fracture pain, fracture, traumatic injury, functional uterine bleeding, leucorrhoea, seminal emission, frequent urination.
16	Compositae	□□	*Eclipta prostrata* (L.) L.	Whole plant: traumatic hemorrhage, dizziness, kidney deficiency, hemorrhinia, hemafecia, metrorrhagia and metrostaxis, traumatic hemorrhage, menoxenia, abdominal distension, diarrhea.	Whole plant: hepatitis, hemorrhoids, hemorrhinia, hemoptysis, traumatic hemorrhage. Root: hematocheziahematuria, bloody dysenterymetrorrhagia and metrostaxis, pruritus vulvae.	Whole plant: hemoptysis, hemorrhinia, hematuria, hemafecia, hepatitis, enteritis, dysentery, dyspepsia in children, kidney deficiencytinnitus, neurasthenia.
17	Polygonaceae	□□□	*Fagopyrum dibotrys* (D. Don) Hara	Rhizome: dyspepsia, pulmonary tuberculosis, mastitis, traumatic injury, metrorrhagia and metrostaxis, dysentery, lyssodexis, lung abscess. Whole plant: stomachache, abdominal pain, hyperthyroidism, snakebite.	Whole plant and rhizome: dyspepsia, stomachache, enteritis, rheumatism, carbuncles, dysmenorrhea, amenorrhea, dysentery, swollen sore throat, hepatitis, pneumonia, leucorrhoea, acute suppurative mastitis, scrofula	Rhizome: swollen sore throat, pneumonia, stomachache, hepatitis, dysentery, dyspepsia, external use for scrofula.
18	Apiaceae	□□	*Foeniculum vulgare* Mill.	Fruit: hernia. Whole plant: abdominal pain, dysmenorrhea, emphysema, cholera, emesis, hernia, measlesfever. Root: rheumatic fracture pain.	Root: emesis, abdominal distension.	Whole plant, root and seed: stomachache, dysmenorrhea, hernia, hydrocele of the tunica vaginalis, schistosomiasis.
19	Geraniaceae	□□□□□	*Geranium nepalense* Sweet	Whole plant: rheumatalgia, traumatic injury, dysentery, skin infection fracture.	Whole plant and Root: traumatic injury, rheumatalgia, the bite of insect, snake, dog.	Whole plant: rheumatoid arthritis, traumatic injury, sciatica, acute gastroenteritis, dysentery, menoxenia.

20	Urticaceae	□□□	*Gonostegia hirta* (Bl.) Miq.	Whole plant: acute suppurative mastitis, skin infection, dysentery, edema, indigestion.	Root: skin infection, traumatic injury, fracture.	Whole plant: skin infection, carbuncles, scrofula, dysentery, leucorrhoea, dyspepsia in children, hematemesis, traumatic hemorrhage.
21	Rubiaceae	□□□	*Paederia foetida* L.	Whole plant and Root: rheumatic arthritis, dyspeptic abdominal distention, dyspepsia in children, diarrhea, dysentery, jaundice, burns and scalds, eczema, skin infection , gastritis, traumatic injury.	Whole plant and Root: stomachache, menoxenia, hepatitis, dyspeptic abdominal distention, traumatic injury, abdominal pain swollen sore throat, dystocia, neurodermatitis, chronic osteomyelitis, leprosy, ascariasis.	Whole plant: rheumatalgia, traumatic injuries. Stem: dizziness. Root: menoxenia.
22	Plantaginaceae	□□	*Plantago asiatica* L.	Whole plant: dysuria, inflammation of eyes, urinary infection, urinary calculi, bladder stone, dysentery, hemorrhinia, hematuria, traumatic bleeding, swollen sore throat, carbuncles and sores, amenorrhea	Seed: dysentery. Whole plant: cough, urinary infection, measles, skin infection.	Whole plant: dysentery. Petiole: ascariasis
23	Crassulaceae	□□□□	*Rhodiola yunnanensis* (Franch.) S. H. Fu	Root: traumatic injury, rheumatoid arthritis. Whole plant: traumatic bleeding.	Whole plant or rhizome: traumatic injury, fracture, rheumatism, pharyngitis, dysentery.	Whole plant: fracture, rheumatoid arthritis, mastitis.
24	Polygonaceae	□□□□	*Rumex nepalensis* Spreng.	Root: pulmonary tuberculosis, hepatitis, dysentery, constipation, hemorrhoids, hematemesis, functional uterine bleeding, traumatic hemorrhage, burns and scalds, external use for parotitis, neurodermatitis, scrofula, acute suppurative mastitis, traumatic hemorrhage.	Root: constipation, jaundice, pulmonary tuberculosis, hepatitis, dysentery, hemorrhoids, functional uterine bleeding, scrofula, skin infection, traumatic injury, diarrhea, parotitis, neurodermatitis, traumatic hemorrhage, burns and scalds, toothache.	Root and folium: pulmonary tuberculosis, hepatitis, dysentery, constipation, functional uterine bleeding, hemorrhoids, external use for parotitis, scrofula.
25	Gentianaceae	□□□□	*Gentiana rubicunda* Franch.	Root or whole plant: rheumatismaching loin and knees, nephritis, traumatic injury, hemorrhoids, acute gastritis, jaundice, lung heat cough, dysuria, skin infection carbuncles, inflammation of eyes, pneumonia.	Whole plant: inflammation of eyesheadache, swollen sore throat, epilepsy, macule, pruritus vulvae, traumatic injury, urinary infection, cystitis toothache, sore throat, infantile convulsion, lumbagossoreness of waist.	Whole plant and Root: puerperal fever, infantile convulsion, scalds, bloody sputum due to heat in the lung, jaundice, dysentery, stomachache, hemafecia, pulmonary tuberculosis, asthma, dysuria, dyspepsia in children, jaundice hepatitis, external use for skin infection.
26	Nyctaginaceae	□□□	Mirabilis jalapa L.	Root: prostatitis, leucorrhoea, articular pain,	Root: dysuria, abdominal distension, traumatic injury, skin	Whole plant and Root: nephritis, menoxenia,

				carbuncles and sores, acute suppurative mastitis, traumatic injury. Whole plant and Root: menoxenia, leucorrhoea.	infection. Whole plant: articular pain, menoxenia, traumatic injury, eliminate blood stasis.	prostatitis, external use for mastitis, traumatic injury.
27	Araceae	□□	*Amorphophallus konjac* K. Koch	Tuber: traumatic injury, skin infection, snakebite.	Tuber: traumatic injury, eliminate blood stasis, rheumatoid arthritis.	Tuber: traumatic injury, rheumatoid arthritis.
28	Araceae	□□□□□	*Arisaema erubescens* (Wall.) Schott	Tuber: facial paralysis, hemiplegia, epilepsy, infantile convulsion, snakebite, innominate inflammatory, rheumatalgia, facial paralysis, rheumatalgia, painful swelling of the throat, carbuncles, traumatic injuries.	Tuber: facial paralysis, stomachache, traumatic injuries, snake and dog bites, fracture, rheumatalgia, snakebite, chest pain, hemiplegia, epilepsyinfantile convulsion, wind-phlegm dizziness.painful swelling of the throatcarbuncles, traumatic injury, snake and insect bites, postpartum hemorrhage.	Tuber: facial paralysis, hemiplegia, epilepsy, infantile convulsion, tetanus, wind-phlegm dizziness, painful swelling of the throat, scrofula, carbuncles, traumatic injuries, snake and insect bites.
29	Apiaceae	□□□	Centella asiatica (L.) Urban	Whole plant: fever, cough, swollen sore throat, urinary calculi, menoxenia, hepatitis, urethritis, gastritis, jaundice, enteritis, dysentery, edema, hematuria, dysmenorrhea, metrorrhagia and metrostaxis, scrofula, skin infection, herpes zoster, traumatic injury, traumatic hemorrhage, snake and insect bites.	Whole plant: hepatitis.	Whole plant: cold, heat stroke, nephritis, pleurisy, urinary system infection, hepatitis, dysentery, traumatic injury, snakebite, skin infection, herpes zoster.
30	Compositae	□□□□□	*Crepis napifera* (Franch.) Babcock	Root: dyspeptic abdominal distention, intestinal colic, dysentery.	Root: oral ulcer, stomachache, bronchitis, laryngopharyngitis, traumatic injury. Whole plant and Root: fever, cough, cough, dyspepsia in children, acute gastroenteritis, fracture.	Root: nyctalopia, bronchitis, pertussis, abdominal distension, abdominal pain. Whole plant: external use for fracture.
31	Fabaceae	□□□	*Crotalaria ferruginea* Grah. ex Benth.	Whole plant: rheumatoid arthritis, tinnitus, seminal emission in kidney-deficiency syndrome.	Whole plant and root: fever, phlegm dyspnea, cough, intestinal colic.	Whole plant: bloody sputum, tinnitus, deafness, nephritis.
32	Campanulaceae	□□□□□	*Lobelia angulata* Forst.	Whole plant: rheumatalgia, lung abscess, lymphadenitis, dyspepsia in children, acute gastroenteritis.	Whole plant: traumatic injury, rheumatalgia. seminal emission, scrofula, afterpains, menoxenia, leucorrhoea, congestion, dysmenorrhea, toothache.	Whole plant: cough, lymphadenitis, traumatic injury, uterine prolapse.
33	Moraceae	□□	*Broussonetia papyrifera* (Linnaeus) L'Heritier ex Ventenat	Fruit: dizziness, impotence, edema, soreness-tired of waist and knee, postpartum milk atresia. Stem, folium and latex: edema,	Stem: stomachache, kidney deficiency, fungal infection.	Flower, folium, bark and seed: dizziness, edema.

				inflammation of eyes.		
34	Cornaceae	□□□	*Alangium chinense* (Lour.) Harms	Root: rheumatic fracture pain, traumatic injury, traumatic hemorrhage. Folium: traumatic hemorrhage.	Root: jaundice, abdominal paindystocia, rheumatic fracture pain, hemiplegia, traumatic injury, afterpains.	Root: traumatic injury.
35	Ranunculaceae	□□□	*Anemone rivularis* Buch.-Ham.	Whole plant: swollen sore throat, stomachache, scrofula, malarial, cough, lymphnoditis, jaundice, rheumatalgia, toothache, traumatic injury. Root: swollen sore throat.	Whole plan, root and folium: toothache, headache, rhinitis, rheumatalgia, malarial. Whole plan: postnatal lack of lactation, cold, malaria, diarrhea. Root and whole plant: malarial, stomachache, innominate inflammatory.	Root: pulmonary tuberculosis, parotitis, rheumatalgia, stomachache, traumatic injury, malarial, hepatitis, liver cirrhosis.
36	Urticaceae	□□	*Boehmeria nivea* (L.) Gaudich.	Whole plant: eczema, menometrorrhagia.	Root: fracture, cold, measles, urinary infection, nephritis, threatened abortion, traumatic injury, impaired vision, traumatic injury, boils and sores, eye conjunctivitis. Folium: rheumatism, menstrual disorders, abortion, epistaxis, hematuria, hemorrhoids.	Root: leucorrhoea, erysipelascarbuncles, traumatic injury, snake and insect bites.
37	Solanaceae	□□□	*Datura stramonium* L.	Flower, folium and seed: cough, beriberi. Folium and flower: gingival inflammation.	Flower: stomachache. Fruit: toothache, bronchitis, asthma. Seed: toothache, dental caries, dog bites, traumatic injury. Folium: cough, stomachache, rheumatalgia, skin infection, snakebite. Whole plant: fracture.	Flower: asthma, abdominal pain, rheumatic arthritis, beriberi.
38	Compositae	□□□□	*Erigeron breviscapus* (Vant.) Hand.-Mazz.	Whole plant and Root: cold, hemiplegia, dyspepsia in children, stomachache, toothache, traumatic injury. Whole plant: headache, dizziness, rheumatoid arthritis, stomachache, toothache.	Whole plant and Root: Caries toothache. Root: neurasthenia. Whole plant: rheumatalgia, stroke, bronchitis, infantile paralysis, traumatic injury, oral ulcer, coldheadache, rheumatism, toothache.	Whole plant: coldheadache, toothache, stomachache.
39	Oxalidaceae	□□□	*Oxalis corniculata* L.	Whole plant: dysuria, dystocia, fungal infection, herpes zoster, impetigo, urinary infection, urinary system infection, prostatitis, neurasthenia, insomnia, pneumonia, nephritis, hepatitis, infant respiratory tract infection.	Whole plant and Root: cold, menoxenia, hemorrhoids, toothache, lumbagos, fracture, \ eliminate blood stasis, hemorrhoids, prolapse of rectum. Whole plant: traumatic injury, rheumatism, scalds	Whole plant: coldfever, enteritis, hepatitis, urinary infection, neurasthenia. Folium: external use for traumatic injury, carbuncles.
40	Rutaceae	□□□	*Boenninghausenia albiflora* (Hook.) Reichb. ex Meisn.	Whole plant: acute enteritis, malarial, traumatic injury,	Whole plant and Root: cold, fever, abdominal distension, traumatic	Whole plant: malarial, bronchitis, swollen sore throat,

				skin infection malarial, cold, throat sore, hepatitis, congestion.	injury. Whole plant: swollen sore throat, chronic gastritis, loin pain in kidney-deficiency snydrome, dysentery, carbuncles, malarial.	influenza, external use for skin infection, allergy.
41	Zingiberaceae	□□	*Curcuma longa* L.	Rhizome: jaundice, traumatic injury, amenorrhea, menoxenia, dysmenorrhea, afterpains, rheumatic arthritis, headache.	Rhizome: cough and asthma, menoxenia.	Rhizome: menoxenia, amenorrhea.
42	Dioscoreaceae	□□	*Dioscorea bulbifera* L.	Tuber: painful swelling of the throat, carbuncles and sores, hematemesis, traumatic hemorrhinia, lymphoid tuberculosis, snakebite, tumor, hemoptysis, pertussis, cough, skin infection.	Tuber: skin infection, hemorrhinia, hemafecia.	Tuber: hemorrhinia, painful swelling of the throat, skin infection, scrofula.
43	Portulacaceae	□□□	*Portulaca oleracea* L.	Whole plant: dysuria, dysentery, leucorrhoea, metrorrhagia and metrostaxis, hemorrhoids, scrofula, fungal infection, edema, urinary infection, hemorrhoids, enteritis, dysentery, throat sore , toothache, innominate inflammatory, nephritis, diarrhea, herpes zoster, external use for innominate inflammatory.	Whole plant: dysentery, fracture, lung abscess, prostatitisabnormal leukorrhea, hemorrhoids, snakebite, enteritis, pertussis, pulmonary tuberculosis, dysentery, fungal infectionnephritis, hematuria, rheumatism.	Whole plant: acute gastroenteritis, dysentery, appendicitis, mastitis, hemorrhoids, leucorrhoea, external use for localized skin infection, eczema.
44	Lamiaceae	□□□	*Scutellaria amoena* C. H. Wright	Root: lung heat cough, inflammation of eyes, jaundice, dysentery, prostatitis, metrorrhagia and metrostaxis, carbunclesskin infection.	Root and rhizome: dysentery, parotitis, liver disease, children with acute respiratory tract infection, chronic bronchitis, leptospirosis, hepatitis, nephritis, hypertension, indigestion, inflammation of eyes, prostatitis, constipation, white dysentery, stomachache, metrorrhagia and metrostaxis.	Root: cough, dysentery, jaundice, prostatitis, inflammation of eyes, threatened abortion, metrorrhagia and metrostaxis, carbuncles.
45	Lamiaceae	□□	*Elsholtzia ciliata* (Thunb.) Hyland.	Whole plant: heat stroke, dyspepsia.	Root and folium: traumatic injury, eliminate blood stasis, dysuria. Root: fever, abdominal paindiarrhea.	Whole plant: cold, fever, heat stroke, acute gastroenteritis, halitosis, dysuria.
46	Orchidaceae	□□□□	*Habenaria dentata* (Sw.) Schltr	Rhizome: loin pain in kidney-deficiency syndrome.	Root: prostatitis.	Tuber: soreness of waist, orchitis, urinary infection, hernia, stomachache.
47	Juglandaceae	□□	*Juglans regia* L.	Seed: flaccid limbs, prostatitis, seminal emission in kidney-deficiency syndrome, cough,	Seed: kidney deficiency, seminal emission in kidney-deficiency syndrome, constipation, soreness-tired of waist and knee, urethritis,	Fruit: kidney deficiency, cough, flaccid limbs, seminal emission in kidney-deficiency syndrome, urethritis,

				intestinal constipation, urethritis, scrofula. Fruit: hernia, fungal infection.	dermatitis, eczema. Fruit: kidney deficiency, soreness of waist, seminal emission, frequent urination, syphilis, impetigo, fungal infection, urticaria, asthma, liver disease, external use for scrofula, stomachache, chronic bronchitis. Folium: skin disease.	urethritis, constipation. Folium: hemorrhoids, edema.
48	Lamiaceae	□□	*Perilla frutescens* (L.) Britt.	Folium and stem: cold. Folium: heat stroke, abdominal pain. Whole plant: cough and asthma. Folium: emesis.	Fruit: coldcough.	Whole plant: cold, headache, pulmonary tuberculosis, swollen sore throat, rheumatism.
49	Coriariaceae	□□	*Coriaria nepalensis* Wall.	Root and folium: tinea capitis, epilepsy, fungal infection, traumatic hemorrhage. Folium: skin infection, eczema, scrofula, burns and scalds, impetigo. Root: rheumatic arthritis, toothache, scrofula, acute conjunctivitis, scrofula, lyssodexis, traumatic injury.	Root and folium: tinea capitis, traumatic injury, rheumatalgia, eczema. Whole plant: traumatic injury, traumatic injury, rheumatism, calds, itchiness. Folium: boils and sores.	Stem: fracture. Root and folium: scrofula, toothache, traumatic injury, rheumatism arthralgia, external use for tinea capitis, eczema.
50	Compositae	□□□	*Elephantopus scaber* L.	Whole plant: insect and snake bites, nephritis enteritis, nephritisedema, malarial, cold, eye conjunctivitis, skin infection, eczema, insect and snake bites, laryngopharyngitis, jaundice, dysentery.	Whole plant: skin infection, acute suppurative mastitis, swollen sore throat, cold, pertussis, hepatitis, cirrhosis ascites, acute nephritis, enteritis, dysentery.	Whole plant: cold, acute tonsillitis, swollen sore throat, epidemic encephalitis b, pertussis, hepatitis, cirrhosis ascites, acute or chronic nephritis.
51	Rosaceae	□□	*Eriobotrya japonica* (Thunb.) Lindl.	Root: hepatitis, postnatal lack of lactation, rheumatic arthritis. Folium: lung heat cough, emesis, vomiting of pregnancy.	Folium: pulmonary tuberculosis, cough. Bark: pertussis in children, bronchitis.	Flower and folium: cough, hematemesis, emesis.
52	Eucommiaceae	□□	*Eucommia ulmoides* Oliver	Bark: threatened abortion, dizziness, aching loin and knees, hypertension.	Bark: loin pain in kidney-deficiency snydrome, flaccid limbs, rheumatic fracture pain, threatened abortion, impotence.	Bark: lumbagos, rheumatism, vertigo, hypertension, threatened abortion, traumatic injury.
53	Rutaceae	□□□	*Tetradium ruticarpum* (A. Jussieu) T. G. Hartley	Fruit: pain and coldness in the lower abdomen, headache, hernia, dysmenorrhea, beriberi, acute gastroenteritis, dysmenorrhea, stomachache.	The fruit, bark and folium: hernia, gastric ulcer, impetigo.	Fruit: emesis, headache, abdominal distension, beriberi, hernia, oral ulcer, eczema, impetigo.
54	Malvaceae	□□□	*Hibiscus mutabilis* L.	Fruit: cough, hematemesis, inflammation of eyes, metrorrhagia and metrostaxis, diarrhea,	Root: cough, traumatic injury. flower and folium: parotitis.	flower, folium and Root: cough, menometrorrhagia, external use for carbuncles, mastitis,

				carbuncles, skin infection, snakebite, scalds, traumatic injury. The flower and folium: carbuncles and sores. The flower, folium and Root: mastitis, acute suppurative mastitis, leucorrhoea.		parotitis, traumatic injury.
55	Bignoniaceae	□□□	*Incarvillea arguta* (Royle) Royle	Whole plant: dysentery, stomachache, rheumatalgia, menoxenia, carbuncles, fracture, cholecystitis, cholelithiasis, kidney calculi, bladder stone, hepatitis, dysentery.	Whole plant: hepatitis, dysentery, carbuncles, fracture, rheumatism, liver disease, diarrhea, toothache, innominate inflammatory, hemorrhoids, traumatic bleeding, syphilis.	Whole plant and rhizome: rheumatic fracture pain, menoxenia, external use for carbuncles, fracture.
56	Juncaceae	□□□	*Juncus effusus* L.	Whole plant and stem pith: gonorrhea, dysuria, jaundice, painful swelling of the throat, oral ulcer, fever.	Whole plant: coldfever, toothache, edema, urinary system infection. Stem pith: heat stroke. Root: congestion, toothache, urticaria, syphilis, scalds.	Stem pith: oral ulcer, urinary infection, malarial.
57	Compositae	□□	*Aster indicus* L.	Whole plant and Root: dyspepsia in children, traumatic bleeding, hematemesis, traumatic hemorrhinia, bloody dysentery, metrorrhagia and metrostaxis, jaundice, edema, cold, throat sore painful swelling of the throat, hemorrhoids, erysipelas, hemafecia. Whole plant: hematemesis, parotitis, chronic gastritis, indigestion.	Whole plant: diarrhea, infertility, menoxenia, external use for pruritus vulvae, parotitis, fracture, snake bites, toothache, insect and snake bites, chronic bronchitis, cough, coldfever, swollen sore throat, dyspeptic abdominal distention, enteritis, syphilis, gonorrhea, itchiness. Root: toothache, diarrhea.	Whole plant: hematemesis, traumatic hemorrhinia, nephritis, parotitis, dysentery, metrorrhagia and metrostaxis, dyspepsia in children, carbuncles.
58	Lycopodiaceae	□□	*Lycopodium japonicum* Thunb. ex Murray	Whole plant: rheumatism, traumatic injury, flaccid limbs, rheumatalgia, fracture.	Whole plant: rheumatalgia, hepatitis, jaundice, dysentery, edema, pulmonary tuberculosis, traumatic injury.	Whole plant and spore: hepatitis, dysentery, traumatic hemorrhage.
59	Primulaceae	□□□	*Lysimachia christiniae* Hance	Whole plant: hepatic stones, cholelithiasis, bladder stone, prostatitis, nephritis, dysentery, snake bites, carbuncles, snakebite, traumatic injury. diarrhea, jaundice, hematuria, fever.	Root: acute mastitis, urinary calculi, urodynia, cough, dysentery. Whole plant: bladder ston, cholelithiasis, hepatitis, dysentery, parotitis, mastitis, hemorrhoids, skin infection, traumatic injury, sciatica, rheumatic arthritis.	Whole plant: jaundice, edema, hepatic stones□ cholelithiasis, kidney calculi, bladder stone, traumatic injury, localized skin infection.
60	Euphorbiaceae	□□	*Triadica sebifera* (Linnaeus) Small	Seed, folium, root bark and stem: edema, abdominal distension, eczema, snakebite,	Root bark and folium: diarrhea, acute mastitis, snakebite, traumatic injury, skin infection, burns and scalds, appendicitis, hepatitis.	Root bark: edema, abdominal distension, scrofula.

				constipation, beriberi, urticarial.		
61	Campanulaceae	□□□	*Wahlenbergia marginata* (Thunb.) A. DC.	Whole plant: coldcough, night sweating, hypertension.	Whole plant and Root: anemia, rheumatism.	Rhizome: dyspepsia in children, bronchitis, cough, malarial, hypertension, leucorrhoea.
62	Rosaceae	□□	*Duchesnea indica* (Andr.) Focke	Whole plant: epilepsy, cold, dysentery, jaundice, inflammation of eyes, oral ulcer, throat sore, parotitis, skin infection, snakebite, hematemesis, metrorrhagia and metrostaxis, menoxenia, burns and scalds, traumatic injury, nephritis, hemoptysis, innominate inflammatory, herpes zosterinnominate inflammatory.	Whole plant: parotitis, acute suppurative mastitis, skin infection, insect and snake bites, itchiness, skin infection, menoxenia, functional uterine bleeding, snakebite, , infantile convulsion, dysentery, eye conjunctivitis, herpes zoster, eczema, urticaria.	Whole plant: epilepsy, cough, hematemesis, swollen sore throat, dysentery, carbuncles, skin infection, snake and insect bites.
63	Compositae	□□□	*Taraxacum mongolicum* Hand.-Mazz.	Whole plant: mastitis, acute suppurative mastitis, skin infection, inflammation of eyes, gingivitis, lymphadenitis, hepatitis, throat sore , lung abscess, jaundice, upper respiratory tract infection, laryngopharyngitis, parotitis, gastritis, acute icteric hepatitis, burns and scalds, tympanitis, conjunctivitis, blepharitis, skin infection, innominate inflammatory.	Whole plant: dyspeptic abdominal distention, lung abscess, skin infection, infertility.	Whole plant: upper respiratory tract infection, acute tonsillitis, parotitis, acute mastitis, acute appendicitis, urinary infection, hepatitis, inflammation of eyes, postnatal lack of lactation, external use for skin infection, snakebite. Root: acute mastitis, lymphadenitis, acute bronchitis, nephritis, cholecystitis.
64	Betulaceae	□□□□	*Alnus nepalensis* D. Don	Bark: dysentery, gastroenteritis, abdominal pain, lumbagos, cold, headache, rheumatism arthralgia, measles, traumatic bleeding.	Folium: skin infection.	Bark: measles, traumatic bleeding, cold, headache, rheumatism arthralgia.
65	Fabaceae	□□	*Senna tora* (Linnaeus) Roxburgh	Seed: constipation, hemorrhoids, rheumatism, diabetes mellitus, prostatitis, edema, beriberi, dysentery, menoxenia, fungal infection.	Root: rheumatalgia.	Seed: intestinal constipation, diabetes mellitus, prostatitis, rheumatism, dysentery, menoxenia, fungal infection.
66	Compositae	□□□	*Eupatorium japonicum* Thunb.	Whole plant: traumatic injury, postpartum lumbago. The folium and stem:	Whole plant: postpartum lumbago. Root: external use for traumatic injury. folium and stem: external use for	Root: prolapse of rectum, measles rheumatic fracture pain.

				external use for traumatic injury.	traumatic injury, lumbagos.	
67	Euphorbiaceae	□□□□	*Euphorbia sieboldiana* Morr. et Decne.	Whole plant: dyspepsia, diarrhea.	Whole plant: stomachache, traumatic injury, skin infection. Root: traumatic injury, traumatic hemorrhage, skin infection.	Whole plant: traumatic injury.
68	Meliaceae	□□	*Melia azedarach* L.	Fruit and stem bark: ascariasis, ancylostomiasis, enterobiasis.	Stem bark: traumatic injury, congestion. Bark: ascariasis, skin infection, eczema, tinea capitis, pruritus vulvae.	Whole plant: cold, abdominal pain, dysentery, rheumatic arthritis, malarial, constipation, external use for dermatitis.
69	Anacardiaceae	□□□	*Rhus chinensis* Mill.	Root and folium: hemorrhoids, night sweating, cough, diarrhea, hemorrhoids, seminal emission, prolapse of rectum, metrorrhagia and metrostaxis, boils and sores, traumatic hemorrhage, burns and scalds. Rhizome: rheumatic arthritis, edema, traumatic injury.	Whole plant: traumatic injury, congestion, cough, edema, skin infection.	Root: cold, bronchitis, hemoptysis, enteritis, dysentery, hemorrhoids. Folium: traumatic injury, snakebite, dermatitis rhus.
70	Malvaceae	□□□	*Urena lobata* L.	Whole plant and Root: edema, amenorrhea. Whole plantrheumatoid arthritis, cold, malarial, enteritis, dysentery, dyspepsia in children, external use for traumatic injury, snakebite, mastitis.	Stem bark: snake and insect bites, innominate inflammatory, oral ulcer.	Whole plant: rheumatic arthritis, malarial, enteritis, dyspepsia, traumatic injury.
71	Rosaceae	□□□	*Agrimonia pilosa* Ldb.	Whole plant and Root: toothache, acute gastroenteritis hematuria. Whole plant: hemoptysis, hematemesis, traumatic hemorrhinia, hemafecia, diarrhea, dysentery, trichomoniasis, fever, diarrhea, traumatic hemorrhage, pulmonary tuberculosis, hemoptysis.	Whole plant: diarrhea, itchiness, rheumatism arthralgia, edema, hematemesis, diarrhea, dyspepsia, dysentery, menstrual disorders, dystocia, dystocia.	Whole plant: pulmonary tuberculosis, gastroenteritis, dysentery, taeniasis, trichomonas vaginalis, skin infection, hemorrhoids.
72	Equisetaceae	□□□	*Equisetum ramosissimum* subsp. *debile* (Roxb.ex Vauch.) Hauke	Whole plant: diphtheria, throat sore, jaundice hepatitis, constipation, asthma, acute nephritis, urinary infection, prostatitis, stomachache, dacryocystitis, external use for fracture.	Whole plant: inflammation of eyes, pterygium, diarrhea, abnormal leukorrhea, infertility.	Whole plant: urinary calculi, urodynia, edema, hypertension, prolapse of rectum, prostatitis. Rhizome: leucorrhoea, amenorrhea.
73	Lamiaceae	□□	*Mentha canadensis* Linnaeus	Whole plant and	Whole plant and folium:	Whole plant: skin

				folium: headache, swollen sore throat, measles. Whole plant: keratitis, coldheadache, pharyngitis. Stem and folium: urticaria, swollen sore throat, urticaria, urticaria, measles.	bee bite. Whole plant: neonatal tetanus, asthmacough.	infection, itchiness, prolapse of rectum, infantile convulsion. Whole plant and folium: cold, inflammation of eyes, throat sore, toothache.
74	Liliaceae	□□□□	*Paris marmorata* Stearn	Rhizome: traumatic injury, pulmonary tuberculosis, snake and insect bites, stomachache, skin infection, infantile convulsion, tympanitis. Whole plant: innominate inflammatory, snake and insect bites, innominate inflammatory, cough, tuberculous cervical lymphadenitis, innominate inflammatory, carbuncles and sores, painful swelling of the throat, acute suppurative mastitis, localized skin, infection.	Rhizome: skin infection, snake bites, malaria, sore throat, stomachache, epilepsy, cough.	Rhizome: chronic bronchitis, stomachache, nephritis, parotitis, mastitis, insect bites, boils and sores.
75	Araliaceae	□□□□□	*Schefflera delavayi* (Franch.) Harms ex Diels	Root, stem and folium: rheumatic arthritis, stomachache, headache.	Stem and folium: flaccid limbs, arthritis.	Root and stem: fracture, rheumatoid arthritis, loin pain in kidney-deficiency syndrome.
76	Rutaceae	□□□□	*Zanthoxylum armatum* DC.	Fruit: pain and coldness in the lower abdomen, emesis, diarrhea, eczema, ascariasis, caries toothache, scrofula. Root and stem: traumatic injury, rheumatic arthritis. Root: coldheadache	Fruit: abdominal pain. Root: keratitis, stomachache, cold, skin infection, rheumatalgia.	Fruit: ascariasis, toothache, eczema.
77	Ranunculaceae	□□	*Ranunculus japonicus* Thunb.	Whole plant: jaundice, asthma, migraine.	Whole plant: coldheadache, cough, rheumatism arthralgia, schistosomiasis, rheumatic arthritis, gastropathy.	Whole plant: traumatic injury, malaria, edema, fungal infection.
78	Polyporaceae	□□	*Ganoderma lucidum* (Curtis) P. Karst.	Fruit body: palpitation, swollen sore throat, sores, insomnia, dizziness, cough and asthma, coronary heart disease, jaundice, tumor, mastitis, stomachache.	Fruit body: testicular cyst, prostatitis, frequent or severe headaches.	Fruit body: gastropathy, neurasthenia, bronchitis.
79	Usneaceae	□□□	*Usnea diffracta*	Lichen thalli: tympanitis, mastitis.	Thallus: scrofula, acute mastitis, traumatic hemorrhage, snakebite, rheumatalgia. Filamentous body: lymphoid tuberculosis,	Thallus: traumatic injury, rheumatoid arthritis, hemiplegia, hemoptysis, traumatic hemorrhage, skin

					amenorrhea, cough, ascariasis.	infection, palpitation, swollen sore throat, sores, traumatic infection, snakebite, scrofula, mastitis, pulmonary tuberculosis, cough, lymphadenitis, ascariasis.
80	Fabaceae	□□	*Pueraria montana* (Loureiro) Merrill	Root and flower: cold, fever, cervical spondylosis, macule, coronary heart disease, diabetes mellitus, measles.	Root and flower: pulmonary tuberculosis, swollen sore throat, cervical spondylosis, cold, measles. Flower: emesis.	Root: cold, acute gastroenteritis, dysentery, diarrhea.
81	Selaginellaceae	□□□□	*Selaginella pulvinata* (Hook. et Grev.) Maxim	Whole plant: amenorrhea, traumatic injury, functional uterine bleeding, leucorrhoea, abdominal distensionedema, pulmonary hemorrhage, hemorrhinia, hematemesis, jaundice hepatitis, rheumatism.	Whole plant: functional uterine bleeding, leucorrhoea, pulmonary hemorrhage, hemafecia, hemorrhoids, metrorrhagia and metrostaxis, amenorrhea, abdominal distensionedema, menoxenia, dystocia, traumatic injury, hemorrhoids, gastrointestinal bleeding, epistaxis.	Whole plant: gastrointestinal bleeding, hematuria, traumatic hemorrhage, dystocia, constipation, burns and scalds.
82	Portulacaceae	□□□	*Talinum paniculatum* (Jacq.) Gaertn.	Root: menoxenia, prostatic hyperplasia, infantile enuresis, cough, night sweating, abnormal leukorrhea, postnatal lack of lactation, fungal infection, Whole plant: diarrhea, pulmonary tuberculosis, vertigo.	Root: prostatic hyperplasia, infantile enuresis, cough, night sweating, boils and sores.	Root: diarrhea, pulmonary tuberculosis, night sweating, menoxenia, abnormal leucorrhea.
83	Moraceae	□□	*Cannabis sativa* L.	Seed: constipation, constipation, hemorrhoids, rheumatism, diabetes mellitus, prostatitis, edema, beriberi, dysentery, menoxenia, fungal infection.	Root: rheumatalgia.	Seed: constipation, diabetes mellitus, prostatitis, rheumatism, dysentery, menoxenia, fungal infection.
84	Drynariaceae	□□□□	*Drynaria delavayi* Christ	Rhizome: loin pain in kidney-deficiency snydrome, tinnitus and deafness, fracture, external use for vitiligo.	Rhizome: rheumatalgia, traumatic injury, fracture.	Rhizome: traumatic injury, rheumatic arthritis, hemorrhoids.
85	Verbenaceae	□□□	*Verbena officinalis* L.	Whole plant: fever, jaundice, urinary infection, edema, swollen sore throat, fracture, , diphtheria, malarial, abdominal pain, urinary calculi, traumatic injury, hepatitis, menoxenia, amenorrhea, carbuncles and sores., hepatitis, tetanus, dysentery, jaundice hepatitis,	Whole plant and Root: cold, toothache, hematuria, jaundice, swollen sore throat, chronic gastritis, edema, malarial, edema, dysentery, gonorrhea, amenorrhea, carbuncles and sores, gingival inflammation, dysmenorrhea, white diarrhea, infertility, acute mastitis, menoxenia, dysmenorrhea, pertussis, enterospasm, diarrhea, liver disease, toothache, cold, traumatic injury,	Whole plant: cold, urinary infection, toothache, night blindness, dysentery, jaundice, edema, malarial, diphtheria, painful swelling of the throat, gonorrhea, amenorrhea, gingival inflammation, carbuncles and sores.

				hernia, chest pain, lumbagos, white diarrhea, fracture, pelvic inflammation.	diphtheria, influenza, schistosomiasis, filariasis, hepatitis.	
86	□□	□□□	*Pinus yunnanensis* Franch.	Twig: rheumatic arthritis, traumatic injury, urethritis, acute suppurative mastitis	Seed: nephritis. Loose knot: rheumatic arthritis, traumatic injury. Pollen: gastric ulcer, duodenal ulcer, tympanitis, rhinitis, traumatic hemorrhage. Pine needle: influenza, rheumatoid arthritis, nyctalopia, hypertension, neurasthenia. Rosin: skin infection, eczema, burns and scalds. Young twigs: rheumatic arthritis, fracture.	Pollen: headache, dizziness, stomachache, dysentery, traumatic hemorrhage, duodenal ulcer, constipation, impetigo. Twig: cough, fever.
87	Polygonaceae	□□	*Polygonum hydropiper* L.	Whole plant: fever, dyspepsia in children, dysentery, acute tonsillitis, malarial.	Whole plant: rheumatoid arthritis. Root: cold.	Whole plant: dysentery, enteritis, diarrhea, rheumatic arthritis, traumatic injury, functional uterine bleeding.
88	Saxifragaceae	□□□□	*Rodgersia sambucifolia* Hemsl.	Rhizome: traumatic injury, fracture, menoxenia, traumatic bleeding.	Root: diarrhea, traumatic hemorrhage, abdominal distension, rheumatalgia, dysentery, stomachache, traumatic injury, dysmenorrhea, menoxenia.	Rhizome: cold, rheumatic fracture pain, enteritis, traumatic hemorrhage, traumatic injury, diarrhea, gastropathy, menoxenia, fracture, traumatic bleeding, senile chronic bronchitis.
89	Compositae	□□□	*Duhaldea cappa* (Buchanan-Hamilton ex D. Don) Pruski & Anderberg	Root: cold, rheumatic arthritis, swollen sore throat, acute suppurative mastitis, fever, puerperal fever, cough. Whole plant: toothache, nephritis, bronchitis, gingivitis, mastitis, urinary infection.	Whole plant: rheumatism, traumatic injury, cough, indigestion, infantile convulsion, gastropathy, schistosomiasis, cold, swollen sore throat, oral ulcer, diarrhea, menoxenia, itchiness, headache, chronic nephritis, cholelithiasis, cholecystitis, hernia, visceral hemorrhage, hemorrhoids, toothache, urinary infection, fever, cold. Whole plant and Root: stomachache, indigestion, bloody dysentery, lung abscess, cough.	Folium: fungal infection, gingival inflammation. Root: rheumatic fracture pain, gastritistoothache, cystitis, itchiness. Whole plant and root: cold, cough, headache, stomachache, rheumatic fracture pain, traumatic injury, menoxenia, leucorrhoea, schistosomiasis.
90	Polygonaceae	□□□	*Fallopia multiflora* (Thunb.) Harald.	Root tuber: vertigo, palpitation, swollen sore throat, sores, insomnia, anemia, kidney deficiency, seminal emission, leucorrhoea, constipation, skin infection, scrofula, hemorrhoids, vertigo, soreness-tired of waist and knee, neurasthenia, hepatitis, edema, enteritis, ovarian cyst.	Root tuber: loin pain in kidney-deficiency snydrome, rheumatoid arthritis, pneumonia, cough, fever, dyspeptic abdominal distention, anemia.	Root tuber: neurasthenia, anemia, dizziness, insomnia, night sweating, seminal emission, leucorrhoea, soreness-tired of waist and knee.
91	Amaranthaceae	□□□	*Celosia cristata* L.	Inflorescence: menoxenia, metrorrhagia and metrostaxis, white	Whole plant and inflorescence: leucorrhoea, seminal emission, urticaria,	Whole plat: chronic hepatitis, cirrhosis ascites, stomachache,

				diarrhea, diarrhea, hemafecia, hematuria, abnormal leukorrhea, diarrhea. Whole plant: menoxenia, diarrhea.	itchiness, chronic conjunctivitis, menometrorrhagia, hemorrhoids.	rheumatic fracture pain.
92	Solanaceae	□□□	*Solanum violaceum* Ortega	Fruit: gastropathy, skin infection abscesses fester. Flower and folium: headache, toothache, throat sore, lymphnoditis, stomachache, rheumatic arthritis, traumatic injury, stomachache, carbuncles and sores, rhinitis.	Root and fruit: menoxenia, afterpains, cough, hemoptysis, edema, hematuria, jaundice, abnormal leukorrhea, swollen sore throat, cough, malarial, palpitation, swollen sore throat, sores, toothache, stomachache, insomnia, swollen sore throat, dysmenorrhea, amenorrhea. Root, fruit and seed: toothache, stomachache, nephritis.	Fruit, folium and seed: headache, inflammation of eyes, sinusitis, gingivitis.
93	Celastraceae	□□□□□	*Tripterygium wilfordii* Hook. f.	Root: innominate inflammatory, neurodermatitis. Root and stem: fungal infection, itchiness.	Root: rheumatoid arthritis, traumatic injury. Root bark: rheumatic fracture pain, traumatic injury, systemic lupus erythematosus, chronic glomerulonephritis, bronchitis, skin infection, eczema, fungal infection, neurodermatitis. Root and stem bark: rheumatism, rheumatism, cough, traumatic injury, fungal infection.	Whole plant and Root: barkrheumatoid arthritis, traumatic injury, hemiplegia. external use for fracture, traumatic hemorrhage.
94	Euphorbiaceae	□□	*Vernicia fordii* (Hemsl.) Airy Shaw	Root, juice, seed and oil: external use for schistosomiasis.	Seed: dyspeptic abdominal distention, scrofula and scrofula.	Seed: painful swelling of the throat, scrofula, scrofula, scalds, erysipelas, dyspeptic abdominal distention.
95	Vitaceae	□□□□□	*Tetrastigma serrulatum* (Roxb.) Planch.	Whole plant: rheumatism, activating blood, fracture.	Root: rheumatoid arthritis, traumatic injury, swollen sore throat, hematuria, external use for fracture. Whole plant and Root: traumatic injury, rheumatism, amenorrhea, pulmonary tuberculosis, rheumatalgia, flaccid limbs, fracture, abscesses fester, traumatic injury, hematuria, swollen sore throat. Whole plant: traumatic injury, fracture, ecchymoma pain, rheumatism, carbuncles and sores, abscesses fester, swollen sore throat, hematuria.	Root and stem: rheumatic fracture pain, traumatic injury, external use for fracture, traumatic hemorrhage.
96	Rosaceae	□	*Amygdalus persica* L.	Seed and folium: pruritus vulvae, amenorrhea	Bark and fruit stone: urticarial, measles,	Seed: amenorrhea, traumatic injury, constipation
97	Magnoliaceae	□□□	*Schisandra propinqua* subsp. *sinensis* (Oliver) R. M. K. Saunders	Root and stem: rheumatic arthritis stomachache, carbuncles, traumatic injury, menoxenia, skin infection influenza, snakebite.	Root bark and stem: rheumatism, traumatic injury, hematemesis, stomachache, menoxenia, snakebite, fracture, chronic gastritis, rheumatoid arthritis, dysmenorrhea,	Whole plant: rheumatism, traumatic injury, stomachache, menoxenia, buerger's disease. Folium: external use for skin infection, snakebite,

					traumatic hemorrhage. Folium, stem, root bark and fruit: lumbagos, traumatic injury, snakebite, menoxenia, insomnia.	traumatic hemorrhage.
98	Compositae	□□□□	*Carpesium cernuum* L.	Whole plant: dysentery, urinary infection, facial paralysis, urinary system infection, prostatitis rheumatalgia, traumatic injury, snake bites, innominate inflammatory, cold, acute enteritis, lymphnoditis. Whole plant and root: acute tonsillitis, painful swelling of the throat, infantile convulsion, pruritus vulvae, tuberculous cervical lymphadenitis, toothache, skin infection, hemorrhoids, snakebite, ascariasis, hematemesis, traumatic hemorrhinia, prostatitis.	Whole plant: headache, swollen sore throat, toothache, parotitis, bronchitis, asthma, urinary infection, mastitis, herpes zoster, snakebite, abnormal leukorrhea, gonorrhea, acute enteritis, dysentery, urinary infection, scrofula. gingival inflammation, tympanitis, carbuncles, dysentery, abdominal pain, hernia, uterine prolapse, cold. Fruit: ascariasis, enterobiasis, taeniasis, ascariasis. Folium: tympanitis, skin infection. Root: dysentery, cold, prolapse of rectum, uterine prolapse.	Whole plant: cold, swollen sore throat, toothache, acute enteritis, dysentery, urinary infection, scrofula, skin infection, mastitis, snakebite.
99	Compositae	□□□□□	*Senecio analogus* Candolle	Whole plant: influenza, hemiplegia, rheumatalgia, dysentery, stomachache, indigestion.	Whole plant: influenza, hemiplegia, rheumatalgia, dysentery, stomachache, indigestion.	Whole plant: traumatic injury, edema pain, carbuncles, mastitis.
100	Araliaceae	□□□□□	*Metapanax delavayi* (Franchet) J. Wen & Frodin	Whole plant: heat stroke, menoxenia, dyspepsia, rheumatic fracture pain, acute pharyngitis, throat sore, traumatic injury.	Whole plant: throat sore, cold, dyspepsia, ascariasis, menoxenia, traumatic injury, enteritis. Root: rheumatic fracture pain.	Whole plant: throat sore, cold, dyspepsia, ascariasis, menoxenia, traumatic injury, enteritis. Root: rheumatic fracture pain.
101	Caryophyllaceae	□□□	*Sagina japonica* (Sw.) Ohwi	Whole plant: dermatitis rhus, eczema, skin infection, erysipelas, scrofula, innominate inflammatory, snakebite, sinusitis, gingivitis, traumatic injury.	Whole plant: infantile convulsion, dermatitis rhus, snake bites.	Whole plant: leukemia, dermatitis rhus, scrofula, carbuncles, dental caries.
102	Compositae	□□□	*Sonchus oleraceus* L.	Whole plant: dysentery, jaundice, prostatitis.	Whole plant: white dysentery.	Whole plant: enteritis, dysentery, acute icteric hepatitis, appendicitis, mastitis, stomatitis, pharyngitis, nephritis, pulmonary tuberculosis, hematemesis, traumatic hemorrhinia, hemafecia, metrorrhagia and metrostaxis.

Table 2 The dominant 10 families of the three medical syetems

NO.	MM		YM		LM	
	Family	Species number	Family	Species number	Family	Species number
1	Compositae	20	Compositae	28	Compositae	25
2	Fabaceae	12	Lamiaceae	11	Lamiaceae	8
3	Lamiaceae	9	Rosaceae	10	Rosaceae	7
4	Polygonaceae	8	Fabaceae	10	Euphorbiaceae	7
5	Rosaceae	7	Polygonaceae	9	Polygonaceae	6
6	Euphorbiaceae	5	Campanulaceae	7	Campanulaceae	6
7	Urticaceae	5	Euphorbiaceae	6	Fabaceae	6
8	Apiaceae	5	Ranunculaceae	6	Ranunculaceae	6
9	Cucurbitaceae	5	Apiaceae	6	Urticaceae	5
10	Ranunculaceae	4	Orchidaceae	5	Solanaceae	5

Table 3 The number of medicinal plants used to treat various diseases in the three medical systems

NO.	Disease treated	MM		YM		LM	
		Species number	Percentage(%)	Species number	Percentage(%)	Species number	Percentage(%)
1	Internal medical	196	95.15%	233	94.33%	191	93.17%
2	Surgery	143	69.42%	189	76.52%	138	67.32%
3	Dermatology	50	24.27%	59	23.89%	43	20.98%
4	Anorectal	16	7.77%	29	11.74%	16	7.80%
5	Urological	9	4.37%	23	9.31%	18	8.78%
6	Obstetrics and Gynecology	77	37.38%	103	41.70%	65	31.71%
7	Pediatrics	38	18.45%	43	17.41%	25	12.20%
8	Ophthalmology	31	15.05%	21	8.50%	21	10.24%
9	Otorhinolaryngology	51	24.76%	46	18.62%	39	19.02%
10	Orthopedics	30	14.56%	52	21.05%	22	10.73%
11	Stomatology	30	14.56%	53	21.46%	26	12.68%
12	Infection	40	19.42%	71	28.74%	46	22.44%

Table 4 The special usages

Nation	Special usages
MM	Soaking *Asarum maximum* Hemsl., *Uncaria rhynchophylla* (Miq.) Miq. ex Havil., *Ligusticum sinense 'Chuanxiong'* and *Saposhnikovia divaricata* (Turcz.) Schischk. In wine, drink the medicated wine to treat arthralgia. Roasting the leaves of *Ricinus communis* L. on the fire and apply on the affected area to treat headache and shoulder-neck pain. Stale tea oral administration and external application to relieve the poison of centipede bites. Using the whole plant of *Glechoma longituba* (Nakai) Kupr., *U. rhynchophylla* (Miq.) Miq. ex Havil. And the root or whole plant of *Periploca sepium* Bunge. to boil water, and use the water for bathing, which can treat rheumatism The pulp of *Melia azedarach* L. is ground into a powder and steamed with eggs to treat hemorrhoids. Dry snakeskin, roasted until it is yellow and crisp, and then ground it into powder. Coating the affected area with rapeseed oil and sprinkle with snakeskin powder to treat herpes zoster. The seeds of *Amorphophallus konjac* K. Koch are dried and ground into powder, sprinkled on steamed glutinous rice, mixed with lard and eaten to treat uterine prolapse. Urine external application to relieve snake venom.
YM	The cortex of *Crataegus pinnatifida* Bge. boiled into an ointment and applied it to the affected area to treat burns and scalds. *Saurauia tristyla* DC. Parasiticus can cure asthma. Using *Phyllanthus emblica* L., *Lonicera japonica Thunb.* and *Cyrtomium fortunei* J. Sm. to boil water, and take them orally to prevent colds and cure influenza. Using *P. emblica* L., the cortex of *Citrus reticulata* Blanco and *Zingiber officinale* Roscoe to boil water, and take them orally to treat colds. The folium of *Platycladus orientalis* (L.) Franco is soaked in white vinegar and outer applying to treat intractable ringworm. Smashing *Dipsacus asper* Wallich ex Candolle, *Gonostegia hirta* (Bl.) Miq., Ampelopsis and the root of *Davallia trichomanoides* Blume mix with wine, and apply external application to treat fractures The juice of *Musella lasiocarpa* (Franchet) C. Y. Wu ex H. W. Li or honey can relieve the toxicity of *Aconitum carmichaelii* Debeaux. Igniting the thread is drawn from the *Boehmeria nivea* (L.) Gaudich., cauterize on the vein to treat strokes. Smashing the root of *B. nivea* (L.) Gaudich. and apply it to the affected area, with a hole in the middle can treat pustules.
LM	Sour things can detoxify, such as pickled cabbage soup can dispel the effects of alcohol and counteract toxicity.

Table 5 The example for Raw data processing

Nation	Scientific name	medicinal parts										disease treated											
		A	B	C	D	E	F	G	H	I	J	1	2	3	4	5	6	7	8	9	10	11	12
Miao	*Leonurus japonicus* Houttuyn	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0
	Punica granatum L.	1	0	0	0	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
	Arctium lappa L.	1	0	0	1	0	1	0	0	0	0	1	1	1	0	0	0	1	0	1	0	0	1
	Buddleja officinalis Maxim.	1	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
	D. asper Wallich ex Candolle	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	1	0	0
	Eclipta prostrata (L.) L.	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	1	0	0	0	0
	Fagopyrum dibotrys (D. Don) Hara	1	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	1
	Foeniculum vulgare Mill.	1	0	0	0	0	1	1	0	0	0	1	1	0	0	0	1	1	0	0	0	0	1
	Geranium nepalense Sweet	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0
	……	……										……											
Lisu	*L. japonicus* Houttuyn	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	1	0	0	0	0	1	0
	Punica granatum L.	1	0	0	1	1	1	0	0	0	0	1	0	1	1	0	1	0	0	1	0	0	0
	Arctium lappa L.	1	0	0	0	0	1	0	0	0	0	1	1	1	0	1	0	0	0	1	0	0	1
	Buddleja officinalis Maxim.	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
	D. asper Wallich ex Candolle	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	1	0	0
	Eclipta prostrata (L.) L.	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0
	F. dibotrys (D. Don) Hara	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
	F. vulgare Mill.	1	0	0	0	0	1	1	0	0	0	1	1	0	0	1	1	0	0	0	0	0	1
	G. nepalense Sweet	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0
	……	……										……											

A- Roots and Rhizomes, B- Caulis and Lignum, C- Coxtex, D- Folium, E- Flower, F- Fruit and Seed, G- Whole grass, H- Plant oil, I- Resin, J- Phycomycete

1- Internal medical Dept., 2- Surgery Dept., 3- Dermatology Dept., 4- Anorectal Dept., 5- Urological Dept., 6- Obstetrics and gynecology Dept., 7- Pediatrics Dept., 8- Ophthalmology Dept., 9- otorhinolaryngology Dept., 10- orthopedics Dept., 11- stomatology Dept., 12- infection Dept..

Table 6 The functional equivalents

Miao and Yi	*D. asper* Wallich ex Candolle— *Alangium chinense* (Lour.) Harms	*Eclipta prostrata* (L.) L. — *L. japonicus* Houttuyn
	Phytolacca americana L.—*Cannabis sativa* L.	*Agrimonia pilosa* Ldb.—*Mirabilis jalapa* L.
	P. americana L.— *Kochia scoparia* (L.) Schrad.	*Astilbe chinensis* (Maxim.) Franch. et Savat.—*Ampelopsis delavayana* Planch.
	P. americana L.—*F. vulgare* Mill.	*Ranunculus japonicus* Thunb.—*Perilla frutescens* (L.) Britt.
	P. americana L.—*Codonopsis convolvulacea* Kurz	*Solena heterophylla* Lour.—*P. americana* L.
	P. americana L.—*Senna tora* (Linnaeus) Roxburgh	*S.heterophylla* Lour.—*Hibiscus mutabilis* L.
	Cynoglossum amabile Stapf et Drumm.—*Centella asiatica* (L.) Urban	*A. konjac* K. Koch—*Dioscorea panthaica* Prain et Burkill
	C. amabile Stapf et Drumm.—*S. japonica* (Sw.) Ohwi	*G. nepalense* Sweet— *Cucurbita moschata* (Duch. ex Lam.) Duch. ex Poiret
	Selaginella pulvinata (Hook. et Grev.) Maxim—*Polygonum runcinatum* Buch.—Ham. ex D. Don	*Rumex nepalensis* Spreng.—*P. americana* L.
	Habenaria dentata (Sw.) Schltr—*C. sativa* L.	*R. nepalensis* Spreng.—*H. mutabilis* L.
	H. dentata (Sw.) Schltr—*K. scoparia* (L.) Schrad.	*G. hirta* (Bl.) Miq.—*Solanum nigrum* L.
	H. dentata (Sw.) Schltr—*F. vulgare* Mill.	*S. japonica* (Sw.) Ohwi—*C. asiatica* (L.) Urban
	H. dentata (Sw.) Schltr—*C. convolvulacea* Kurz	*P.acinosa* Roxb.—*Gynura japonica* (Thunb.) Juel.
	H. dentata (Sw.) Schltr—*S. tora* (Linnaeus) Roxburgh	*Dioscorea polystachya* Turczaninow—*C. longa* L.
	E. sieboldiana Morr. et Decne.—*C. asiatica* (L.) Urban	*Crepis napifera* (Franch.) Babcock—*C. sativa* L.
	E. sieboldiana Morr. et Decne.—*S. japonica* (Sw.) Ohwi	*C. napifera* (Franch.) Babcock—K. scoparia (L.) Schrad.
	Polygala arillata Buch.—Ham. ex D. Don — *Drynaria delavayi* Christ	*C. napifera* (Franch.) Babcock — *F. vulgare* Mill.
	D. panthaica Prain et Burkill—*C. sativa* L.	*C. napifera* (Franch.) Babcock —*C. convolvulacea* Kurz
	D. panthaica Prain et Burkill—*K. scoparia* (L.) Schrad.	*C. napifera* (Franch.) Babcock—*S. tora* (Linnaeus) Roxburgh
	D. panthaica Prain et Burkill—*F. vulgare* Mill.	*Rodgersia sambucifolia* Hemsl.—*A. chinense* (Lour.) Harms
	D. panthaica Prain et Burkill—*C. convolvulacea* Kurz	*Curculigo orchioides* Gaertn.—*R. sambucifolia* Hemsl.
	D. panthaica Prain et Burkill—*S. tora* (Linnaeus) Roxburgh	*Elsholtzia ciliata* (Thunb.) Hyland. —*C. asiatica* (L.) Urban
	C. convolvulacea Kurz—*C. asiatica* (L.) Urban	*E. ciliata* (Thunb.) Hyland.—*S. japonica* (Sw.) Ohwi
	C. convolvulacea Kurz—*S. japonica* (Sw.) Ohwi	*P. runcinatum* Buch.—Ham. ex D. Don—*G. nepalense* Sweet
	C. longa L.—*R. sambucifolia* Hemsl.	*P. runcinatum* Buch.—Ham. ex D. Don—*Pimpinella candolleana* Wight et Arn.
	P. tunicoides W. C. Wu et C. Y. Wu—*P. americana* L.	*Rhodiola yunnanensis* (Franch.) S. H. Fu—*E.sieboldiana* Morr. et Decne.
	P. tunicoides W. C. Wu et C. Y. Wu—*H. mutabilis* L.	*R. yunnanensis* (Franch.) S. H. Fu—*A. chinensis* (Maxim.) Franch. et Savat.
	G. japonica (Thunb.) Juel.—*G. nepalense* Sweet	*Pinus yunnanensis* Franch.—*A. konjac* K. Koch
	G. japonica (Thunb.) Juel.—*P. candolleana* Wight et Arn.	*Desmodium sequax* Wall.—*S. nigrum* L.
	S. analogus Candolle—*S. nigrum* L.	*Maclura tricuspidata* Carriere—*P. americana* L.
	Wahlenbergia marginata (Thunb.) A. DC.—*C. asiatica* (L.) Urban	*M. tricuspidata* Carriere—*H. mutabilis* L.
	W. marginata (Thunb.) A. DC.—*S.japonica* (Sw.) Ohwi	—
Miao and Lisu	*A. chinense* (Lour.) Harms—*P. acinosa* Roxb.	*Celosia cristata* L.—*S. japonica* (Sw.) Ohwi
	D. delavayi Christ—*P. tunicoides* W. C. Wu et C. Y. Wu	*C. cristata* L.—*H. flabellata* Bur. et Franch.
	D. delavayi Christ—*R. nepalensis* Spreng.	*C. cristata* L.—*Phtheirospermum tenuisectum* Bur. et Franch.
	D. asper Wallich ex Candolle—*R. sambucifolia* Hemsl.	*C. cristata* L.—*E. ciliata* (Thunb.) Hyland.

	Pilea sinofasciata C. J. Chen—*C. amabile* Stapf et Drumm.	*P. tunicoides* W. C. Wu et C. Y. Wu—*R. nepalensis* Spreng.
	P. sinofasciata C. J. Chen—*E. sieboldiana* Morr. et Decne.	S.analogus Candolle—*G. hirta* (Bl.) Miq.
	P. sinofasciata C. J. Chen—*W. marginata* (Thunb.) A. DC.	*S. nigrum* L.—*G. hirta* (Bl.) Miq.
	P. sinofasciata C. J. Chen—*S. japonica* (Sw.) Ohwi	*A. konjac* K. Koch—*P. yunnanensis* Franch.
	P. sinofasciata C. J. Chen—*H.flabellata* Bur. et Franch.	*G. nepalense* Sweet—*S. pulvinata* (Hook. et Grev.) Maxim
	P. sinofasciata C. J. Chen—*P. tenuisectum* Bur. et Franch.	*G. hirta* (Bl.) Miq.—*P. sinofasciata* C. J. Chen
	P. sinofasciata C. J. Chen—*E. ciliata* (Thunb.) Hyland.	*Ligustrum lucidum* Ait.—*R. japonicus* Thunb.
	C. amabile Stapf et Drumm.—*Incarvillea arguta* (Royle) Royle	*Eriobotrya japonica* (Thunb.) Lindl.—*Ginkgo biloba* L.
	D. polystachya Turczaninow—*S. analogus* Candolle	*H. flabellata* Bur. et Franch.—*C. amabile* Stapf et Drumm.
	D. polystachya Turczaninow—*Alternanthera philoxeroides* (Mart.) Griseb.	*H. flabellata* Bur. et Franch.—*E. sieboldiana* Morr. et Decne.
	S. pulvinata (Hook. et Grev.) Maxim—*P. sinofasciata* C. J. Chen	*H. flabellata* Bur. et Franch.—*W. marginata* (Thunb.) A. DC.
	Kyllinga brevifolia Rottb.—S. analogus Candolle	*H. flabellata* Bur. et Franch.—*S. japonica* (Sw.) Ohwi
	K. brevifolia Rottb.—*A. philoxeroides* (Mart.) Griseb.	*H. flabellata* Bur. et Franch.—*P. tenuisectum* Bur. et Franch.
	C. reticulata Blanco—*R. japonicus* Thunb.	*H. flabellata* Bur. et Franch.—*E. ciliata* (Thunb.) Hyland.
	E. sieboldiana Morr. et Decne.—*Euphorbia hirta* L.	*Polygonum hydropiper* L.—*S. pulvinata* (Hook. et Grev.) Maxim
	E. sieboldiana Morr. et Decne.—*R. yunnanensis* (Franch.) S. H. Fu	*Lobelia angulata* Forst.—*S. pulvinata* (Hook. et Grev.) Maxim
	Fallopia multiflora (Thunb.) Harald.—*C.longa* L.	*P. tenuisectum* Bur. et Franch.—*H. dentata* (Sw.) Schltr
	Dioscorea bulbifera L.—*A. erubescens* (Wall.) Schott	*P. tenuisectum* Bur. et Franch.—*C. napifera* (Franch.) Babcock
	C. cristata L.—*C.amabile* Stapf et Drumm.	*V. fordii* (Hemsl.) Airy Shaw—*C. reticulata* Blanco
	C. cristata L.—*E. sieboldiana* Morr. et Decne.	*R. yunnanensis* (Franch.) S. H. Fu—*G. nepalense* Sweet
	C. cristata L.—*W. marginata* (Thunb.) A. DC.	B. nivea (L.) Gaudich.—C. longa L.
Yi and Lisu	*Hemiphragma heterophyllum* Wall.—*Taraxacum mongolicum* Hand.-Mazz.	*G. nepalense* Sweet—*T. mongolicum* Hand.-Mazz.
	D. delavayi Christ—*H. mutabilis* L.	*Duchesnea indica* (Andr.) Focke—*Elephantopus scaber* L.
	D. asper Wallich ex Candolle—*A. chinense* (Lour.) Harms	*Triplostegia glandulifera* Wall. ex DC.—*C.longa* L.
	D. polystachya Turczaninow—Adiantum philippense L. Sp.	*P. hydropiper* L.—*T. mongolicum* Hand.-Mazz.
	D. polystachya Turczaninow—*S. analogus* Candolle	*Amygdalus persica* L.—*Torilis japonica* (Houtt.) DC.
	D. polystachya Turczaninow—*S. nigrum* L.	*L. angulata* Forst.—*T. mongolicum* Hand.-Mazz.
	Delphinium delavayi Franch.—*F. multiflora* (Thunb.) Harald.	*Potentilla lineata* Treviranus—*E. sieboldiana* Morr. et Decne.
	Dinetus racemosus (Roxb.) Buch.-Ham. ex Sweet—*E. sieboldiana* Morr. et Decne.	*P. lineata* Treviranus—*Valeriana hardwickii* Wall.
	D. racemosus (Roxb.) Buch.-Ham. ex Sweet—*V. hardwickii* Wall.	*Ainsliaea spicata* Vaniot—*D. racemosus* (Roxb.) Buch.-Ham. ex Sweet
	E. sieboldiana Morr. et Decne.—*V. hardwickii* Wall.	*A. spicata* Vaniot—*C. asiatica* (L.) Urban
	F. multiflora (Thunb.) Harald.—*T. glandulifera* Wall. ex DC.	*A. spicata* Vaniot—*S. japonica* (Sw.) Ohwi
	F. multiflora (Thunb.) Harald.—*R. sambucifolia* Hemsl.	*A. spicata* Vaniot—*Sigesbeckia orientalis* Linnaeus
	F. multiflora (Thunb.) Harald.—*Rubia yunnanensis* Diels	*Hypoxis aurea* Lour.—*Drymaria cordata* (Linnaeus) Willdenow ex Schultes
	D. cordata (Linnaeus) Willdenow ex *Schultes—A. philippense* L. Sp.	*H. aurea* Lour.—*P. tetraphylla* (Forst. F.) Hooker et Arnott
	D. cordata (Linnaeus) Willdenow ex Schultes—*S. analogus* Candolle	T. japonica (Houtt.) DC.—*P. frutescens* (L.) Britt.
	D. cordata (Linnaeus) Willdenow ex Schultes—*S. nigrum* L.	*Pueraria montana* (Loureiro) Merrill—*F. multiflora* (Thunb.) Harald.

C. cristata L.—*D. racemosus* (Roxb.) Buch.-Ham. ex Sweet	*P. emblica* L.—*Pinus armandii* Franch.
C. cristata L.—*C. asiatica* (L.) Urban	*Adenophora khasiana* (Hook. f. et Thoms.) Coll. et Hemsl.—*C. sativa* L.
C. cristata L.—*S. japonica* (Sw.) Ohwi	*A. khasiana* (Hook. f. et Thoms.) Coll. et Hemsl.—*F. vulgare* Mill.
C. cristata L.—*S. orientalis* Linnaeus	*A. khasiana* (Hook. f. et Thoms.) Coll. et Hemsl.—*S.tora* (Linnaeus) Roxburgh
F. dibotrys (D. Don) Hara—*A. khasiana* (Hook. f. et Thoms.) Coll. et Hemsl.	*Achillea wilsoniana* Heimerl ex Hand.-Mazz.—*L. angulata* Forst.
P. tunicoides W. C. Wu et C. Y. Wu—*H. mutabilis* L.	*M. delavayi* (Franchet) J. Wen & Frodin—*F. dibotrys* (D. Don) Hara
S. analogus Candolle—*D. cordata* (Linnaeus) Willdenow ex Schultes	*Polygonum viviparum* L.—*C. sativa* L.
S. analogus Candolle—*P. tetraphylla* (Forst. F.) Hooker et Arnott	*P. viviparum* L.—*F. vulgare* Mill.
S. nigrum L.—*D. cordata* (Linnaeus) Willdenow ex Schultes	*P. viviparum* L.—*S. tora* (Linnaeus) Roxburgh
S. nigrum L.—*P. tetraphylla* (Forst. F.) Hooker et Arnott	B. nivea (L.) Gaudich.—*T. glandulifera* Wall. ex DC.
P. tetraphylla (Forst. F.) Hooker et Arnott—*D. cordata* (Linnaeus) Willdenow ex Schultes	*B. nivea* (L.) Gaudich.—*R. sambucifolia* Hemsl.
A. konjac K. Koch—*D. bulbifera* L.	*B. nivea* (L.) Gaudich.—*R. yunnanensis* Diels

Figures

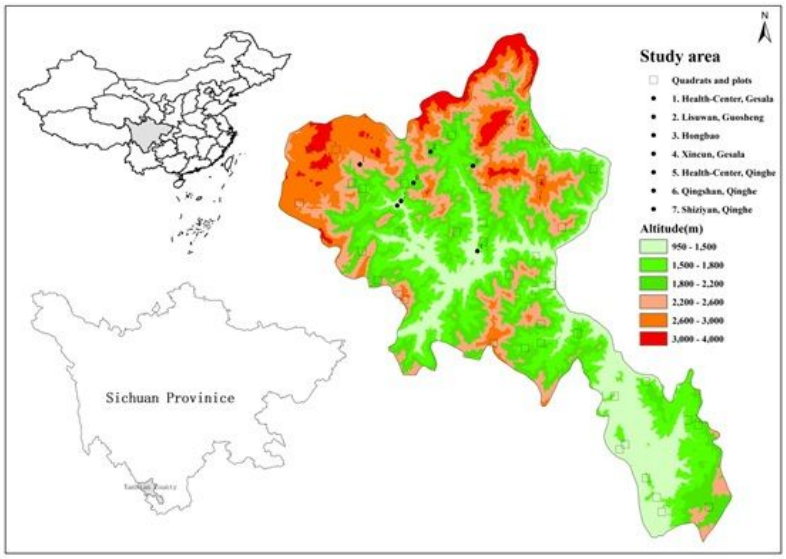

Figure 1

A schematic of the study area. Note: The designations employed and the presentation of the material on this map do not imply the expression of any opinion whatsoever on the part of Research Square concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. This map has been provided by the authors.

Figure 2

Ethnobotanical survey (A: Zhen-Sheng Ma, a doctor of MM in Hongbao Township. B: Xing-You Ma, a doctor of LM in Guosheng Township. C: Zhi-Hui Liu, a doctor of YM in Qinghe Township. D: Zi-Fen He, a doctor of LM in Guosheng Township.)

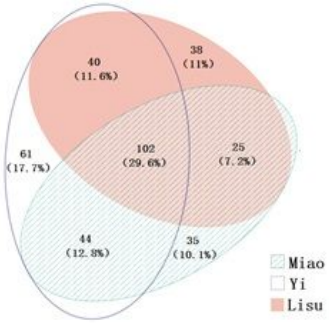

Figure 3

The Venn diagrams of medicines used in the three medical syetems

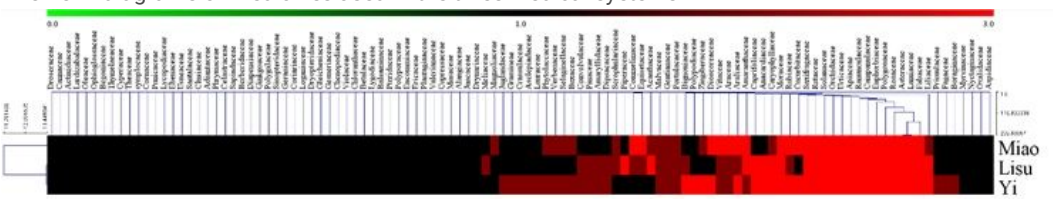

Figure 4

The heat map of the families of the medicins plants used in the three medical syetems

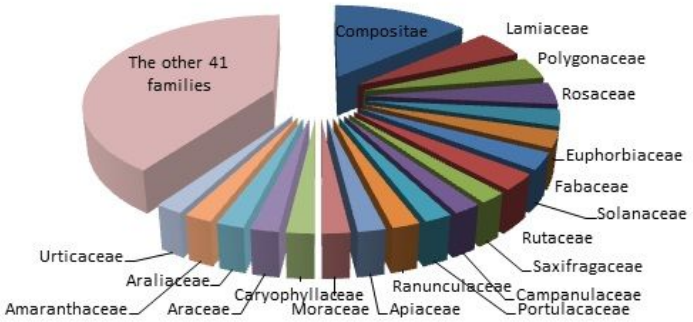

Figure 5

The family distribution of shared-use medicines of the three medical systems

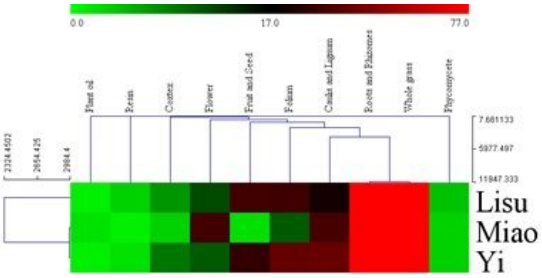

Figure 6

The heat map of medicinal parts used in the three medical systems

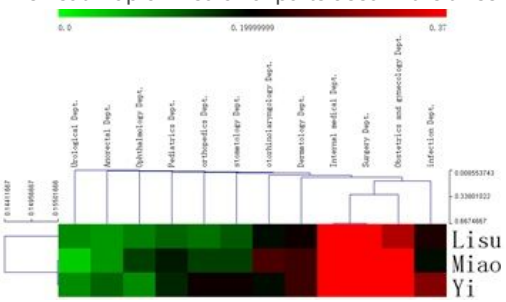

Figure 7

The heat map of medicines used to treat various diseases in the three medical systems

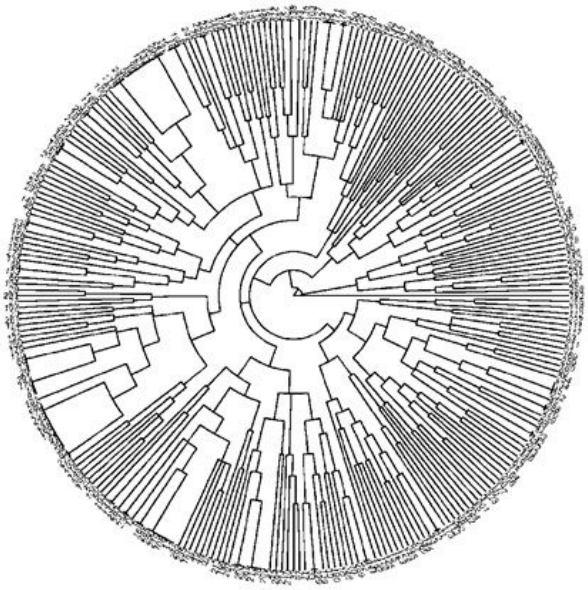

Figure 8

The cluster analysis dendrogram of the shared-use medicines of MM and YM

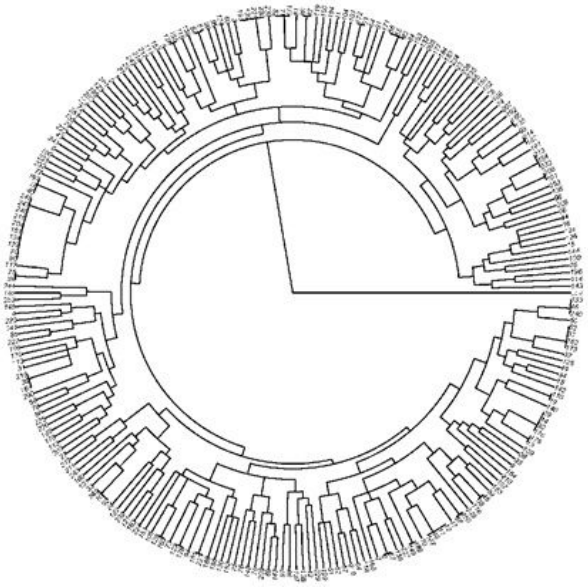

Figure 9

The cluster analysis dendrogram of the shared-use medicines of MM and LM

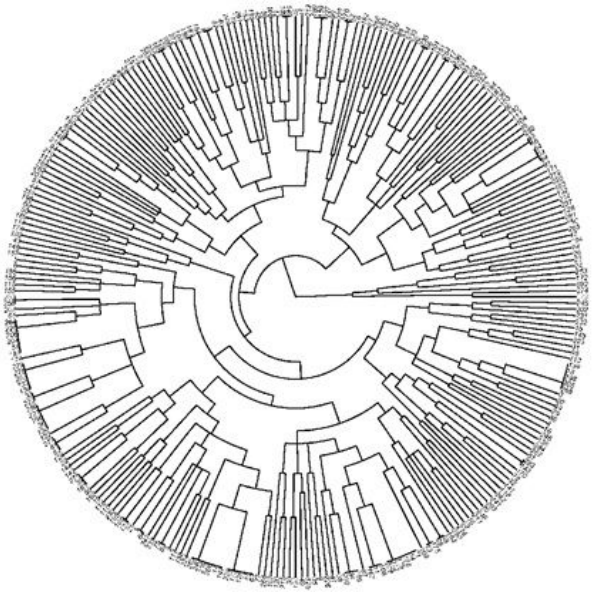

Figure 10

The cluster analysis dendrogram of the shared-use medicines of MM and LM

Figure 11

The medicinal materials market of Yanbian County