

Use of Herbs and Traditional Medicine Among Asian Youths in the Digital Age: Cosmetics, Beauty and Anti-Aging

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Abstract

The new age of digital medicine has revolutionized treatments for health and beauty, including cosmetics and anti-aging. Various technological solutions and digital tools are now readily available and easily accessible to help people maintain not only their health, but also improve their physical appearance. At the same time, there is also a strong “back to nature” and “sustainability” wave that avoids chemicals and scientific processing. This research explores the use of herbs and traditional medicine among Asian youths of the digital age, because this is the age group that is most conscious about their physical appearance, and are educated through social media to be more concerned about environmental pollution’s effect on health and aging. Therefore, open-ended questions were asked through social media to youths in Thailand, Taiwan and India aged between 18-22 to find out their use of herbs and traditional medicine for health, beauty and anti-aging purposes.

It was found that the majority of our Taiwanese and Thai youth informants found environmentally friendly ways of staying young and healthy through their use of herbal plants, some of which also can slow down the normal ageing process. Similarly, Indian medicinal systems such as Ayurveda, Siddha, and Unani have a long history; and more and more Indian youths are following environment friendly traditional Indian medicine-based products for vitality, beauty, cosmetics, and anti-aging. We also found that both LGBT lifestyles, plastic surgery and the magic of digital solutions had an extremely positive influence on beauty ideals in Taiwan, where the cosmetic industry is booming; meanwhile in Thailand, creative campaigns promote herbs used in Thai cooking for their medicinal properties in boosting immunity against COVID-19.

Keywords: herb, traditional medicine, cosmetics, beauty, anti-aging, digital age, Asian youths, Thailand, India, Taiwan

Introduction

This research explores the use of herbs and traditional medicine among Asian youths of the digital age. In particular, focus is given to herbs in China, India and Thailand because China and India both have a long history of traditional medicine and continuous use and development to the present day. Hence, Chinese and Indian cultures can be considered the world’s origin and roots of herbal treatments and remedies for the Asian region. Thailand has been strongly influenced by both Chinese and Indian cultures through trade, migration and religious influences (e.g. Confucianism, Taoism, Buddhism and Hinduism). It is also interesting to find out how Thailand evolved on its own in this field as well, as Thailand is increasingly known for medical tourism, as well as a world renown destination for spirituality, wellbeing and beauty, not only for Thai traditional massage and spa treatments, but also for cosmetics, and even cosmetic surgery and sex change operations.

Youths of the digital age are the focus of this study as this is the age group that is most conscious about their physical appearance, and at the same time are educated through social media to be more concerned about environmental pollution’s effect on health and aging. While they find beauty to be easily attainable through cosmetic surgery, they also have readily available access to both chemical and natural options in their choice of cosmetic products and beauty treatments. At the same time, amidst these high tech treatments, there is also a strong “back to nature” and “sustainability” wave that avoids chemicals and scientific processing.

Inevitably, with better health, people live longer. Therefore, the anti-aging properties are also the additional benefits from herbs, not just only beauty and health benefits. With the aging society in several countries including Thailand, being beautiful through herbal cosmetics and skin care application, and herb consumption can also mean living longer and still remain beautiful or even looking younger (reverse aging).

This research collected data on the usage of herbs among youths in Taiwan, India and Thailand to find out which herbs are commonly used by the digital age population for purposes of enhancing beauty and anti-aging.

Literature Review

In the evolution of beauty and health throughout human civilization, the use of cosmetics and skin care had the aim of protecting oneself from the environment. For example, according to INB Medical (2019), ancient Egypt, ancient Greek and Medieval times, commonly found food, fruits, vegetables and herbs were used to protect their skin from the elements, such as milk, honey, olive oil, animal fat, vinegar, berries, cucumber, oatmeal, sesame, aloe vera, rosemary, etc. The goal was not only to clean and moisturize the skin, but also to protect from damage from the sun and dry weather condition.

In addition, even during ancient times, certain foods when applied to the skin, was believed to help slow down aging as well, such as Greek yoghurt (INB Medical, 2019). In 1780’s and 1800, chemical non-food skin care and cosmetics were then developed with brands of their own that are still widely used today, such as baby powder, Vaseline etc. Common iconic brands that we know of today such as Pond’s, Clearasil, Estée Lauder were developed in the 1900s (INB Medical, 2019; Life Pharmacy, 2021).

However, as technological, biochemical developments in cosmetics and anti-aging skin care progressed, skin care products also turned to various chemical formulas for anti-aging creams and serums (e.g. La Sala, 2021; Sephora.com), digital innovation of facial hypnosis treatments (Pierre-Fabre.com), along with more intrusive treatments such as fillers and Botox injections were introduced (Life Pharmacy, 2021), which unfortunately sometimes produced unexpected results and side effects, if not carefully administered properly. Moreover, the new age of digital medicine has also revolutionized treatments for health and beauty, including cosmetics and anti-aging. Various technological solutions and digital tools are now readily available and easily accessible to help people maintain and improve their complexion, such as nanotechnology in skincare (e.g. Salbioni et al., 2021), facial re-contouring (e.g. Mu, 2010) for example. Also, medical innovations today are so highly advanced that it is even now possible for people to change people’s body shapes, whereby drastic procedures are now accepted as necessary in some societies, even for high risk procedures with daunting names like megaliposuction, fat hypertrophy, full body surgery, body reshaping, etc.(e.g. Perén, Gómez and Guerrero-Santos, 1999; Lambros, 2020; Saha et al., 2021; Mala, 2022).

At the same time, amidst these high tech treatments, there is also a strong “back to nature” and “sustainability” wave that avoids chemicals and scientific processing. In particular, with consumers’ concerns over chemicals and the associated allergies and undesirable side effects that could happen in the longer term future, there are those who now prefer to play safe and resort to using food, fruits and vegetables for their beauty and anti-aging needs. This is well founded, as

studies show that there is anti-aging potential from food-derived bioactive compounds, which technological advancements also makes it possible to produce effective nutricosmetic and cosmeceutical products from natural and common foods that we eat in our normal everyday lives (Hernandez et al.; 2021).

Therefore, the following subsections present reviews of Thai, Indian and Chinese herbs:

Thai Herbs for Beauty, Cosmetics, Health, Anti-Aging and COVID-19

In Thailand, herbal cosmetics products are widely available in various forms for the consumers to choose from, ranging from moisturizer, whitening lotions, creams, powder, toner, make up cleansing, mask, cleansing oil, soap bar, anti-aging lotions and creams (Thanisorn & Chanchai, 2012), and at present there is high market potential for local herbal cosmetics, beauty and anti-aging products (Harnvanich et al., 2020).

A well known example of a Thai herb that is widely used to produce skin care products is the traditional folk medicinal root with the scientific name *Pueraria mirifica* (Thai common name กวาวเครือขาว or White Kwao Krua) cultivated in the Northern region of Thailand (e.g. Chansakaow et al., 2000; Cherdshewasart & Sutjit, 2008). *Pueraria mirifica* has been extensively researched in the laboratory for the benefits from its rich phytoestrogen content, which has been used to develop cosmetics to enhance skin conditions (e.g. Kim et al., 2004; Trisomboon et al., 2006).

Earlier on in 2018 before COVID-19, at the 15th National Herb Expo of Thailand held on 18-21 July 2018 at IMPACT Muang Thong Thani (Thailand Today, 2018), the Director of the Institute of Thai Traditional Medicine, Department for Development of Thai Traditional and Alternative Medicine gave an interview in Thailand Today television program. Back then, four Thai herbs were selected under the national master plan, namely Curcumin (ขมิ้นชัน) for aging symptoms and anti-cancer, Black Galingale (กระชายดำ), *Centella Asiatica* (บัวบก), and *Zingiber montanum* (ไพล) which is used in Thai massage shops. These four so-called “product champion herbs” were strategically promoted to the general Thai population to be used as home-based remedies, and highlighted specific herbal preparations or formulas from these herbs. These four herbs have been studied extensively by scientists for their anti-aging properties and use in cosmetics to enhance beauty (e.g. Sivamaruthi et al., 2018; Rafiee et al., 2019; Puangpradab et al., 2020; Astuti et al., 2021; Scamoroscenco et al., 2021)

And now, ever since the COVID-19 pandemic has hit, two more Thai herbs have come to the forefront as having beneficial properties. Firstly, Galingale (กระชายขาว, also known as Kaempfer, Finger root, Chinese keys, Chinese ginger) which is a preventative herb to boost immunity against contacting COVID-19, and secondly is Kariyat (ฟ้าทะลายโจร, *Andrographis paniculata*) which is believed to help patients who contracted COVID-19 (Kittapoop, 2022). While these two herbs are not directly used in cosmetics for beauty or anti-aging purposes, they both have properties in promoting health, and hence have impact on overall wellbeing, good looking appearance, and longevity.

With the pandemic, Galingale (กระชายขาว) was also used in drinks and dishes, so that the average Thai person can conveniently consume the herb in everyday life. Additionally, other herbs that are commonly used in Thai dishes such as Tom Yum soup, curries, salads, were also studied for their properties in boosting immunity against COVID-19 (Bangkok Business News, 2020). Naturally, other countries with herbal traditional medicine cultures also began to explore other candidate plants with medicinal properties to enhance immunity against Coronavirus, e.g. China (Ahmad et al., 2022) and India (Sharma et al., 2022).

Similarly, there are also new opportunities in the future to study the benefits of Cannabis which has just been legalized in Thailand for medicinal purposes (Assanangkornchai et al., 2022) There are already studies in other countries on cannabidiol CBD in cosmetic products thanks to its sebostatic and antioxidant activities as a new anti-aging ally (Schettino et al., 2021; Michailidis et

al., 2021), CBD oil shampoo (Landman, 2018), and for anti-aging through full spectrum CBD’s highly restorative, texture-refining properties (Cream, 2020). Even hemp seed oil (Cannabis Sativa) is also studied on its application as a non-drug dermo-cosmetic agents mainly for skin care (Baral et al., 2020).

Indian Herbs for Beauty, Cosmetics, Health and Anti-Aging

Indian Ayurvedic, Siddha, and Unani medicine systems have herbal cosmetic solutions (Lal, 2002). Ayurveda and Siddha and Unani are alternative medicine systems with historical roots in India. Ayurveda word originates from Sanskrit which means The Science of Life and stems from the ancient Vedic culture. It encourages certain lifestyle interventions and natural herbal therapies. Siddha system is like Ayurveda written in Tamil - a south Indian language practiced in Tamil language-speaking parts of India. In addition to disease, it focuses on the patient’s age, habits, and uses natural herbs for treatments. Unani system of medicine originated from Greece enriched by Arabs, was brought to India during the medieval period. However, the Unani system uses ingredients of animal and marine origin, in addition to natural herbs.

Herbal cosmetics are currently driving growth as more people prefer organic products over chemical ones. Because they want products designed specifically for Asian skin, Indian consumers are drawn to Ayurvedic products. For more than two millennia, Ayurvedic cosmetics have changed and evolved. In 2022, revenue in the Herbal Cosmetics segment in India is expected to be the US \$853.9 million. The market is expected to grow at 2.90 percent annually from 2022–to 2026 (Statistica, 2022)

From findings of a study by Patkar, & Bole (1997) on herbal cosmetics in ancient India, Ayurvedic anti-aging herbal products are excellent for revitalizing the skin, defying aging, and maintaining youthfulness, Herbs deliver moisture and hydration while also repairing deeper layers of skin. These herbs add shine and luster to the skin by stimulating its natural metabolism. Indian herbal products are well-known for their ability to boost strength, vitality, and immunity. Chavyanprash – a superfood for all ages – is used by Indians of all ages, not just the young. Young Indian women use the Indian herb Henna as a super hair care solution. Shampoos and other modern hair care products contain chemicals that cause hair loss and premature greying in many people. Natural herbal henna is now a well-known hair treatment all over the world.

According to a report by on Beauty and Wellness Industry in India (Deshpande, 2021), young Indians of the digital age today are concerned about wrinkles and overall well-being. However, experts are concerned about the overuse of chemical cosmetics and more invasive treatments. Today’s younger beauty consumers are better informed scientifically about skincare, while others express apprehension about premature aging and wrinkles. Herbal cosmetics are not a fad or trend, and they are going to stay. People are becoming more aware of the long-term consequences of putting harmful chemicals on their bodies and looking for alternatives. Makeup can also boost a person's appearance and demonstrate a sense of self-care. The emphasis on visual content has shaped how Generation Z youth perceive themselves. Digitally -the savvy youth wish to project a youthful image while sharing photos on Instagram, Facebook, and other social media platforms. They believe that beauty and youth are intimately connected. Herbal cosmetics have enabled Indian women and youth to define their identities outside of traditional contexts, demonstrating confidence and empowerment. The expansion of the digital and manufacturing sectors has resulted in a significant increase in demand for cosmetic herbal products in India.

Chinese Herbs for Beauty, Cosmetics, Health and Anti-Aging

Traditional Chinese medicine is built on the idea that beauty comes from within. Nature provides a whole pharmacy of herbs and revitalises life energy (qi). For example dermatology is a recognised specialty in traditional Chinese medicine. Treatment for skin disorders (acne, rosacea, dermatitis, psoriasis, eczema, alopecia, dry skin, and hives) have been described as early as 1100–

221 PCT in China. Traditional herbs strengthen the immune system, balance the internal organ systems, release toxins from the skin, and stabilise the yin and yang system. One of the authors has been using herbs for a decade with visible rejuvenating effects. The application of sesame seeds to moisten dry skin on a daily basis had a lot to do with it. Indeed, sesame lubricates dryness, working as an emollient when applied to dry and cracked skin; it also relieves constipation. Sesame oil also detoxifies. It destroys ringworm, scabies, and most fungal skin diseases. It is a superior massage oil for sore muscles and the pain of rheumatism/arthritis (Blakeway, cited in Jhin 2011 : 86)

So many herbs promote beautiful skin, from sophora to gypsum, mother-of-pearl shell, rehmannia root, honeysuckle flower and others. Chinese medicine relies on eight branches: acupuncture, nutrition, herbs, body treatments, moxibustion and cupping, exercise, spiritual activity and lifestyle. The various effects of plants and minerals have been documented on the human body. Chinese medicine uses about 400 different herbs (Rekanaty 2019).

Ageing is a natural process for all living organisms. In China, people usually say that “if there is a sunrise, there must be a sunset”. You cannot cheat nature. The Chinese as most other cultures have long searched an elixir for eternal youth, and while people live longer with modern procedures, nature wins in the end. You just cannot beat it, it is far too strong. We all get old, despite scientific advances, surgery, pills, or gene altering techniques. This thought is so depressing that it motivated us to write this paper and dig deeper into recorded hopes of a longer and fuller life, even if it cannot last forever. We only want to stay young: is it too much asking? Anyway, every living organism on Earth has a given lifespan. The maximum human lifespan is around 125 years. Traditional Chinese medicine called the lifespan *tian nian*, the Heaven age. Most of us will not reach it. Traditional Chinese medicine teaches that an anti-aging process should focus on the detection, prevention, and treatment of ageing-related diseases. Spirituality also plays an important role in longevity and well-being. It is not just about the body. We should use our brain to think, daydream, and create beautiful art (Hu 2015: 40).

Now let us take a specific example. *Schisandra chinensis* is a plant with high potential for beneficial health effects, because it protects human fibroblasts (cells that produce skin tissue) from UV radiation. Other compounds in this plant demonstrate anti-aging effects. Celebrities such as Gwyneth Paltrow praise it as a nothing less than a “beautifying stamina booster” (Active Herb 2022). It tonifies qi as well as the kidneys. Indeed the production of qi, blood and other fluids tend to decline with age. This means from a Western perspective that the sebaceous oil glands are affected, in turn producing dry, aged-looking skin. Now the spleen is the primary organ for transforming nutrients from food into qi. When people have deficient qi, there isn’t enough blood to nourish their skin tissue. Blood stagnation and internal phlegm accumulate, and they get visibly old (ibid).

We could take hundreds of other examples. The point is that the past yields even more solutions than the present. After all, as Xue (2021) points out, a Chinese empress may have had beautiful skin thousands of years before serums and foaming cleansers were invented. We want to urge our readers, therefore, to purchase these herbs. A quick trip to the Chinese pharmacy or a herbal clinic will make the three most often used herbs (*bei qi*, *huang qi* and *goji*) available at a decent price. If you are still hesitant, ask yourself - how much would you price your own life? Aren’t health and beauty worth a little investment from time to time? You get the idea. Xue (2021) also reminds us of the necessity of learning which herbs are best for you, drinking the right tea, trying a jade roller, understanding the power of mung beans and finally “DIY a turmeric mask”. Other common ingredients include ginseng, Solomon's seal rhizome, wolfberry fruit, ginkgo leaves, dates, raspberries, Siberian ginseng and pollen. All that stuff helps to maintain a spotless skin. But again, if you are thinking of long-term consumption, better consult a physician for a customised prescription. Herbs will help the body repair itself; in other words, they will assist the body to function as if we were younger. Common foods recorded in ancient books for "beauty", "anti-aging" and "rejuvenation" purpose are sesame, honey, mushrooms, dairy products, pumpkin seeds,

lotus root, watermelon, cherries, wheat and radish. So if you get hold on them in your local grocery store or supermarket, don't hesitate to go for them. You can't be wrong there. And if you want to keep your skin healthy you can add white fungus, lily buds, red dates, bird's nests, sea cucumbers, oysters, soft-shelled turtle, eels, pig skin and animal bone marrow on your list. These ingredients nourish yin and promote blood production (Shen Nong 2022).

Finally, traditional Chinese medicine in cosmetics is based on the yin-yang principle of balance. These two opposite and interdependent aspects maintain a dynamic relationship. Once the balance is destroyed under certain conditions, the human body turns toward a pathological state, including beauty-damaging diseases. Traditional Chinese medicine treats these diseases using both internal and external therapies. Take the example of a dull complexion. Treatment regimens include the external application of Yun-Mu Cream, which improves blood circulation and defecation, but also rest, a rational diet and harmonised mental states. All of these factors influence skin appearance. So Eastern cosmetics have different connotations from their Western counterpart. They are rooted in thousands of years of Chinese pharmacological theories. Their guiding principle is the care of the qi, not a focus on make-up or superficial decoration. If you want to retain youthful looks, try your best to stay in harmony with nature and please, please don't move away from Tao (Li 2013).

Methodology

In order to collect data on herb usage for beauty and anti-aging, as well as herbs in cosmetics, open-ended questions were asked through social media and interview (as appropriate) to Thai, Indian and Taiwanese youths aged between 18-22 find out their use of herbs and traditional medicine for health, beauty and anti-aging purposes. Given the pandemic that is still ongoing at the time of the research, there is also a question to help stimulate respondents' awareness on the potential of herbs to increase immunity against COVID-19.

Basically, the researchers were searching for the respondents' actual use of herbs, at the same time also hoped to find out if they know of other countries' herbs. The respective Thai, Indian and Taiwan researchers were freely able to make judgments on the mode of social media, collecting data in the style that they considered most suitable in finding answers to these questions (approximately) as follows:

Please help share what you know about Indian, Thai and Chinese herbs! Please share with your friends and family, especially youths! We also want to know if the digital age new generation of people still believe in traditional natural herbs.

- Question 1: Do you know any herbs that are used for health and beauty care? (Can you share the names of the herbs and how you use them, e.g. eat/apply etc.) We would like to know your awareness of Indian herbs, Thai herbs, Chinese herbs, and herbs of other countries. [Answer as far as you know]
- Question 2: Personally, what herbs do you use for 1) taking care of your beauty / handsomeness 2) enhancing health 3) anti-aging 4) using it as a cosmetic 5) Can you give examples, tell me how to use it and the product/brand (if you have)? (We would like to know which herbs/brands are well recognized.) [You might not be able to answer every question, it's OK]
- Question 3: Do you know of any herbs that can help increase immunity and/or resist COVID-19, and what are the food dishes that contain these herbs? (We want to know more about your national food that can help fight Coronavirus.

Through a casual friendly manner, the researchers encouraged the respondents to open up and share their knowledge and usage of herbs for cosmetics, beauty and anti-aging, which for some might be a sensitive personal topic. It is also an opportunity for the researchers from 3 countries

with different cultures (French researcher in Taiwan, Indian researcher, Thai researcher) to learn more about popular herbal cosmetics brands in each country, to develop further into future research.

Findings and Analysis

It was found that the majority of our Taiwanese and Thai youth informants found environmentally friendly ways of staying young and healthy through their use of herbal plants, some of which also can slow down the normal ageing process. Similarly, Indian medicinal systems such as Ayurveda, Siddha, and Unani have a long history; and more and more Indian youths are following environment friendly traditional Indian medicine-based products for vitality, beauty, cosmetics, and anti-aging. We also found that both LGBT lifestyles, plastic surgery and the magic of digital solutions had an extremely positive influence on beauty ideals in Taiwan, where the cosmetic industry is booming; meanwhile in Thailand, creative campaigns promote herbs used in Thai cooking for their medicinal properties in boosting immunity against COVID-19.

Findings and Analysis from Thailand

The Thai respondents came from the highest number of respondents in this study, a total of 50 university students. The findings can be divided into 4 categories – Thai herbs, foreign herbs, herbs for combatting Coronavirus, and herbal brands.

For Thai herbs, the data collected included common vegetables as well as herbs. They are (in alphabetical order) Acacia concinna leaves (ส้มป่อย), aloe vera, amla (มะขามป้อม), basil (โหระพา), red basil (โหระพาแดง), holy basil (กะเพรา), black galingale or Kaempferia parviflora (KP) (กระชายดำ), cannabis, cassia (ขี้เหล็ก), Centella Asiatica (บัวบก), chilli peppers, coconut oil, cucumber, galangal, garlic, ginger, lemongrass, liquorice (ชะเอม), mint, lemon balm mint, Mitragyna speciosa (กระท่อม), sesame seeds, tamarind, tomatoes, and turmeric.

Not surprising given Thai cultural linkage throughout history with India and China, the Thai youth respondents were familiar with Chinese herbs, namely Chinese Angelica or Dong quai (ตังกุย), Chinese chrysanthemum tea, Chinese Fleeceflower Root (หอสัวโอว), Chinese ginkgo, Chinese goji berry, and Chinese Lucidganoderma. For Indian herbs, the respondents specifically mentioned Indian cloves, Indian gooseberry, Indian Henna, and Indian turmeric. The respondents also mentioned other foreign herbs such as the neighboring ASEAN country's national herb such as Myanmar tanaka, Vietnamese turmeric, as well as the famous Korean ginseng, Italian oregano, and USA cranberries. One respondent mentioned Madagascar centella (บัวบก) herb.

Not surprisingly, the herbs for combatting Coronavirus were overwhelmingly the nationally promoted galingale (กระชายขาว) and Kariyat (ฟ้าทะลายโจร). But interestingly, other common herbs that were mentioned for combatting were amla (มะขามป้อม), bael (มะตูม), lemongrass, turmeric, ginger, and one respondent offered an interesting herb, Houttuynia cordata Thunb. (พลูคาว ผักก้านตอง).

The brands of herb products that were mentioned are not just Thai brands, but also international brands. The Thai brands were Bennett (a Thai soap brand), Kongka Herb (สมุนไพรคงคา shampoo), Palmmade (skin care and oral care), Supaporn powdered tumeric (ขมิ้นสุภาภรณ์). International brands were Carmex, Kiehl's, Nature Republic, Protex, Smooth E, Snail bright and Tropicana brand coconut oil. Several brands that youth respondents mentioned were all South Korean brands, namely CICA (a range of Centella Asiatica skin care products), Hanasol (aloe vera gel), JOJU and NAMI and SKIN1004; which is not surprising considering the success of K-Beauty, as South Korea's exports of cosmetic products continue to soar globally.

Apparently, Thai youths care a lot about their appearance and sought Thai herbs and foreign herbs in their natural form, both to eat and to prepare for use on their skin. Thai brands as well as imported brands were also familiar to Thai youths of the digital age. This could be because Thai culture is open to foreign influences and the Thai market is open to imports from overseas.

Findings and Analysis from India

The India survey form was responded to by 12 Indians. It was found that the most mentioned, and hence likely to be best known and most often used, were aloe vera and turmeric (haldi); followed by amla and neem; and the third most mentioned were aswaganga, coriander seeds, giloy, mint, parsley and Chyawanprash (mixed herb). Others that were mentioned one time each were ajwain, asofeditia, avocado, beet root, brahmi, cardamom, cilantro, cloves, cumin seeds, fennel seeds, fenugreek seeds, flaxseeds, gram flour, henna, lotus seeds, sandal wood (for acne), thyme and tulsi. Interestingly, marijuana and opium were also mentioned for medical use.

For combatting Coronavirus, finding suggest that it is not necessary to use unusal and rare herbs, as it is believed that commonly found herbs that are eaten in normal daily foods also helps fight against COVID-19, namely adrak, amla (Indian gooseberry), basil, cinnamon, coriander, giloy, methi, neem, turmeric, and vati. Ganja or cannabis was also suggested that it might help to mitigate COVID-19

From the findings above, as most of respondents were using these herbal medicines and treatments, the Indian researcher of this research summarized the beauty boosting and anti-aging properties of selected Indian herbs below:

- **Turmeric or Haldi**: This ingredient is undoubtedly indispensable in Indian culture for beauty and skin treatments. It is widely used for brides and grooms in Indian weddings to lighten and revitalize the skin for centuries. It can reduce pimples, stretch marks, reduce wrinkles (anti-aging), and treat cracked heels. Hot milk with turmeric powder soothes the throat and prevents cough.
- **Amla or Indian Gooseberry**: It is widely used for hair treatment and nourishing hair.
- **Neem**: Neem is a popular wonder herb, and every part of its plant is very useful. It is used for the skin treatment for acne which is common in Indian youth. Its treatment prevents dry skin. It is also used for controlling dandruff.
- **Aswagandha**: It can be called Indian ginseng for its usage by young for energy, vitality, and immunity. Aswagandha supplements benefit male fertility and increase testosterone levels. It also treats to reduce stress and mental health issues that affect the overall well-being of youth.
- **Chyawanprash**: Chyawanprash herbal formulations improve vigor, vitality, and delay the aging process due to their antioxidant properties. It also helps to remove toxins from the body and heart health by lowering cholesterol levels of youth increased by modern fast foods.
- **Sandalwood**: Sandalwood possesses antiseptic properties and even helps in blood circulation under the skin. It is used for clear and glowing skin by youth widely and Indian film actresses as well.
- **Henna**: Also known as mehndi, henna is used for hair treatment in place of shampoos. It makes hair healthy and silky. It prevents premature hair fall also. Its antifungal and antimicrobial properties are beneficial for the hair and scalp, premature graying, and for reducing dandruff. Henna can cover gray hair and leave an auburn or reddish-orange tint on the strands.
- **Brahmi**: Brahmi or Bacopa monnieri is used by young people for boosting memory, immunity, and reducing anxiety. Very popular among students during examination period.
- **Giloy**: Giloy or Tinospora Cordifolia improves immunity and is used as an antiaging agent. It is full of antioxidants and helps to release toxins from the body. Giloy juice also detoxifies the skin. It is also used for liver diseases, urinary tract infections, and hard-related issues.

Indian brands of skincare that the respondents gave were: Himalaya, Patanjali, Vicco and Youngliving. These brands are very well known and readily available throughout the Indian

continent, and the brand Himalaya is now also available in Thailand at select convenience stores and pharmacies.

Findings and Analysis from Taiwan

For those familiar with the LGBT Indian, scene, ‘queer’ disposition is not a modern-age concept. Ancient mythologies display queer characters Shikhandi and Hindu deity Ardhanarishwar or the androgynous god – images now being realised by designers as a source of inspiration. In India, the Lakme Fashion Week illuminated by celebrities like Prateik Babbar and Ranveer Singh reshaping the gender-based clothing norms by walking the runway in men’s skirts. As most fashion influencers comments, “it was so hot”. This is not surprising, as fashion experts recall that LGBT trends constitute “a silent but powerful kind of revolution, with new concepts breaking the conventional gender-based norms” (Apparel Resources 2021).

By the same token, in Taiwan, the most powerful ideas about beauty and diet were found among LGBT students. We interviewed 78 students in three universities in Southern Taiwan (at Wenzao University, National Sun Yat-sen University and National Kaohsiung University of Hospitality and Tourism). Among those, 34 were LGBT students who looked healthier and significantly younger than their straight counterparts. Pressed to find reasons why, they told us that straight people had poor health management and limited taste in cosmetics. They also underuse dietary supplements and Chinese herbs. As Bobby (Wenzao University) clarifies,

“it’s just so visible they don’t really care about their physical appearance. They assume it’s clear the other gender will have an interest in them. When we LGBT members must fight to be recognised, and that means we work harder on our looks. I mean, when I look at this guy over there [pointing], it’s clear he’s just bought his jeans from Zara and doesn’t clean his shoes. I bet he’s even bought these ugly trousers on the promotion rack [snarling], and don’t get me started on his face. He’s just not applying any cream anywhere and he needs it!”

Jenny (National Sun Yat-sen University) concurs when she says that

“straight people usually don’t believe in traditional medicine. When my father explained how I could manage my yin and yang to look younger, I saw the point straight away. Look, it’s this simple equation, right? Younger = more attractive = more popularity = more potential girlfriends. Yes, I’ve studied accounting but I don’t need it to find that out, okay? It’s kinda like common sense. But you see [winking], lesbians love smart girls, whereas so many straight girls just wanna be passive little dolls... they wait to be adopted and dominated by powerful males. I’ll never forget how the “Me Too” movement in Taiwan helped me realise that most men were dormant predators or, worse, rapists to be. It’s way safer to be a lesbian in this day and age, like, I also get a stronger sense of solidarity from fellow LGBT people.”

Steven and Fiona, both from National Kaohsiung University of Hospitality and Tourism, use a combination of exercise, plastic surgery and Instagram filters to rejuvenate their image. At 22 years old they have both undergone minor operations to get firmer, rounder, bigger breasts (Fiona) and a smaller nose and bigger eyes (Steven) for a decent price. As Steven reports,

“plastic surgery has been on the rise in Taiwan. There are many reasons behind this popularity: first, I’d say, it’s become much more affordable. You see, I spent only 32000NT for my nose job and I heard it was at least twice this price 15 years ago, for a more dubious result. How do you like my nose? [laughing] I know, my friends and family just luv it. The surgeon is a star, my auntie got her new face from him and I was dying to see what he could do with my skin. The day after, I went to get this tattoo [he

shows a muscled torso, with a tiger on it]. *Yes, I know, it's the year of the tiger, but that wasn't the reason I did it [laughs]!*”

Fiona explains the benefits of becoming an influencer on the right channels:

This was me 4 years ago [shows a photograph on her mobile phone]. Yes, I know, I looked terrrrrrible! And look at me now. I can't believe it myself. Do I need to tell you how much I paid for my boob job? No, okay, better that way [laughs]... I mean, I don't regret it at all. And let me tell you why. I'm an influencer on Instagram, I sing and play the piano, and I have around 850 followers now and growing. I need to look good. First you need a good basis, a body that's watchable; then you add filters. You can choose among so many, and even when you don't have time to apply makeup a nice filter can do the trick, you know? So, don't underestimate the power of technology.

About 12 interviewees from these three universities mentioned traditional Chinese medicine without being prompted. When prompted, it became clear that LGBT students knew much more about the range of products and ways of applying or consuming them than straight students. We believe that this is because of a stronger focus on bodily and spiritual cultivation. As Steffy (National Sun Yat-sen University) confesses,

“My family didn't talk about herbs. I just found out that if I wanted to stay young and pretty, I'd have to care about my body. And what's better than the old-fashioned, natural stuff uh? So I went to fish for information on the internet. My uncle was like, “what's up, what are you doing browsing those strange pages?” And I said “if you checked that kind of information before, you wouldn't look so old now!” [giggles]

So we conclude that traditional medicine and the cosmetic industry in Taiwan will keep growing to satisfy a dynamic and demanding youth.

Conclusion, Policy Implications and Recommendations

The findings obtained from digital age youths in Thailand, India and Taiwan offers different perspectives of how digital age youths respond to questions about herbs, what they know about herbal properties on beauty, cosmetics and anti-aging. To some, this topic might be considered sensitive, private and personal. Nevertheless, the variety of responses from all three countries converge, and it can be concluded that digital age youths have considerable knowledge about herbs, despite the technological advancements in chemicals and surgical treatments for improving one's physical appearance.

Thai youths were not only familiar with Thai herbs, but also familiar with Chinese and Indian herbs, as well as herbs from other countries. However, this set of respondents did not mention specific Indian and Chinese brands, even though they have access to the Chinese and Indian herbs for the actual herbal content, rather than for the brands. A few Thai brands were mentioned, as well as international American brands. Instead, the Thai respondents mentioned mostly Korean brands that are being sold at convenience stores and pharmacies (e.g. 7-11, Watson's, Boots), which is evidently showing the successful efforts of K-Beauty campaign to Thailand.

It can be concluded from the Indian research findings that Indian herb-based cosmetics are widely used by Indian youths as well as Indian-origin youths. Although India is well known for world class IT talent, Indian youths of the digital age are fully aware of and trust the benefits of herbs used in Ayurvedic and other Indian medicine systems for skincare, haircare, health, vitality, immunity, etc. Long-term use of using chemical-based skincare and haircare products can result in early wrinkles, graying of hair, and hair fall. More and more Indian youths are using energy booster herbal supplements for vitality and immunity. Awareness about herbal treatments can be attributed partly to family traditions.

The Indian researcher added that perhaps an explanation for why Thai respondents know about Indian herbs could be due to the fact that herbal beauty and cosmetic products in general are available easily in Thailand at economical costs, adding to the fact that herbs are considered to be non-toxic, in comparison to chemical cosmetics and skincare products. The Indian researcher also recommends that Thai youth is educated about the advantages of herbal products in collaboration with Indian Ayurvedic institutions. Due to similar philosophies in Indian and Buddhist culture, there would be more synergy to promote herbal solutions in Thailand and other Asian countries.

With the Taiwan findings which comprised qualitative in-depth interview data from LGBT respondents, who are in general known for their emphasis on physical appearance. Thus the data from the Taiwan research greatly helped to enrich the herbal information that were obtained by the Thai and Indian research, making the research well rounded and more complete, having a human side of emotion in relation to beauty and anti-aging concerns, rather than having just herb knowledge and herb usage information. Thai culture is also open to LGBT and can be considered to even celebrate sexual identity freedom. Thus, Taiwan data suggests that the LGBT aspect offer immense market opportunity, since this group of digital youths not only are more particular about their beauty in real life, but also gives great attention to and willing to put in more effort towards their online virtual image.

Correspondingly, the findings also suggest that there is a great opportunity for exporting herbs overseas, given the awareness and usage of herbs by youths in each country. The youths could be introduced to another foreign country's herbs, perhaps through social media, possibly learning from the strategies of K-Beauty. E.g. Indian youths could learn more about Chinese and Thai herbs, and Chinese youths could also be introduced to Indian and Thai herbs, etc.

Since it was found that Thai respondents were the group that was most aware of Indian and Chinese herbs for enhancing beauty and anti-aging, it could be suggested that the use of Indian and Chinese herbal solutions for skincare, haircare, immunity, and vitality has high potential in the Thai market, and will also likely increase in popularity among ASEAN youths, since countries like Myanmar, Cambodia and Vietnam also recognizes Thai beauty brands. Moreover, as countries move to sustainability and BCG- bio circular & green economies, herbs have high appeal especially among the youths of the digital age who grew up surrounded by environmental protection concerns, and even experiencing environmental pollution personally in real life, e.g. PM 2.5. With the forecast in increased consumption, it is important to bear in mind that herbs are agricultural produce, therefore their availability with growing demand may be a challenge.

As for herbs and COVID-19 prevention and cure, Thai and Indian respondents offered herbal remedies, which consisted of common herbs found in Indian and Thai cooking. This is not surprising in the case of Thailand, where the Thai government has been actively carrying out public campaigns to promote galingale (กระชายขาว) and Kariyat (ฟ้าทะลายโจร). By nature of Thai food and Indian food which uses a lot of herbs as an ingredient, in comparison to Chinese food which does not use much herbs, this study found that digital age youths in Thailand and India are also very aware of common herbs that are used in Thai and Indian food, how certain herbs can be used in daily foods, in regular daily cooking, for their medicinal properties in boosting immunity against COVID-19.

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