ORIGINAL ARTICLE

Open Access



The Sikchi and the recorded cases of Seungjeongwon-Ilgi

Abstract

Sikchi begins with mankind's efforts to maintain life while consuming natural food. The history of Korean food, a long experience of adapting to nature, can be found since prehistoric times. For example, Bangudae (a rock picture of hunting whales) showed how individuals gained knowledge on edible things in nature to survive. Also, Korea's specific vegetation, climate, and culture led to development of the Sikchi suitable for Koreans. The myth of Dangun of Gojoseon dynasty demonstrated the first historical record of the Sikchi. Although the Sikchi theory was established in China, Korean food therapy was systematized and developed into a unique diet that reflects our hyangyak (Korean herbal medicine) and constitution. For the king and royal family's health, Seungjeongwon-Ilgi (national-level documents of royal records) and other medical books recorded many examples of Sikchi practice, which were different from China or Japan. The wide spread of the royal Sikchi practice among citizens promoted the notion that food was a useful way to promote health and treat disease. The Sikchi should be seen as not only a kind of life-sustaining method but medicine and food-based medicinal food therapy. Further, the Sikchi refers to the treatment process of adjusting the gaps between medicine and the patient's condition with the mercenary technique called sumgoreugi (take a breather)

Keywords Sikchi, Shizhi, Seungjeongwon-Ilgi, Hyangyak (Korean herbal medicine), Sumgoreugi (take a breather)

Introduction

Since the existence of mankind, the most basic methods to maintain life have been the selection of food, the efficient intake of nutrients, and the way to respond to diseases. In the initial process of searching for food, people fought against hunger and learned how to distinguish between beneficial and harmful foods. Also, when people were sick, they knew which foods cured or aggravated the disease. Instead of dwelling on the simple instinct of appetite, a basic human need, they accumulated wisdom to maintain health through food experience. Since ancient times, mankind has always made great efforts in

the struggle between life and death, learning how to eat to avoid getting sick and getting better from disease.

In Northeast Asia, health puts value on homeostasis, meaning a balance of the body in harmony with nature, and emphasizes the practice of Yangsheng (養生, to keep in good life) [1], which is interpreted as modern nutrition or health. The ancient Greeks thought that all kinds of phenomena related to disease or health linked the cosmic elements with the composition of the human body based on the natural philosophical perspective based on epistemology. Also, the ancient Greeks found that food played an essential role in treating physical and mental illnesses. Further, Socrates and Plato believed that there was a correlation between food and disease and philosophical idealism that distinguished between the material and the spiritual. Hippocrates said [2], 'Let food be thy medicine and medicine be thy food.' According to the Corpus Hippocraticum, 236 plants were used for dietary therapy to treat patients' diseases [3]. Hippocrates knew

*Correspondence: Byoung-Seob Ko bsko@kiom.re.kr Korea Institute of Oriental Medicine, KM Convergence Research Division, Yuseongdae-ro, Daejeon 34054, Korea



© The Author(s) 2023. **Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit http://creativecommons.org/licenses/by/4.0/.

Ko Journal of Ethnic Foods (2023) 10:8 Page 2 of 15

that certain foods were effective in preventing physical or mental illnesses. Although the East and West share the same notion (i.e., maintaining health via dietary therapy), each region developed its characteristic in climate, culture, and history.

Oriental medicine was traditionally used in the three countries of Northeast Asia, which had secured a significant amount of efficacy and safety due to clinical experience accumulated over thousands of years. Sikchi [4], one of the treatment techniques of Korean medicine, was a unique food treatment method not found in Western medicine and had elements of modern nutrition and health. Sikchi was called shizhi (食治) [5, 6] in China.

To maintain a living, people gained experience in choosing food sources. In the early stage of survival, people searched for edible food, chose beneficial foods, and gradually moved to an advanced stage to avoid harmful food. This process allowed people to distinguish food and poison, prevent disease, and restore energy. People had naturally learned that "Drug (藥) and food (食) were the same sources (藥食同源) [7–10]" when only totems and shamans (available medical activities in early human beings)-based medical practice were possible. People gained knowledge of implementing food therapy for health care from nature. Nutritional intake using food sources was considered effective in treating and/or preventing physical and mental diseases, and food intake greatly influenced human behavior.

Longevity and healthy life have become the focus of attention since the birth of mankind, but in various situations, healthy longevity was still challenged by cultural conflict.

As a rule of survival, people already learned to adapt to nature, distinguished between poison and edible food, and used it for a cure. They found that food provided a source of life-sustaining nutrients to prevent and treat diseases. This discovery led to the birth of the Sikchi. This medical technology was created based on the wisdom and experience of oriental medicine and had two functions: treatment and prevention.

Korea is a 'Country of Record' and has many national-level documents, such as royal records and medical books, that report medical treatment in relation to food intake. For example, Joseonwangjosillok (朝鮮王朝實錄, Veritable Records in Joseon dynasty) [11] and Seungjeongwon-Ilgi (承政院日記, the Diary of the Royal Secretariat) [12] have been famous for royal Sikchi treatments based on the history of the royal family. Of the royal records in Joseon dynasty, the Seungjeongwon-Ilgi contained examples of Sikchi practice for the health of the king and the royal family, which cannot be found in China and Japan. Moreover, Uibangyuchwi (醫方類聚) [13] illustrated useful information on Sikchi practices,

highlighting the value of Sikchi in health treatment and preventive medicine functions and contained the largest number of dietary prescriptions and practical examples among traditional medicinal books at home and abroad.

In Korea, the importance of Sikchi had moved from the royal level of health to community health. The health secrets of the royal family were reflected in folk remedies, which had various effects on food and health. This review aims to explore the different philosophical and functional values of Sikchi. To date, many Koreans still live by sticking to ancient wisdom and traditions, such as using Sikchi. Therefore, it is essential to analyze the philosophical value of Sikchi in order to determine the key that gives uniqueness to the health of Koreans.

To find the role of Sikchi in the modern world, the present study discussed the concept of Sikchi in oriental medicine, the significance of Sikchi treatments in the Seungjeongwon-Ilgi, and royal records from the perspective of food and medicine.

Development of Korea's Sikchi

The Sikchi is a medical treatment that prevents and treats diseases via dietary food intakes, and its theories and techniques have been transmitted and systematized over thousands of years. The history of Sikchi can be found from prehistoric times. The prehistoric age was the first time humans appeared on the Korean Peninsula, and there were no letters. The Bangudae Petroglyphs in Daegok-ri, Ulju-gun depicted whales, turtles, deer, tigers, birds, hunting for fish, and so on [14]. In this painting, a glimpse of the people's desire for abundance through hunting can be found. People in the prehistoric era gained experience, knowledge of distinguishing between edible and inedible things in nature, and diversified food choices, leading to maintaining life. The first time Sikchi appeared in historical records was the Dangunsinhwa, the first sovereignty myth in Korean mythology [15].

A bear and a tiger lived together in the same den and begged Hwanung to become a human. Hwanung was the son of Hwanin, the god of heaven and the father of Dangun. Hwanung gave them a bunch of divine mugworts and 20 garlic cloves. In Korea, mugwort has been considered a plant with mysterious medicinal properties, and there has been a long tradition of hanging dried mugwort at home for the household's health. Also, garlic has been used often to season foods. From this tradition, it can be assumed that Korean people have been innately using food treatment. Korean people made unique food treatments (different from China and Japan) and developed the Sikchi as a dietary method. Hongikingan (弘益人間) [16], the founding ideology of Gojoseon, put great importance on life and health to benefit human beings widely, which was in line with the Sikchi theory. Although most Ko Journal of Ethnic Foods (2023) 10:8 Page 3 of 15

of the records from the Three Kingdoms (Shilla, Baekje, and Goguryeo) period were not told, relics related to Sikchi could be found in ancient tombs. The Goguryeo's kitchen and food customs appeared in their tomb painting, No.3, the Anak Tomb [17]. This was the painting demonstrating the high-quality technology of Sikchi in Goguryeo dynasty. The records in the Nihon Shoki (日本書紀)[18, 19] noted that there was a dietary therapy imported to the Japanese royal family from the Three Kingdoms. This was good evidence of how high a skill we practiced. Moreover, after Chinese characters were introduced, the Sikchi was translated and recorded in medical books and has been handed down for a long time. Through trade with Chinese medical books, the wisdom and experience of our ancestors were systematized and developed into a scientific and unique Sikchi technique.

The Sikchi was guite settled and completed in Joseon dynasty. Joseon recorded valuable data on the health of the king as well as the health of the royal family, diet, and treatment of diseases in the form of diaries in Annals of the Joseonwangjosillok, Seungjeongwon-Ilgi, and Ilseongnok (日省錄, Daily Records of the Royal Court and Important Officials) [20]. Hyangyakjipseongbang (鄉藥集成方) [21] and Uibangryuchwi (醫方類聚)[22, 23] were published during the reign of King Sejong, Sikryochanyo (食療纂要) [24] by Jeon Sunui published during the reign of King Sejo, and Donguibogam (東醫 寶鑑) [25] published during the reign of King Gwanghaegun. These books documented a significant level of Sikchi. Hyangyakjipseongbang was a medical book that compiled Hyangyak (鄉藥, Domestic herbal medicines) and prescriptions in Goryeo Dynasty, and summarized folk medicine closely related to Sikchi and private medical plants. It utilized native medicines grown in Korea instead of Chinese herbal medicines [26]. Hyangyakjipseongbang was a medical book that newly compiled herbal medicines prescriptions and compositional herbs from Goryeo dynasty and contributed to the general publicization of herbal medicines in Korea. Uibangryuchwi consisted of 266 volumes and was cited in more than 153 medical books from the Tang, Song, Yuan, and Ming periods in China; and is the largest medical book in the three Eastern countries, Korea, China, and Japan. Of cited books, about 40 medical books contained contents that have disappeared or been transmitted in Korea and China [27].

Tang dynasty in China, Shíyīxīnjiàn (食醫心鑑) was written by Zǎn yīn (咎殷) [28]. Sòngshǐ·yìwénzhì (宋史·藝文志) recorded Shíyīxīnjiàn in two volumes but disappeared in China. Although this book was lost, Uibangryuchwi recorded its contents. The volume of Sikchi in Uibangyuchi was written mainly by quoting Shíyīxīnjiàn, Shízhìyǎnglǎoxù (食治養老序) [29], and

Tàipíngshènghuìfāng (太平聖惠方) [30]. The Sikchi introduced a variety of the method, such as glutinous rice (餅, bǐng), porridge (粥, zhōu), steaming (蒸, zhēng), seop (羹, gēng), lamb (羔, gāo), wine (浸酒, jìn jiǔ), tea (茶, chá), and soup (湯 tāng). The section of Shízhìyǎnglǎoxù in Uibangryuchwi emphasized the Sikchi theory that healing a disease was not as best as preventing and treating it, and treatment with medicine was not as best as treating it with food. This Sikchi theory conceptualized Shízhìyǎnglǎo by combining the theories of Shíyīxīnjiàn and Shiliaobencao and the recipes of Taipingshenghuifang. It also emphasized treatment priorities: "In the treatment of disease, the first thing to do is to take food as food, and if it does not get better, use the medicine." Sikryochanyo agreed substantially with Hyangyakjipseongbang or Uibangryuchwi and contained essential dietary prescriptions from both books. The contents of Shiyixinjian found in Uibangyuchwi, which disappeared in China, were later known from Japan to China and were again printed and quoted in China in 1901. It is proof that China used the Shíyīxīnjiàn of Sikchi relations less frequently than Korea In the preface of Sikryochanyo, Jeon Sunui emphasized the importance of food by saying, "When the ancient ancestors established a prescription, they first treated them with food, and if they did not get better, they treated them with medicine." Sikryochanyo was the oldest food-specialized book of Sikchi in Korean medicine and was referred to as Hyangyakjipseongbang. The author who participated in the compilation of Uibangryuchwi thought that he was influenced by it to a large extent. In the Sikryochanyo, "The prescriptions can be used at all times, selected, written based on Shiyī xīnjiàn, Shiliaobencao, Buqueshiliao (補闕食療), and Daguanbencao (大全本草)." The author has established a hyangyak-centered medical philosophy to treat diseases using ingredients readily available from land in Korea. He also emphasized treatment's priority: "When a person lives in the world, food is first, and medicine is next." The Sikchi in Donguibogam was quoted from qianjinfang (千金方, abbreviation for Beijiqianjinyaofang) of SunSimiao. In Donguibogam, the Sikchi meant Sikyakyobyeong (食藥 療病)—treatment of sickness with food and medicine, emphasizing "Food is the basis for growing life (水穀爲 養命之本)." The basics of health were from right diet and how to manage the disease depending on the medicine. If eating was incorrect, it was difficult to preserve life, and if the nature of the medicine was not known, the disease could not be cured. Table 1 summarized the relationship between citing books from China and the Sikchi books published in Korea.

Uirimchwaryo (醫林撮要) [31–33] and Jejungsinpyeon (濟衆新編) [34, 35] strove to develop the Sikchi according to our climate and constitution. Unlike the previous

Ko Journal of Ethnic Foods (2023) 10:8 Page 4 of 15

Table 1 The relationship between citing medical books published in the Joseon Dynasty and Chinese medical books

Chinese name icine — By comparing local we medicines, verifying the edicine, and encouraging lyak books of Seongjong books of Seongjong books of Seongjong hits and medicines for the sand medicines for the sand describes how to books of Seongjong ft., 2009 (新文類家) I, 2009 (新文教) I, 2009 (新文教) I, 2009 (新文教教) I, 2009 (新文教教教) I, 2009 (新文教教教教教) I, 2009 (新文教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教教	Joseon Dynasty medical books	Editor	Year of publication	Summary of main contents	Chinese medical books ^{a)}	
Not burgaye Reduction of Sejong 15th, Competed in 1435. Stabilishment of thy angular medicine—By comparing local plant plant separation with clinical medicine—By comparing local and expenditiones with Chinagyak. Inch competed in 1435. A competed in 1435. Published in 1445. Selong 27th, Competed in 1435. Published in 1445. Published					Chinese name	Year of publication
Sejong 27th	Hyangyakjipseongbang (總藥集成方)	Yu Hyo-tong Noh Jung-rye Park Yoon-deok	Sejong 15th, issued year:1433,	Establishment of Hyangyak medicine—By comparing local domestic medicines with Chinese medicines, verifying the Hyangyak name of the herbal medicine, and encouraging and expanding the use of Hyangyak	Taiping shènghuifang(太平聖惠方) Shengjizonglu(聖濟總錄)	Song, issued year: 992 Song, Issued year: 1111 ~ 1117
Jeon sun-ui Sejo 6th tate and y brown to man and describes how to published in 1460 published in 1460 that are easily available in daily life and describes how to manage 45 diseases and symptoms and describes how to consider the disease and symptoms are good and tabook that froat and describes how to consider the disease and symptoms and describes how to consider the disease and symptoms are good and tabook that froat and managed 45 diseases and symptoms and describes how to consider the disease with food and medicine with the disease with the and medicine with the disease with the main effects, containdications and nickname were encoded effects, containdications and effects of the disease of the green for the green for the disease of the green for the disease of the disease file and each of the disease of	Uibangryuchwi (醫方類聚)	Jiphyeonjeon, Jeonuigam ^{b)}	Sejong 27th, Completed in 1435, Seongjong 8th published in 1477	Completed with 365 volumes of Sejong Published in 266 sheets and 264 books of Seongjong Shizhiyānglāoxu(食治養老序) [©] It recorded the necessary medicines and medicines for the health and longevity of the parents	Bejijqianjinyaofang(備急千金要方) Tajpingshènghulfang(太平聖惠方) Shiliaobencao(食療本草) Shiyixinjian (食醫心鑑)	Tang Dynasty Song, issued year. 992 Tang Tang
Heo Jun Gwanghae 2nd World Registered Heritage July 31, 2009 YYkuezhengzhuan(嚴學正像) Published in 1610 Quoting the Ulbangnyuchwil 解方類形 Quoting SunSimiaso gainfinang (千金方) Sikyakyobyeong (食療療剤 Treat the disease with food and medicine Wanbinghuichun (黃種百春) Yang Jesus Myeong jong® Teca and taboo foods are written Coad and the Sikyakyobyeong (食養粉門 大中) 60 Mingyizahu (母醫學太門) Wanbinghuichun (黃種百春) Wanbinghuichun (黃種百春) Wangdalmun (黃種四十十) 60 Mingyizahu (母醫學太門) Wangtablas, green beans, red beans, black beans [羅太], millet Wanbinghuichun (黃種百春) Sikgi (後是 food at beap) Do not eat alcohol, wheat flour, rabbit meat, chicken livet, published in 1739 anglo (養老別) The taking good care of the aged and supplements nutrition with portiage. The prescription was provided a recept of 11 ingredients and efficacy of each drug, and records the main effects. The Amain treasment, side effects, containdications and inchannes were recorded inchannes were recorded the used prescriptions from the	Sikryochanyo (食療纂要)	Jeon sun-ui	Sejo 6th published in 1460	Gan-ibang (簡易力) from Sikchi It is a book that records how to treat diseases through foods that are easily available in daily life, and describes how to manage 45 diseases and symptoms	Shiyixinjian(食醫心艦) Shiliaobencao(食療本草) Kyöngsatüngnyutaegwan poncho (經史證類大全本草) ⁽⁴⁾	Tang Tang Song, Issued year: 1108
Yang Jesus Myeong jong ^e	Donguibogam (東醫寶鑑)	Heo Jun	Gwanghae 2nd published in 1610	World Registered Heritage July 31, 2009 Quoting the Uibangryuchwi(醫方類聚) Quoting SunSimiaos qianjinfang (千金方,) Sikyakyobyeong(食藥漿病) Treat the disease with food and medicine	YiXueZhengZhuan(醫學正傳) Yixuerumen (醫學入門) Gūjīnyjijan (古今醫鑑) Wanbinghuichun (萬病回春)	Ming, Issued year. 1531 Ming, Issued year. 1580 Ming, Issued year. 1576 Ming, Issued year. 1587
Kang myeong-gil Jeongjo 23rd anglo (豫老 ¹). The taking good care of the aged and suppublished in 1799 published in 1799 when the old man becomes weak, the aged supplements nutrition with portidge. The prescription was provided a recipe of 11 ingredients Yakseongga (樂杜宗): it was described the characteristics and efficacy of each drug, and records the main effects. The main treatment, side effects, contraindications and nicknames were recorded based on Donguiglogam, the used prescriptions from the	Uirimchwaryo (醫林捷要)	Yang Jesus	Myeong jong ^{e)}	Food and taboo foods are written (Example) Volume 8 Hwangdaimun (黄疸門 六十) 60 Volume 8 Hwangdaimun (黄疸門 六十) 60 Sikchi (食剤 food therapy) Sikchi (食剤 food therapy) Rogetables, green beans, red beans, black beans [黑丸], millet are good Sikgi (貸局 food taboo) Sikgi (貸局 food taboo) Do not eat alcohol, wheat flour, rabbit meat, chicken liver, grilled fish, oil, green onion, garlic, mustard, or fenugreek	YXXueZhengZhuan(醫學正傳) Danxixinfafuyu (丹溪心法附餘) Mingyizazhu (明醫維著) Yixuerumen (醫學入門) Wanbinghuichun (萬病回春) yingangmù(濟陰編目) Jiyánggāngmù(濟陽編組) Gijinyijiàn (古今醫鑑)	Ming, Issued year. 1531 Ming, Issued year. 1536 Ming, Issued year. 1549 Ming, Issued year. 1587 Ming, Issued year. 1620 Ming, Issued year. 1626 Ming, Issued year. 1626 Ming, Issued year. 1626
royal medicai ciinic are included	Jejungsinpyeon (灣衆新鑑)	Kang myeong-gil	Jeongjo 23rd published in 1799	anglo (豫老) ¹ : The taking good care of the aged and supporting for health When the old man becomes weak, the aged supplements nutrition with portidge. The prescription was provided a recipe of 11 ingredients Yakseonga (豫性歌): it was described the characteristics and efficacy of each drug, and records the main effects. The main treatment, side effects, contraindications and nicknames wene recorded hicknames were recorded nicknames were recorded to the used prescriptions from the royal medical clinic are included	Wanbinghuichun (萬 病 回春) Shòushib ā oyuán(壽 世保元)	Ming, Issued year: 1587 Ming, Issued year: 1615

^a Chinese medical books follow the Chinese notation

b Jiphyeonjeon was printing Bureau and Jeonuigam was medical hospital of the Joseon Dynasty. Kim Ye-mong and Yu Seong-won were collected information about medical treatments.

The medical doctor Jeon Sun-ui compiled the information into one book. Grand Prince Anpyeong and Yi Sa-cheol proofreaded the book

^cThe yanglao(養老) for good health of the aged based on Yǎnglǎofèngqīnshū(養老奉親書) compiled by Chen Zhi of the Song Dynasty, China. ^d Abbreviation Dàquan běncǎo (大全本草), alias Bǔquēshīliáo (埔闕食療大全本草) 신写包, 写의보召과 동아시아 의학사, 과학과 문명, 1권, 93, 2015, 들념, 서울

e Republished edition (published in 1635, Injo 13th)

f it is also called 『Shouqinyanglaoxinshu(壽魏養老新書』 as a book for the care of the elderly. It is unknown when and by whom the edition published in Joseon was published.

Ko Journal of Ethnic Foods (2023) 10:8 Page 5 of 15

medical books in which dietary and medicinal values were recorded in a mixed state, Uirimchwaryo used the Sikchi method by dividing it into the Sikchi and sikgi (食忌, taboo food). On the other hand, Donguibogam listed prescriptions and ingredients commonly used for diseases in the section that organizes medicines. Jejungsinpyeon was a book that simplifies the contents of Donguibogam and contains prescriptions of Naeuiwon (內醫院, a palace pharmacy and hospital, Joseon dynasty) [36] for medical clinics. Jejungsinpyeon was borrowed the theory of the five elements and set up a section of yanglao (養老), and said, '宜以五穀五菜五果禽獸鱗介與 平和五之藥調治.' It described in more detail the content of peaceful(good) Sikchi, such as five grains (五穀), five vegetables (五菜), five fruits (五果), five types of meat (禽 獸), five pieces (鱗介) etc.

Table 1 summarized the citation relationship between Chinese medical books among the medical books published in Korea. Medical books (that do not exist in China) were reborn in Korea and contributed to the Joseon royal family's Sikchi. Korea did not stop at preserving Chinese medical books that had disappeared but combined them with domestic medicinal herbs, Hyangyak, and developed Sikchi into food treatments that the common people could easily use.

History of shizhi

In Zhou (周) dynasty in China, a food doctor (食医)[37] who managed the king's food and nutrition was a specialized field [38–42]. The role of food doctor was more crucial in relation to the king's health compared with internal medicine (疾医), surgeon (瘍医), and veterinarian (獣医).

In Suwen, wuchangzhengdalun (素問, 五常政大論) of Huangdineijing (黃帝內經) [43, 44], recorded as follows: "大毒治病,十去其六,常毒治病,十去其七,小毒治病,十去其八,無毒治病,十去其九。 If you use much medicine to cure a disease, you can rid of six out of ten. Also, if you use it suitably, you can get rid of seven out of ten. And if you use it with a small amount, you can get rid of eight out of ten. If you treat disease without the use of drugs, you can rid nine out of ten. This highlighted effectiveness of treating diseases by food intakes such as grains, meat, fruits, and vegetables rather than excessive use of drugs. Also, Naejing (內經) has discussed the treatment of diseases through a cooperative relationship between medicine and food.

Tang (唐) dynasty in China developed food theory and a dietary treatment called 『 Shizhi 』. The first Sikchi edition of SunSimiao's (孫思邈, doctor and herbalist in Tang dynasty) Beijiqianjinyaofang (備急千金要方) [45, 46] showed that "The root of comfort in the body always depends on food, and the speed of cure for diseases

depends on medicines. Those who do not know how to eat appropriately cannot enjoy a healthy life, and those who do not know the contraindications of drugs cannot properly cure diseases. These two are very important for potency. If you neglect this and do not learn properly, you are truly a pitiful person". MengSeon (孟詵), a disciple of Sun Simiao, compiled a book called Buyangfang (補養方) [47, 48], which recorded 214 medicinal ingredients and 138 prescriptions based on Shizhi chapter of the Beijiqianjinyaofang. Zhangdingren (張鼎人), Meng Seon's disciple, published Shiliaobencao (食料本草) [49]. In Song dynasty, Taipingshenghuifang (太平聖惠方) [50] and Yanglaofengqinshu (養老奉親書) [51] were written, which were in line with the Tang dynasty's ethics of Shizhi and ideology of Yangsheng on dietary intakes. Hu Sihui (忽思慧, The Imperial Physician) of Yuan dynasty published Yinshanzheng yao (飲膳正要) [52], a collection of 61 diet therapies, and Wu rui (吳瑞) published Ri yongbencao (日用本草) [53], a guideline for herbal ingredients used in dietary therapies. Yangshengism was first developed during Míng dynasty. In consideration of Neo-Confucianism, Lishizhen (李時珍) wrote Bencaogangmu (本草綱目) [54], a book explaining the essence of medicinal herbs. Moreover, many ingredients-based dietary books such as Suiyuanshi dan (隨園食單) [55] and Yinshixuzhi (飲食需知) [56] were published in Qing dynasty. However, today, China has emphasized medicinal food cuisine, Yaoshan (藥膳), rather than the Sikchi.

Characteristics of the Sikchi records in Seungjeongwon-Ilgi

In Joseon dynasty, Seungjeongwon was like today's presidential secretary's office. The Seungjeongwon-Ilgi was a diary of the king's daily affairs. It was registered as a World Heritage Site in September 2001 [57], and there were records exist from Injo (1623) to Sunjong (1910). The analysis of Sikchi studied the record of each king's life in Seungjeongwon-Ilgi in the Korean history database of the National Institute of Korean History. For record retrieval, keywords such as yakbang (藥方), sik (食, food), sikeum (食飲, food and beverage), eumsik (飲食, meal), and the Sikchi were used, and the information on Sikchi selection process is displayed in Fig. 1 [58]. The royal doctors prescribed the Chilmi Baekchulsan(七味白朮散) to the queen and made her took the medicine with ginseng tea.

As a result of analyzing the Sikchi treatments in Seungjeongwon-Ilgi, nine treatments were obtained as follows (Fig. 2). For the interpretation, it was necessary to have complex knowledge in several fields, including highly specialized Korean medicine.

In Korea, medical books before the Joseon dynasty have only remained in oral tradition or records, and a few remain. The record of Seungjeongwon-Ilgi before King Ko Journal of Ethnic Foods (2023) 10:8 Page 6 of 15

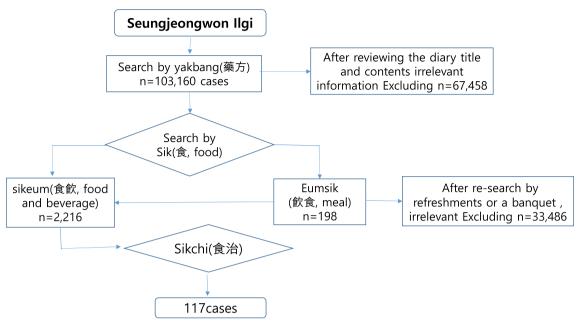


Fig. 1 The PRISMA flow diagram for the systematic review of sikchi using the database searches in the records of Seungjeongwon llgi from Historical Contents Provided by National Institute of Korean History

Injo was burned during the Japanese invasion of Korea in 1592. Fortunately, many Seungjeongwon-Ilgi that exist today refers to the Yakbang Ilgi (pharmacy diary in Josen dynasty) and has described in detail the practical applications and treatment methods of Sikchi.

The records from the 92 books of the Seungieongwon-Ilgi, December 7, King Injo 23rd, were as follows [59];

According to the decision to stop taking the prescription for the Crown Prince,

- 1. Patient—Crown Prince.
- 2. Examination time—10 am (巳正, the time of the Snake in the 12 zodiac).
- 3. Decision-making manager—Seung-ji (King's secretary) Kwang-wook, Kim.
- 4. Royal Doctors—Deuk-ryong, Choi and Gun, Park etc.
- The Crown Prince's Condition—Almost all of the symptoms the Crown Prince suffers from have improved.
- Characteristics of the disease—The spirit of the evening is weak and the heart is excited, and the symptoms of palpitations are also reduced, and the disease is getting better.
- 7. Treatment situation and problems—It is difficult to continuously take medicinal decoctions according to the prescription in the cold season?. Treatment situation and problems—bitter decoction should not be used continuously in the cold season.

- 8. Troubleshooting—Stop the decoction and adjust it with the Sikchi.
- 9. Reference—Yakbang Ilgi(藥方日記, Pharmacy Diary) [60]

There was also a record of Sikchi in Joseonwangjosillok, a history book including, not only general state affairs, social affairs, and economy, but health and death of the king. The difference from Seungjeongwon-Ilgi was that Joseonwangjosillok was compiled after the death of the king. The record of Sikchi has a complementary relationship to Joseonwangjosillok, although the use case is not specific, like the Seungjeongwon-Ilgi. The comparison between Joseonwangjosillok and Seungjeongwon-Ilgi is an important topic to be studied in the future, as each record is vast.

Example of Sikchi's application in Seungjeongwon-Ilgi

The records of the Sikchi in Seungieongwon-Ilgi can be divided into three types: (1) Cases with only prescription records without Sikchi treatments, (2) Cases with the record of prescription and Sikchi, and (3) Cases without the record of prescription and Sikchi.

Cases with only prescription records without Sikchi treatments

In a report on the well-being of the queen on May 25, King Injo 24th, only a prescription record [61] was

Ko Journal of Ethnic Foods (2023) 10:8 Page 7 of 15



Fig. 2 The storage room and original book of the Seungjeongwon Ilgi in Kyujanggak Institute for Korean Studies of Seoul National University, and the diary contents of December 7, King Injo 23rd, in the 92 books. **A** Bookshelf of the Seungjeongwon Ilgi in Kyujanggak Archives, **B** Exhibit of the original Seungjeongwon Diary, **C** A UNESCO documentary World heritage certificate, **D** Contents of the meeting to the decision to stop taking the prescription for the Crown Prince and treat with sikchi. But information of sikchi wasn't noted. It was showed the record form of the diary that could obtain useful information of sikchi.*Photographs a, b and c were taken by the author with permission from Kyujanggak

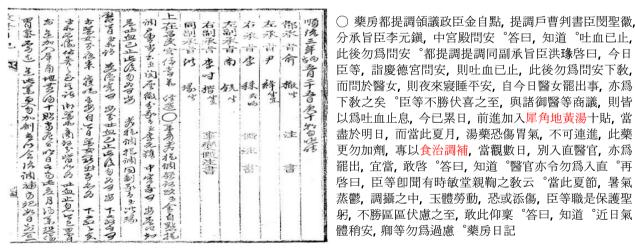


Fig. 3 Seogakjihwangtang (犀角地黄湯) of cases with only prescription was recorded without information of sikchi treatments by the diary of May 25, Injo 23rd, in the 94 books. *Original diary provided by Kyujanggak

included, but no record on the Sikchi can be found. The diary records as follows:

[Original] 則皆以爲吐血止息,今已累日,前進加入犀角地黃湯十貼,當盡於明日,而當此夏月,湯藥恐傷胃氣,不可連進,此藥更勿加劑,專以食治調補,當觀數日,別入直醫官,亦爲罷出,

[Translation] It has been several days since the vomiting blood had stopped, and the last 10 servings of Seogakjihwangtang (犀角地黄湯) will all be drunk tomorrow. In such a summer, you should not make them

in a row because you are afraid that the decoction will damage the qi of the stomach. Do not prepare this medicine again. Only treat it with Sikchi (食治調補) to keep you energized and should be looking at it for a few days.

In the diary, the queen was prescribed ten bags of SeogakjiHwangtang[62]. However, the constant use of SeogakjiHwangtang may damage the stomach, so the queen was treated with Sikchi. It was an important piece of evidence explaining the use of the Sikchi rather than treating disease with prescription (Fig. 3).

Ko Journal of Ethnic Foods (2023) 10:8 Page 8 of 15



○ 藥房啓曰, 伏未審夜來, 聖體, 若何? 中宮殿症候, 伏聞醫女來傳之言, 昨日所進, 薏苡粥三合, 養元粥五合, 水麫二合, 湯藥及生脈散, 一半進御, 夜間進聚米飲二合。而前後所進, 幾盡嘔吐, 大便滑泄之候, 有加無減, 自午後, 神氣昏昏, 不能收拾, 夜間一樣沈困, 寢睡未得全安云。近來食治頓減, 元氣虛脫之中, 吐瀉棄發, 症勢比前添劇, 臣亦不勝煎悶之至。與諸御醫等商議,則以爲, 即今治法, 定嘔止泄, 扶接元氣, 最爲緊肠, 蔘茶一兩重, 入薑・棗・黄土水濃煎, 連次進服, 七味白朮散, 亦爲連進, 宜當云。蔘茶及湯藥, 並爲煎入矣, 敢此問安。答曰, 知道。無事矣。

Fig. 4 Cases with the records of prescription and sikchi was recorded by the diary of August 3, Sukjong 27rd. in the 399 books. For refreshment, the royal doctor prescribed Chilmibaekchulsan (七妙自產山) to the queen and made her took the medicine with ginseng tea. *Original diary provided by Kyujanggak

Cases with the records of prescription and Sikchi.

In the case of asking the king's well-being and prescribing ginseng tea and decoction to the queen on August 3, King Sukjong 23rd, there were both prescription records and the sikchi [63]. The diary records as follows:

[Original] 伏聞醫女來傳之言,昨日所進,薏苡粥三合,養元粥五合,水麪二合,湯藥及生脈散,一半進御,夜間進粟米飲二合。而前後所進,幾盡嘔吐,大便滑泄之候,有加無減,自午後,神氣昏昏,不能收拾,夜間一樣沈困,寢睡未得全安云。近來食治頓減,元氣虛脫之中,吐瀉兼發,症勢比前添劇,臣亦不勝煎悶之至。與諸御醫等商議,則以爲,即今治法,定嘔止泄,扶接元氣,最爲緊務,蔘茶一兩重,入薑·棗·黃土水濃煎,連次進服,七味白朮散,亦爲連進,宜當云。蔘茶及湯藥.

[Translation] The queen's symptoms at Junggungjeon were reported by the doctor's maid. Yesterday, three hops of Korean Job's-tear porridge, five hops of Yangwon (mixed rice and glutinous rice) porridge, and two hops of water noodles were eaten. A decoction was taken half of Saengmaeksan (生脈散) and two hops of a millet porridge at night. After that, the vomiting peaked, and the diarrhea symptoms increased and did not diminish. Since the afternoon (神氣, A word that combines spirit and energy) was mixed up and unable to deal with it, so he was always heavy and tired at night, so she could not sleep comfortably. Lately, the symptoms have been more severe than before; eating was not adequate, and there was not much energy, so vomiting occurred, and the symptoms were worse than before, so servants were also frustrated. As discussed with royal doctors, the treatment decided to stop vomiting, stop diarrhea, and help stamina from now on. The most urgent thing was to make a ginseng tea with ocher water by adding ginger and jujube to 1 nyang of ginseng. I will prescribe the Chilmi Baekchulsan (七味白朮散) and take it with ginseng tea.

In the diary, Korean Job's-tear porridge made with various types of grain, including glutinous rice, water noodles, and a gruel of foxtail millet, was used as the Sikchi treatment. Saengmaeksan (生脈散) [64] and chilmibaekchulsan (七味白朮散) [65] with ginseng tea (made with ginger and jujubes and boiled with ocher water) were used were also prescribed (Fig. 4). In Korea's old metrics, a 1 hop was accounted for about 0.18 L and a 1nyang was 37.5 In December 7th of King Injo (23rd) (Fig. 2), neither the prescription nor the Sikchi were described [66]. As a result of examining the diary before and after this diary, the following was written in the diary on December 2 of the same year.

[Original] 則世子**所**患諸症, 頗似減歇, 寢睡飲食, 亦勝於**前**日少差之時, 但日西後初昏之間, 尚**有**虚煩之**候**。 黃芩湯, **去**荊芥穗, 代知母, 加地骨皮 貝母干汗[汁]炒各一錢, 進服五貼宜當云。

[Translation] The symptoms the Crown Prince suffered from seem to have improved considerably, and sleeping and eating were better than when he had a little relief. However, after the sun goes down until early evening, there are still symptoms of Hebun (虚煩). So instead of Hyeonggaesoo (荊芥穗) in Hwang Geum-tang (黃芩湯) is better to add 1 don each of Jimo (知母, Anemarrhena asphodeloides), jigolpi (地骨皮, Lycium chinense), and roasted paemo (貝母, Fritillaria ussuriensis). It is better to use a five packages of prepared decoction.

In the diary on December 2nd of the same year (Fig. 5), the Sikchi treatment was related to Heobeon. It was a

Ko Journal of Ethnic Foods (2023) 10:8 Page 9 of 15



○ 藥房提調行上護軍臣金堉,分承旨臣李之恒,中宮問安 °答曰,一樣 °世子宮入診正時,已初 °三提調啓曰,今日令崔得龍·朴頵等入診,則世子所患諸症,頗似減歇,寢睡飲食,亦勝於前日少差之時,但日西後初昏之間,尚有虛煩之候 °黃芩湯,去荊芥穗,代知母,加地骨皮・貝母干汗[汁]炒各一錢,進服五貼宜當云 °此藥劑送之意,敢啓 °答曰,知道 °藥房日記

Fig. 5 If there is no record of prescription and food intake, it is necessary to examine the days before and after the diary. The clue to the diary of In December 7th of King Injo 23rd was found in the diary of December 2th. The symptoms of Hebun (虛煩) became useful information and Hwanggeumtang(黃芩湯) was a useful prescription to infer sikchi. *Original diary provided by Kyujanggak

symptom of anxiety and not being able to sleep comfortably. The Yin (陰) was empty and there was heat inside, so the heart felt stuffed. In this case, it was necessary to review the diagnosis before and after. Hwang Geum-tang (黄芩湯) [67] prescribed on December 2nd of Injo used jimo (知母, Anemarrhena asphodeloides) without hyunggaesoo (荊芥穗, Schizonepeta tenuifolia). Instead, it was made with adding more than 1 don each of jigolpi (地骨皮, Lycium chinense) and roasted paemo (貝母, Fritillaria ussuriensis). In Korea's old metrics, a 1 Don was about 3.75 grams. This piece of record allowed to predicted the use of the Sikchi.

Characteristics of Sikchi

The Sikchi refers to the treatment or prevention through food. In Korean medicine, it was used during recovery and for disease prevention. It was a life-raising method, and in the modern sense, it was a medicine and foodbased medicinal food therapy.

In Korean medicine, food was not limited to the simple instinct of appetite (a basic human need) but was also influenced by social, economic, and cultural factors. Based on the ideological "yin-yang (陰陽) and Five Elements (五行, metal, wood, water, fire, and earth)," very rich experiences that invigorate life have been accumulated. Also, it was developed into the concept of prevention, treatment, and recovery of diseases. Oriental medicine, called the medicine of Jeung (證) [68], was an important factor in protecting health. It defined disease patterns and maintained the balance of the body, resulting more comprehensive character than Western medicine. The causes of disease were not limited to each part of the body, but a physiological problem of the whole body resulted in an imbalance of yin and yang in the body. In oriental medicine, health strengthens the body self-reliance in harmony with nature and increases the ability to control various diseases, one of the important characteristics that Western medicine does not have. The Sikchi treatment was to find the root of the disease and maintain the balance in the body rather than direct treatment. The yin and yang signals in the effect of the Sikchi with nature and organically cooperate to deliver new vitality to the organs and to produce functional activity. Recently, these characteristics of Sikchi gained attention as an appropriate method for improving the quality of life.

If our diet was too biased to one side, the nutritional balance in the body was disturbed, sending a red signal to maintaining health. A diet without overeating and unbalanced eating was the basis of a diet that harmonizes yin and yang. The Sikchi had a very rich experience of yin and yang that energized life. The languages of yin and yang were eyes to see the world and were considered important.

Hyangyakjipseongbang was a book of the Joseon dynasty that ordered the compilation of a book covering all the Hyangyak (鄉藥), thinking that the locally produced herbs would be more effective and suitable for endemic diseases in treating diseases of Korean people. Hyangyakjipseongbang was based on Hyangyakjesaengjipseongbang (鄉藥濟生集成方) [69] that complied hyangyak books from Koryeo dynasty. In Koryeo, there was a Sikui (食醫, food doctor) in Sangsig-guk (尚食局) [70], who made the king's meals by systematically managing the experience of the hyangyak (鄉藥). Since sikui were passed down as Saseonseo (司膳署, providing food inside the palace) [71] until the early Joseon dynasty, a considerable level of Sikchi was expected to be developed.

At that time, Chinese medicine was called Tangyak (唐藥) and was difficult to obtain due to its high price, but Hyangyak, a medicine from Koryeo and Joseon, was Ko Journal of Ethnic Foods (2023) 10:8 Page 10 of 15

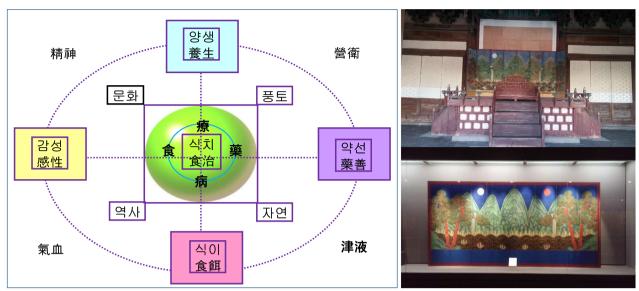


Fig. 6 This painting depicts the character of Sikchi, which is a mutual relationship that regulates and maintains the health of our body through food. Sikchi has developed with a close mutual relationship between health factors of oriental medicine and national and social factors. In particular, Korean sikchi contains the emotional realm of sincerity, and a representative example is royal sikchi, and the Ilwolobongdo (日月五峯 圖) is a symbol of wishing for the king's health and prosperity, and has a close relationship with sikchi. *Photographs were taken by the author with permission from Changqyeonggung Palace and National Palace Museum of Korea

relatively easy to obtain. King of Sejo wrote the theory of medicine (醫藥論) [72], emphasizing the importance of the food doctor who made food to suit king's health. He said that when the taste was sweet to suit, the energy was comfortable, and the body suffered when the taste was bitter. Sikchi was independently completed from the early Joseon Dynasty. Sikryochanyo, published during King Sejo, developed food for the Naeuiwon (内醫 院, the royal medical office in Joseon dynasty) [73] level of medical care rather than the king's food. In the Sikryochanyo, the body's health should be treated with five grains (five grains), five types of meat (five organs), five fruits (five fruits), and five vegetables. In Donguibogam, the definition of Sikchi in Korea was sigyakyobyoung, which recorded the importance of food and medicine in the relationship between disease and treatment. Food and medicine were not mutually exclusive but complemented each other. Yo (療) encompassed not only the meaning of treatment to cure a disease but also medical service (醫療), recuperation (療養), and treatment (診 療). In addition, it also avoids hunger, such as Yogi (療 飢, appease one's hunger).

The existing concept of Sikchi considered the synergistic effect of the inter-relationship between health care, medicine, and diet. However, our Sikchi were different in that they contained the emotional domain of sincerity, and a representative example was the royal Sikchi (Fig. 6). Also, the development of Sikchi was important factor in history, culture, natural environment, and climate. The

Sikchi focused on the management of Jeong (精, essence), qi (氣, energy), Sin (神, spirit), Hyeol (血, blood), Jin (津, secretion), Aek (液, liquid), Yeong (營, nutrition), and Wi (衛, defend). In Korean medicine, each element was interlocked and involved in or with maintaining life. In order to maintain life, Yeongwi (營衛) was the life activity of eating food and defense through the nutrient intake, and Jinaek (津液) was water to transport and act on internal secretion to support the body. Qihyeol (氣血) was a channel of the propellant of the life force or passageway to carry energy, and Jeongsin (精神) was the essence and spirit to be in charge of controlling growth and reproduction in physiological activities. The Sikchi made our body effectively use and control the roles in the body through food suitable for functional action and nourished and sustained people's health. It was thus called the body's battery.

Ilwolobongdo (日月五峯圖) [74], a large folding screen behind the king's throne, symbolized the authority of a king in Joseon dynasty. Of many ways to interpret the paintings, the main explanation could be to wish the king's good health and prosperity. In Korean medicine, the sun and moon in the picture described the spirit as yin and yang, respectively. The five mountains described the five elements, the red color of the pine tree described the qi and blood, and the waterfall described the essence or fluid. In the Seungjeongwon-Ilgi, Sikchi was used for prevention, treatment, and recovery stages for the king's and royal family's health.

Ko Journal of Ethnic Foods (2023) 10:8 Page 11 of 15

Sherlock Holmes' analysis of the Sikchi in Seungjeongwon-llgi

In the Seungjeongwon-Ilgi, there is no direct information about Sikchi, still, it is possible to predict Sikchi usage by analyzing the record, just like Shelock Holmes. For example, if there was a prescription record, the Sikchi treatment could be predicted by referring the characteristics of the prescription and the patient's condition. Table 2 summarizes the results of the analysis.

On May 25, King Injo (24th) had only a prescription using Seogakjihwangtang, but decoction could damage the stomach in the summer. Instead, the doctor treated the king using Sikchi (而當此夏月, 湯藥恐傷胃氣, 不可 連進,此藥更勿加劑,專以食治調補). Seogakjihwangtang provided an essential clue to finding out what kind of Sikchi was used. It was composed of rhinoceros unieornis (犀角), rehmannia glutinosa (生地黄), paeonia suffruticosa (牧丹皮)—helping to clear interior heat, and paeonia lactiflora (赤芍藥)—strengthening the blood. The patient's condition caused high fever, bleeding symptoms, and mental confusion; often, it can be supposed that he was in the late stage of the fever. In this case, since a lot of antipyretic medicine was used to remove the interior heat, the stomach and spleen may be damaged. To help the spleen and stomach recovery, ginseng, Astragalus membranaceus, Atractylodes macrocephala, and ginger should be avoided since these herbs provide heat in the body system, causing side effects. Therefore, the Sikchi practice, such as shellfish porridge, mung bean porridge, and lotus leaf porridge, might be the best alternative [75].

In December 7, Injo (23rd), any prescription or the Skichi treatments was recorded in the diary. But, the Sikchi practice could be found in treatment of Heobeon (虚煩) [76]. Individuals with Hobeon had low energy and internal fever, making them difficult to sleep well due to chest tightness and anxiety.

On December 2, king Injo (23rd), Hwanggeum-Tang (黄金湯) was prescribed, and it was an important clue. The decoction was made with Gamcho (甘草, Glycyrrhiza uralensis), Gilgyeong (桔梗, Platycodon grandiflorum), Maekmundong (麥門冬, Liriope platyphylla), Parkha (薄荷, Mentha arvensis), Sangbaekpi (桔白皮, Morusalba), Yeongyo (連翹, Forsythia viridissima), Jeokjagyak (赤芍藥, Paeonia lactiflora), Chija (梔子, Gardenia jasminoides), Hwanggeum (黄金, Scutellaria baicalensis), and Hyeonggaesu (荊芥穗, Schizonepeta tenuifolia). The prescription could be used with and without constituent medicinal substances. Zimo (知母, Anemarrhena asphodeloides), baked Paemo (貝母, Fritillaria ussuriensis), and Jigolpi (地骨皮, Fritillaria ussuriensis) could replace Hyeonggaesu (荊芥穗). Hwanggeum was a representative medicine to treat anxiety. Hyeonggaesoo was mainly used

to treat early colds and a relatively severe fever or reduce sweating. Zimo (知母, Anemarrhena asphodeloides) was a drug that lowers heat and produces energy. The effect of zimo was relieving the heat of the lungs and was used for individuals with a weak stomach; however, vomiting, diarrhea, and indigestion should be taken with caution. Considering the records on prescription, the possible Sikchi treatment was mung bean porridge, red bean porridge, mushroom (Phellinus linteus) porridge [77], and tangerine peel tea.

Discussion

As written in the records of Seungjeongwon-Ilgi, Sikchi was thought to be a mercenary technique called "Sumgoreugi (take a breath)" with the wisdom to control the rate. Sumgoreugi meant calming down for a while and getting things done. In Chinese, it meant pingzhěng (平整), antei (あんてい) in Japanese, and maintenance in English. Korean Hangeul had a rhythm of 3.4 tunes. This melody, also called Sumgoreugi, was related to a phenomenon taking a steady breath when reading a text. Like the rhyme of Hangeul, Sikchi was the rhythm and wisdom that controlled the pace of the body. In other words, the Sikchi was a Sumgoreugi (=breathing process) that controls the interval between the drug and the patient [78].

The Sikchi in Joseon dynasty is still very useful today, so it is used to maintain health while distinguishing it from medicinal herbs, to prevent diseases from semi-healthy to healthy, to help recover from a disease, or to restore a state of weakness after treatment to make it healthy [79, 80]. It is scientifically rational to contribute to health promotion through the Sumgoreugi method of maintaining health. The Sikchi has developed into a method for preventing disease while doubling the effect through proper cooperation between medicine and food, enhancing the effect of medicine, and strengthening the weakened body after being cured. People have always wanted to stay healthy, both past and present. The Sikchi spread from the royal family to the general public and became famous. More importantly, the change in treatment from food to medicine, such as locally-Produced Hyangyak, significantly impacts food intake. Today, it showed a close relationship with medicinal food, which has the function of helping to treat diseases with food.

Moreover, the Sikchi provided health information through analysis, evaluation, and modern interpretation of historical records (such as the Seungjeongwon-Ilgi). The future value is the restoration of the royal Sikchi in relation to health maintenance and disease-free longevity in the aging society. The field of Sikchi creates essential health value, and further research is strongly warranted.

 Table 2
 Example of expected Sikchi by Sherlock Holmes' analysis

Date	symptom	prescription	adjustment	information of Sikchi	Analysis of Sikchi	Expected Sikchi
December 7, Injo 23rd		None	None	To treatment with the Sikchi (以食治調理宜當云)	- Reduction of symptoms of Hebeon - Cold winter—stop the bitter decoction	Guess by diary in December 2, Injo 23rd
December 2, Injo 23rd	a high fever in the chest, irritability, and anxiety	Hwang Geum Tang (責金湯)	Without Hyeonggaesu (荊芥穗), Zimo(知 母,) instead of Hyeonggaesu, Baked Paemo (貝母) and Jigolpi (地 骨皮) were added	None	- If there is heat in the upper energizer, Hwang Geum Tang should be used - The addition of Jimo and Jigolpi is intended to keep the essence from drying out and lower the heat of the lungs in body	- Food of Clear heat and remove toxins - Mung bean porridge, red bean porridge. Suppresses the heat of the heart and lungs: -Tangerine peel tea, ginseng, Phyllostachyos caulis: Treating troubled mind, anxiety, and insomnia: - Mushroom(Phellinus linteus) porridge: Treats chest tightness, fever, and weight loss in normal times
On May 25, Injo 24th	Bleeding due to heat death invading blood, guessing mental symptoms, late fever - stop bleeding - Improvement of insomnia symptoms	Seogakjihwangtang (犀 角 地黄汤)	None	None	- Stopped taking Seogakji- hwangtang because the symptoms of vomiting blood was relieved - With summer approach- ing, - Afraid that his stomach and spleen would be damaged, - Decided to treat Sikchi.	- Food of Nourish yin and clear heat - A treatment method to nourish yin and clear heat - Cleaning fever food - To help the spleen and stomach, ginseng, Astragalus membranaceus, Atracty-lodes macrocephala, ginger, etc. should be avoided : shellfish porridge, mung bean porridge, lotus leaf

Ko Journal of Ethnic Foods (2023) 10:8 Page 13 of 15

Conclusions

The Sikchi in Korean culture was mainly settled and completed during the Joseon dynasty. Joseon was a nation of records and recorded valuable data on the health of the king and the royal family in the Annals of the Joseon-wangjosillok, Seungjeongwon Diary, and Ilseongnok. The Sikchi was independently completed from the early Joseon dynasty.

- Hyangyakjipseongbang summarized a local folk herb closely related to Sikchi and contributed to the utilization of native medicines grown in Korea.
- Uibangryuchwi contained books that had disappeared and were not transmitted in Korea and China. Although Shíyīxīnjiàn was a lost book, its contents were recorded in this book. The volume of the Sikchi in Uibangyuchi was written mainly by quoting Shíyīxīnjiàn, Shízhìyănglăoxù, and Tàipíngshènghuìfāng.
- Sikryochanyo, published during the reign of King Sejo, was developed for food preparation for the Naeuiwon, the royal medical office of Joseon dynasty. The author has established a hyangyak-centered medical philosophy to treat our diseases by using readily available ingredients from our land.
- In Donguibogam, the Sikchi means Sikyakyobyeong. It treated sickness with food and medicine, emphasized as "Food is the basis for growing life (水穀爲養命之本)". It emphasized the significance of the Sikchi, that the basics of health were through the proper diet and managing the disease depending on medicine.
- Uirimchwaryo (醫林撮要) and Jejungsinpyeon (濟衆 新編), written in a similar period, strove to develop the Sikchi according to our climate and constitution.
- The analysis results of Seungjeongwon-Ilgi provided the 9 treatment records of the Sikchi practice. In order to interpret these records, it is necessary to have complex knowledge in several fields, including highly specialized Korean medicine. The records of the Sikchi can be divided into 3 types: (1) Cases with only prescription records without the Sikchi treatments, (2) Cases with the records of prescription and the Sikchi, and (3) Cases without the records of prescription and the Sikchi.

Acknowledgements

The author thanks the National Research Council of Science & Technology (NST) (No. CCL21291-100) for supporting this study.

Author contributions

Author had done the investigation, writing-original draft preparation, writing-review editing, conceptualization, supervision, and project administration. All data were generated in-house, and no paper mill was used. Author agrees to be accountable for all aspects of the work, ensuring its integrity and accuracy. All authors read and approved the final manuscript.

Funding

This research was supported by the National Research Council of Science & Technology(NST) grant by the Koera government(MSIT)(No. CCL21291-100).

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

The author was wrote the thesis 'The Sikchi and the Recorded Cases of Seungjeongwon-Ilgi' in compliance with the research ethics of the Korea Institute of Oriental Medicine and Journal of Ethnic Foods.

Competing interests

The author declares that they have no competing interests.

Received: 4 January 2023 Accepted: 28 February 2023 Published online: 03 April 2023

References

- 1. 1.Britannica, Yangsheng. Available from: https://www.britannica.com/ topic/yangsheng
- Smith R. Let food be thy medicine. BMJ. 2004. https://doi.org/10.1136/ bmj.328.7433.0-g.
- LaurenceTotelin W. foods become remedies in ancient Greece: the curious case of garlic and other substances. J Ethnopharmacol. 2015;167:30–7.
- Ahn SY, Ahn SW, Lee MH, Ha JY. Research on alimentotherapy definitions and applied theories. Korean J Oriental Med. 2008;14(2):27–33 (in Korean).
- Meng X, Yang JP. Research on the spread of the book Shiyi Xinjian in ancient and modern times. Zhonghua Yi Shi Za Zhi. 2020;50(6):369–72.
- Jinsheng Z, Kirk N, Buell PD. Dictionary of the Ben Cao Gang Mu. Persons and Literary Sources. volume 3. University of California Press. 2018;780
- Chinese English Pinyin Dictionary. Available from: https://chinese.yabla. com/chinese-english-pinyin-dictionary.php?define=药食同源
- Smith HA. Food health and nutrition in Chinese history. History Compass. 2022;20(1):e12704. https://doi.org/10.1111/hic3.12704.
- Morikawa T, Muraoka O, Yoshikawa M. Pharmaceutical food science: search for anti-obese constituents from medicinal foods. Yakugaku Zasshi. 2010;130(5):673–8 (in Japanese).
- 10. Houa Y, Jiang J-G. Origin and concept of medicine food homology and its application in modern functional foods. Food Funct. 2013;4:1727–41.
- National Institute of Korean History. Joseonwangjosillok(朝鮮王朝實錄 The Veritable Records of the JOSEON DYNASTY). Available from: https://sillok.history.go.kr/intro/english.do#
- National Institute of Korean History. Seungjeongwon Ilgi(承政院日記, The Daily Records of Royal Secretariat of Joseon Dynasty). Available from: https://siw.history.go.kr/intro/englnfo.do?type=01
- 13. Sang-woo A, Nam-il K, Jeong-eun Jo. Research and prospects of Euibangyoochui(醫方類聚) in East Asia. J Humanit. 2016;32:133–71 (in Korean).
- Bangudae Petroglyphs. Available from: http://www.bangudaelove.kr/ Lang/ENG.php
- 15. Ko BS, Park SM, Jung KJ. Korean Traditional Medicine and Nutrition. Korea Inst Orient Med Daejeon Korea. 2016;37–53. (in Korean)
- 16. Jeong Y-H. New interpretation of Hongikinkan(弘益人間) idea. J Gojoseon Dangun Stud. 2016;34(34):149–86 (**in Korean**).
- Koh KH. Food culture of Tomb of An-Ak No. 3 in Koguryo dynasty. J Korean Soc Food Cult. 2016;31(1):51–63 (in Korean).
- Shin S-S, Yang Y-J. Ancient medical personnels in the period of the Three Kingdoms. Hyungok J Kor Med. 1997;2:253–95 (in Korean).
- 19. Northeast asian history foundation, Nihon Shoki (日本書紀), Available from: http://contents.nahf.or.kr/item/item.do?itemId=ns

- 20. The Ministry of Culture, Sports and Tourism. Ilseongnok (日省錄). The collection of Kyujanggak. Available from: http://www.heritage.go.kr/heri/cul/culSelectDetail.do?ccbaCpno=1111101530000&pageNo=1_1_1_1
- 21. MediclassicsShowcase. Hyangyakjipseongbang(鄉藥集成方). Korea Institute of Oriental Medicine. Available from: https://mediclassics.kr/books/
- 22. An S, Gang Y, Kim J. Uibangryuchwi(醫方類聚) Sikchi(食治). Korea Institute of Oriental Medicine. Daejeon Korea. 2018. [in Korean]
- 23. Han G, Im W, Kwon C, et al. Uibangryuchwi(醫方類聚). MediclassicsS-howcase, Korea Institute of Oriental Medicine. Available from: https://mediclassics.kr/books/58
- 24. Jeon S(Author). Ku H(Korean Translator). Sikryochanyo 《食療纂要》. Mediclassics-Showcase, Korea Institute of Oriental Medicine. Available from: https://mediclassics.kr/books/38
- 25. Jun Heo. Donguibogam (東醫寶鑑). Mediclassics-Showcase, Korea Institute of Oriental Medicine. Available from: https://mediclassics.kr/books/8
- 26. Lee KL. The Publication of Hyangyakjipseongbang (鄉藥集成方) and the Chosŏnization of the Chinese medicine. Korean J Med Hist. 2100;20:225–262. (in Korean)
- Ahn S-W. A study on the medical reference books used in the medical compilations of the Joseon dynasty. Korean J Med Hist. 2020;33(2):105– 27 (in Korean).
- 28. Zǎn Y, Ahn SW, Oh J(Korean Translator). Shíyīxīnjiàn(食醫心鑑). Mediclassics-Showcase, Korea Institute of Oriental Medicine. Available from: https://mediclassics.kr/books/119
- Kim HK, Kim TW, Kim NI. Old people's health and food therapy in medical books of Chosun dynasty. Korean J Med Hist. 2020;25(1):61–9 (in Korean)
- 30. Editing by Huaiyin W, Ku J, Han M(Korean Translator).
 Tàipíngshènghuìfāng (太平聖惠方). Mediclassics-Showcase, Korea Institute of Oriental Medicine. Available from: https://mediclassics.kr/books/
- Kim YM, Yoon JB, Jeon BH. Research on the lineage and writing works of Jeon Sun Eui. J Physiol Pathol Korean Med. 2007;21(1):10–7 (in Korean).
- 32. Ku M, Kim N, Cha WS, Kim HK, Kim M. Study on the Yi'an (醫案) of Uirim-chalyo (醫林撮要). Korean J Med Hist. 2018;31(1):89–103 (**in Korean**).
- 33. Kim HK. The comparative study of 『Hyangyakjipseongbang』 and 『Euirimchyalyo』. Korean J Med Hist. 2001;14(2):3–24 (in Korean).
- Lee J. Study on the Yangno and Yakseongga of Jejung Sinpyeon. Korean J Med Hist. 2009;22(2):99–109 (in Korean).
- Lee J. A study on Sikchi in the Yangno of Jejung Sinpyeon. In Proceedings of the Korea contents association conference. 2008;113–114. (in Korean)
- 36. Encyclopedia of Korean Culture. The Academy of Korean Studies. Naeuiwon(内醫院). Available from: http://encykorea.aks.ac.kr/ Contents/Item/E0012549
- 37. Baidu. shí yī. Available from: https://baike.baidu.com/item/%E9%A3%9F% E5%8C%BB/4433390
- 38. Wei X. The study of Wei Liaoweng's Zhouli Zhezhong. J Xihua Univ (Philos Soc Sci). 2014;33(3):6–12 (in Chinese).
- The Chinese Text Project. Zhouli. Available from: https://ctext.org/ rites-of-zhou
- WIKIPEDIA. Rites of Zhou. Available from: https://thereaderwiki.com/en/ Rites_of_Zhou
- 41. Encyclopedia Britannica. Zhouli. Available from: https://www.britannica.com/topic/Zhouli
- ChinaKnowledge.de-An Encyclopaedia on Chinese History, Literature and Art. Zhouli. Available from: http://www.chinaknowledge.de/Literature/ Classics/zhouli.html
- KIOM herb'lib. Neijing. Available from: https://herba.kr/boncho/?m= view&t=dict&id=3125
- 44. The Chinese Text Project. wuchangzhengdalun(五常政大論). Available from: https://ctext.org/huangdi-neijing/wu-chang-zheng-da-lun? filter=537463
- 45. Sun Simiao. Beijiqianjinyaofang(備急千金要方). Chinese Text Project. Available from: https://ctext.org/ wiki.pl?if=en&res=444835
- 46. Qunli Wu, Liang X. Food therapy and medical diet therapy of Traditional Chinese Medicine. Clin Nutr Exp. 2018;18:1–5.
- Cullen C, Lo V. Medieval Chinese medicine: the Dunhuang medical manuscripts. New York: Routledge Taylor & Francis Group; 2004.
- 48. Lo V, Stanley-Baker M, Yang D. Routledge handbook of Chinese medicine. New York: Routledge, Taylor & Francis Group; 2022. p. 332.

- 49. Seon S. Dingren Zhang(Revised edition). Shiliaobencao(食料本草). Beijing science and Technology Press. 2019.
- Wang Huaiyin, Taipingshenghuifang, Chinese Text Project. Available from: https://ctext.org/wiki.pl?if=en&res=682523
- Chen Zhi, Yanglaofengqinshu, Chinese Text Project. Available from: https://ctext.org/wiki.pl?if=gb&res=998609
- 52. Hu Sihui, Yinshanzhengyao, Taipingshenghuifang, Chinese Text Project. Available from: https://ctext.org/wiki.pl?if=qb&res=343825
- 53. Wu rui, Riyongbencao. Available from: https://www.newton.com.tw/wiki
- 54. Lishizhen, Bencaogangmu, KIOM Mediclassics.kr. Available from: ttps://mediclassics.kr/books/190
- Yuan Mei, Suiyuanshidan. Taipingshenghuifang, Chinese Text Project. Available from: https://ctext.org/wiki.pl?if=qb&res=344157
- 56. Jia Ming, Yinshixuzhi, 2022 Master of Traditional Chinese Medicine(中醫 笈成) Available from: https://jicheng.tw/tcm/book/%E9%A3%B2%E9% A3%9F%E9%A0%88%E7%9F%A5/index.html
- Ministry of Culture, Sports and Tourism Republic of Korea. Seungjeongwon Ilgi in Memory of the World. Available from: http://www.heritage.go. kr/heri/html/HtmlPage.do?pg=/unesco/MemHeritage/Mem Heritage _04.jsp&pageNo=5_4_2_1
- 58. National Institute of Korean History. Seungjeongwon Ilgi. Available from: https://sjw.history.go.kr/main.do
- National Institute of Korean History. December 7, 23rd, Injo in Seungjeongwon Ilgi. Available from: https://sjw.history.go.kr/id/SJW-A23120070-00200
- 60. The Academy of Korean Studies. Digital Jangseogak. Yakbang Ilgi(藥方日記) Available from: https://jsg.aks.ac.kr/dir/view?catePath= &datald=JSG_K2-3613
- 61. National Institute of Korean History. May 25, Injo 24th in Seungjeongwon Ilqi. Available from: https://sjw.history.go.kr/id/SJW-A24050250-00200
- 62. Mediclassics-Showcase, Seogakjihwangtang (犀角地黄湯). Korea Institute of Oriental Medicine. Available from: https://mediclassics.kr/search/result?book_id=8&search=%EC%84%9C%EA%B0%81%EC%A7%80%ED%99%A9%ED%83%95
- National Institute of Korean History. On August 3, 27rd, Sukjong in Seungjeongwon Ilgi. Available from: https://sjw.history.go.kr/id/SJW-D27080030-00400
- 64. Mediclassics-Showcase. saengmaeksan(生脈散). Korea Institute of Oriental Medicine. Available from: https:// mediclassics.kr/search/result?book_id=8&search=%EC%83%9D%EB%A7%A5%EC%82%B0
- 65. Mediclassics-Showcase. chilmibaekchulsan (七味自朮散). Korea Institute of Oriental Medicine. Available from: https://mediclassics.kr/search/result?search=%E4%B8%83%E5%91%B3%E7%99%BD%E6%9C%AE%E6%95%A3
- National Institute of Korean History. December 7th of the 23rd of King Injo in Seungjeongwon Ilgi. Available from: https://sjw.history.go.kr/id/ SJW-A23120020-00200
- 67. Mediclassics-Showcase. Hwang Geum-tang(黄芩湯). Korea Institute of Oriental Medicine. Available from: https://mediclassics.kr/books/8/volume/6#content_333
- 68. Kim K. History of definitions of the Zheng (證) -a study based on 20th century Chinese literatures. J Korea Inst Orient Med Diagn. 2016;20(1):45–50 (in Korean).
- 69. Lee Kl.The Development of Medicine and the Publication of 『Hyang-yakjesaeng-jipseongbang(鄉藥濟生集成方)』 during the Early Days of Chosŏn(朝鮮). The Dong Bang Hak Chi. 2010;(149):327–371. **(in Korean)**
- 70. Encyclopedia of Korean Culture. The Academy of Korean Studies.
 Sangsig-guk(尚食局). Available from: http://encykorea.aks.ac.kr/Contents/Item/E0027183
- 71. Encyclopedia of Korean Culture. the Academy of Korean Studies. Saseon-seo(司膳署). Available from: http://encykorea.aks.ac.kr/ Contents/Item/F0025715
- 72. Hwang Sl. Study of treatise on medicine by King Sejo. Korean J Med Hist. 2003;12:97–109 (**in Korean**).
- 73. Kim J. A study on the publication of medical books and the medical library of Naeuiwon(内醫院) in the Joseon dynasty. J Stud Bibliogr. 2009;42:345–80 (**in Korean**).
- 74. Encyclopedia of Korean Culture. The Academy of Korean Studies.
 Ilwolobongdo(日月五峯圖). Available from: http://encykorea.aks.ac.kr/contents/Item/E0047296

Ko Journal of Ethnic Foods (2023) 10:8 Page 15 of 15

- Lim H, Cha WS. Review of application of medicinal porridges by kinginjo of the joseon dynasty-based on the records from the daily records of the royal secretariat of Joseon dynasty. J Korean Soc Food Cult. 2013;28(5):438–49 (in Korean).
- 76. Mediclassics-Showcase, Heobeon (虚煩). Korea Institute of Oriental Medicine. Available from: https://mediclassics.kr/search/result?book_id= 8&search=%E8%99%9B%E7%85%A9
- 77. Jeong YH, Kim DR, Lim H, Cha WS. Review of the origin and meaning of ginseng millet water gruel (Insamsokmieum, 人蔘栗米飲) used for the royal family during the Joseon dynasty. J Korean Soc Food Cult. 2015;30(4):395–405 (**in Korean**).
- 78. Bao-mei N. A study on Choseong's assignment and assignment's order of I-Ching in Hun-minjeongeum. Hangeul. 2016;312:67–95 (in Korean).
- 79. Hong J. A study on the food cure in Eumsunjungyo Singnyojaebyeong. J Korean Med Class. 2015;28(4):155–77 (**in Korean**).
- 80. Jeon K-T. The study of literature review for oriental medical nutrition. J Oriental Rehab Med. 2002;12(1):187–96 (in Korean).

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Ready to submit your research? Choose BMC and benefit from:

- fast, convenient online submission
- $\bullet\,$ thorough peer review by experienced researchers in your field
- rapid publication on acceptance
- support for research data, including large and complex data types
- gold Open Access which fosters wider collaboration and increased citations
- maximum visibility for your research: over 100M website views per year

At BMC, research is always in progress.

Learn more biomedcentral.com/submissions

