

2022

Western herbalism: What drives individuals within Rhode Island to study this ancient healing modality?

Kyla Shea

Western herbalism:

What drives individuals within Rhode Island to study this ancient healing modality?

Kyla Shea

College of Food Innovation and Technology, Johnson & Wales University

FOOD6030: Food Innovation & Technology Capstone

Dr. Branden Lewis

August 2022

ABSTRACT

People globally rely on herbal practices as their main form of healing, yet few people in the West understand how to properly identify and effectively use herbs. This loss of knowledge regarding traditional healing practices was done so intentionally during enslavement and colonization, resulting in exploitation and misinterpretation of herbal practices. By reclaiming this knowledge, it is not only a way to improve the health of communities and the land, but it is also a way of reclaiming ancestral traditions and connection with oneself. Furthermore, this research paper explores the complexities of Western herbalism and determines what drives individuals within Rhode Island (RI) to study this ancient healing modality.

Interviews were conducted on two herbal educators and two herbal students, teaching and studying through Farmacy Herbs Community Education Center in Providence, RI, respectively. Observational data was collected during the *Level I: Herbal Foundations* class taught through Farmacy Herbs. Themes that drive herbal studies were created based on interview findings but were informed by prior knowledge from observational research and literature review findings. Quotes from interviews were provided as supporting evidence for presented themes.

Results showed ten themes motivating individuals to study Western herbalism within RI, including reclaiming ancestral traditions, health empowerment, connecting with nature, preventative health, community building, caring for loved ones, correcting misconceptions in mainstream media, increasing physical accessibility of herbs and herbal education, strengthening connection to oneself, and social justice. This study was limited to herbal educators and students within RI, and the project was completed within one semester which left minimal time to conduct interviews and analyze data.

These findings can be used in future research when tailoring content to raise awareness of, and further spread, this healing modality. Another area for future research includes using the framework of Complex Systems Science to research the efficacy of herbal medicine, giving special consideration to the profoundness of natural phenomena, processes, and designs. There is great potential for exploration in the field of Western herbalism, and the findings of this research paper provide a solid beginning for that exploration.

CONTENTS

Preface.....	5
Introduction.....	6
Literature Review.....	8
Action Research Plan.....	20
Problem of Practice.....	23
Research Methodology.....	26
Data Collection and Analysis.....	28
Results and Findings.....	29
Figure 1.....	30
Figure 2.....	31
Photograph 1.....	32
Supporting Quotes.....	33
Discussion and Conclusions.....	39
References.....	42
Appendix A: Literature Review Matrix.....	46
Appendix B: Action Plan Matrix.....	47

PREFACE

While working on an herbal farm in Rhode Island, I have had the privilege of learning about growing practices of medicinal herbs. My time on the farm began with weeding out overgrown beds from the previous season, which greatly differed from my original idea of what weeding was. Having worked in the garden with my grandma growing up, weeding meant pulling out unwanted plants and discarding of them. On the farm, however, each plant is identified before removal, and the plants that offer medicinal benefits are turned into products such as teas, tinctures, and salves. This moment was eye-opening in that it highlighted the lack of appreciation weeds normally receive in agriculture and landscaping. According to Merriam-Webster, a weed is defined as “a plant that is not valued where it is growing and is usually of vigorous growth” (Merriam-Webster, 2022). Based on this definition, the differentiation between a weed and a desired plant is simply where value is placed.

INTRODUCTION

Recent studies critically evaluating farming systems have found that conventional farming practices significantly impact soil nutrient loss, soil erosion, pesticide risk, and herbaceous plant biodiversity (Pacini et al., 2003), with an expected increase in soil sensitivity to extreme weather effects and pest outbreaks (Schrama et al., 2018). These conventional methods include the use of herbicides and pesticides, which are chemicals used specifically to kill unwanted herbs and insects (Schrama et al., 2018). When weeds are seen as a part of the system, as opposed to a competitor or interruption to the system, there is a decrease in chemical use which will increase soil health, decrease soil erosion, help with pest control, and increase plant biodiversity (Ekwealor et al., 2019). An example of this is dandelion, a medicinal plant that is often the target of weed killer due to its quick-spreading and competitive nature. When appropriately tended to, however, this nutritive plant can be extremely beneficial for lawns and gardens. The “invasive” roots help loosen and aerate the soil, and these roots travel deep enough to pull up nutrients, such as calcium, that other plants do not have access to (Sanchez, 2007).

Not only does this plant help the health of the land, but it offers many medicinal properties to those who consume it. According to a review of its botanical, phytochemical, and pharmacological profiles, dandelion has “...antioxidant, antibacterial, anti-inflammatory, antiviral, cytotoxic, diuretic and hepatoprotective properties” (Grauso et al., 2019, p. 1115). As a result of these properties, dandelion is among the “medicinal plants of commercial interest for nutraceutical and phytopharmaceutical industries” (Grauso et al., 2019, p. 1115). Dandelion is just one example of how important these plants are, and when looking through the lens of their phytochemical and pharmacological profiles, the dismissive title of “weeds” is quickly removed.

While this idea of “weeds” providing medicinal value may seem new to those living in a modernized, Western society, Indigenous communities have been using these practices for centuries, making them far from new. Starting with enslavement and colonization, these practices were stripped from the communities in which they originated, and then exploited for capital gain (Morgan, 2020). Acknowledging the medicinal value of plants growing around us goes much deeper than strengthening the healthcare system. Reclaiming this knowledge is a way of reclaiming ancestral traditions and giving back power to those communities who were stripped of it years ago.

When reflecting on what motivates individuals to study Western herbalism, a common desire is to help communities and the land heal by making medicinal herbs and herbal knowledge more accessible. Education largely determines accessibility; even if these herbs are physically available, the value of them lies in knowing how to properly identify and make use of them. Furthermore, after researching this area of concern and reflecting on personal interests, my research question is: How can I effectively identify what drives individuals to study Western herbalism?

This project begins with a review of existing literature related to the practice of Western herbalism, followed by the eight-step action research plan. The problem of practice and research methodology are then laid out, and data collection and analysis are explained. Results and findings are shared in the form of a table, chart, photograph, and quotes, and conclusions are drawn based on these findings. Discussion for future action research is shared, followed by references and appendices to supplement findings communicated throughout the paper.

LITERATURE REVIEW

Western herbalism is the most common form of herbalism practiced in the United States and has been developing since the 1800s. This form of herbalism uses chemical constituents, herbal actions, clinical studies, and a variety of cultural practices that originate from ancient traditions in Greece, India, China, and from many Indigenous cultures (Blue, 2015). Right now, the World Health Organization (WHO) estimates that four billion people rely on herbal medicine as their main form of healing, which is about 80 percent of the world's population (Casteleijn et al., 2019, p. 127). This makes it crucial to understand the history of this practice, the potential benefits of plant medicine, and what may be preventing that additional twenty percent of the world from using it.

There is a gap in literature pertaining to the history of Western herbalism, since much of the written information regarding this healing modality comes from white Europeans who were able to translate the practices into written English (Pdxscholar & Schweid, 2018). This is important to note because when information does not come directly from the source, it creates space for ambiguity, biases, and distortion of the truth regarding the origin of these practices. As Mary Blue (2015), a long-time community herbalist and herbal educator, shares, it is important to fill in these gaps with the truth that has intentionally been left out. The first part of this literature review addresses such gaps, followed by the second part, which surveys clinical studies that have looked at medicinal uses of plants for various disease states. The third and final part reviews policies and regulations that exist within the United States that may be acting as barriers to herbal access for those seeking this form of care.

Traditional healing practices incorporate mind, body, spirit, and Earth, while modern medicine focuses solely on the physical body (Pdxscholar & Schweid, 2018). When a more

reductionist view of the world was introduced by colonizers, people began to question and invalidate the intuitive nature of this type of medicine. As Schweird and Pdxscholar (2018) share in *The Epic Rise and Subtle Fall of American Herbalism*, “while the indigenous people kept this mystery alive, others lost it, by means of colonization of the soul” (p. 6). The Indigenous people of North America were practicing herbalism long before Europeans colonized the land. Instead of being written down, many of these healing remedies were passed down orally and through practice within the native communities. When colonizers arrived, the Indigenous people were very generous in sharing their traditional herbal practices and are known to have saved many of the colonizers’ lives by doing so (Pdxscholar & Schweid, 2018). This explains why most of the first herbal texts were written and translated by European settlers, even though most of that knowledge originated from the generous native communities. As Mary Blue (2015) shares in her book titled *Herbal Foundations: A Guide to Utilizing Medicinal Herbs Effectively*, a lot of traditional knowledge regarding herbalism has been either appropriated or forgotten through years of imperialization, so it is important that practitioners give back by recognizing and respecting the many contributions from various subcultures within Western herbalism.

Like the Americas, when biomedicine was introduced by European colonialism in Africa, it opened an opportunity for attack on Indigenous healthcare practices (Asongwe, 2021). Exploring herbalism and traditional medicinal practices in Africa speaks directly to the history of Western herbalism because of the multicultural and multinational influences introduced to the West during colonization. Enslaved Africans crossed the Atlantic with the transatlantic slave trade and brought their herbal knowledge with them. These Africans relied heavily on herbalism as a daily practice of empowerment and healing because they lacked other options to help heal illness or injuries. Many of these Africans brought seeds from their homelands braided into their

hair and, upon arrival to the Americas, learned more about the local plants and their medicinal ways from the Indigenous people they were cohabitating with (Morgan, 2020).

Introduction of Western medicine to Africa began in the 1840s by English missionaries and intensified during German British colonialism. The Europeans discredited traditional medicine by acting as if European biomedicine was a gift to Africa; Europeans deemed Africa's current healthcare system as superstition, witchcraft, and ineffective, instead of creating a healthcare system that would incorporate both (Asongwe, 2021). Racism played a large role in this, in that white Europeans labeled certain diseases to be "African" and insisted on a need for Western healthcare in Africa since it was coming from a "superior race" (Asongwe, 2021, p. 31). Traditional medicine was born out of experience, culture, belief system and disease environment, and regarded that physical therapies were interconnected with the body, mind, and spirit of an individual, as previously mentioned. The colonizers, however, did not see it this way, and believed that Western scientific medicine was the only true form of medicine. The Pharmacy Ordinance of 1945 and Dentist Ordinance of 1954 in Africa were authoritative policies that limited activities of traditional healers by criminalizing traditional medicine (Asongwe, 2021). Despite colonial authorities attempting to permanently eradicate these practices, many Indigenous populations still sought out Indigenous healers due to the necessity of treatment.

Another common belief in these traditional healthcare systems is that knowledge of plant medicine should be a public asset, as opposed to a commodity only available through large agencies and companies. This belief has been miscommunicated over the years, largely due to the creation of patent medicine in the 18th Century (Pdxscholar & Schweid, 2018). Patent medicine consisted of a combination of plants, drugs, and alcohol that would be marketed as a cure-all for various illnesses and diseases. Despite the name, these formulas were not actually

patented or even labeled with the ingredients. This medicine soon became a business venture for many salesmen who created traveling shows to market this “medicine” to people. In 1906, the Pure Food and Drug Act was passed, requiring all formulas to be labeled and putting an end to these deceitful sales tactics. Unfortunately, the inclusion of plant products in many of these formulas meant herbalism remained loosely tied to the era of patent medicine, putting the validity of herbal medicine into question (Pdxscholar & Schweid, 2018). This lack of trust can still be seen in the way policies and regulations are dictated today.

Another article titled *Plant Listening: How North American Herbalists Learn to Pay Attention to Plants*, by Charis Boke (2019), discusses human relationships with plants, specifically through the doctrine of signatures. This doctrine emerged from European medical thinking and became an important aspect of working with medicinal plants in Western herbalism. Jake Boehme, a Christian mystic living in Germany in the late 16th to early 17th Century, wrote a treatise titled *The Signature of All Things*, where he shares that there is no living thing that does not already exhibit external symptoms of its internal state (Boke, 2019). Boehme also added that these plant “signatures” were the “life-spirit” of the plant being expressed externally. Paracelsus, cited as a major lineage figure by many modern white Western herbalists, and Boehme both agreed with other Christian mystic healers that the “other-than-human world contains signs that indicate to humans how to identify and make medicine” (Boke, 2019, p. 25). Paracelsus also shared a perspective that the human body is a microcosm of nature and determined if a part of a plant looked like a part of the human body, then that plant may be used to treat an ailment of that part of the human body (Boke, 2019, p. 25). By using this frame of thought, it demonstrates a “general orientation towards plants as active, lively beings, not passive material for exploitation” (Boke, 2019, p. 27). According to Mary Blue (2015), using spirituality in relation to the Earth is

a way of recognizing the importance of planetary health while healing illness that may be emotionally or spiritually rooted (p. 3).

When thinking about plants from this framework, it makes sense that plants should be cared for in the same way other living beings are. Indigenous agricultural practices focus more on the quality of the crops and land as opposed to quantity produced. In Indigenous practices, no synthetic chemicals are used, which means the environment stays cleaner and abundant with biodiversity. According to Sharma, et al. (2020) in their article titled *Indigenous Agricultural Practices: A Supreme Key to Maintaining Biodiversity*, biodiversity “deals with the close relationship between indigenous flora and fauna including the abiotic factors in a particular area” (p. 92). Modern day organic agriculture is largely based on Indigenous practices for “standardization of ecological processes to increase soil fertility” (Sharma et al., 2020, p. 105). Crop rotation and mixed cropping are also practices developed from Native wisdom to maintain soil fertility and prevent pests, soil-borne diseases, weeds, soil erosion, and more. Specifically, medicinal plants should not be grown in soil contaminated with sludge, heavy metals, residues, plant protection products, or other chemicals because they may interact with the potency of the plant medicine or hurt the person ingesting that plant (Zhang et al., 2021). Although planting certain medicinal herbs may be used as a way to replenish the contaminated soils, these herbs should not be harvested for ingestion.

Indigenous knowledge is described as being, “the unique, traditional, local knowledge existing within and developed around the specific conditions of women and men indigenous to a particular geographic area” (Sharma et al., 2020, p. 93). Using this knowledge, crop selection has always been made based on the plants’ relationship with each other to ensure complementary relationships as opposed to competitive interactions (Sharma et al., 2020). The WHO guidelines

on *good agricultural and collection practices* (WHO-GACP) mentions that small-scale cultivation is preferable to large-scale production for medicinal plants for the additional reason of ensuring positive impact on local communities in the form of job availability, fair wages, and equal employment opportunities (Zhang et al., 2021). This is an important point to consider so that as international trade of herbal medicine develops, it does not neglect the social impacts of the local herbal planting industry.

Taking the relationship between plants and their environments into consideration, another study analyzed Western herbal medicine using the framework of Complex Systems Science (CSS), which is a “transdisciplinary approach to science offering descriptions and explanations of how collective behaviors of whole systems arise from the parts and how whole systems interact with environments” (Niemeyer et al., 2013, p. 2). Examples of when CSS has been applied to living interacting systems in the natural world includes explaining the unpredictability of weather, repeated patterns of shorelines and mountain ranges, the activity of ants, and the self-similar patterns of plant structures. This same way of thinking can be applied to medicinal plants because these plants in and of themselves are complex systems. Teas, tinctures, and liquid extracts represent a state of herbal medicine closer to the natural state of the plant, which may differ molecularly, in terms of function, compared to specific molecules being extracted from the plant and tested in biomedical research. In other words, as stated by Neimeyer et al. (2013), “The behavior of a molecule may be a function of its environment...the reductionist method of research may have limited applicability to the practice of [Western herbal medicine]” (Neimeyer et al., 2013, p. 3). Without taking into consideration the system as a whole, which includes external factors, conclusions drawn from current research methods regarding botanical medicine may not be applicable to Western herbalism.

Reductionist research does not take into consideration the binding connection and inseparability of humans and the natural world, which makes herbal medicine function as a complex adaptive system (Neimeyer et al., 2013). Complex systems are self-organizing, dynamic systems with various functions that create information networks, meaning the whole system is greater than any singular isolated part (Neimeyer et al., 2013). Since Western herbal medicine is based on this interactive relationship between plants and humans, “The lack of research and documentation of traditional knowledge-based herbal medicine places [Western herbal medicine] in peril of loss to society as a whole and specifically, to the scientific healthcare community” (Neimeyer et al., 2013, p. 8). By approaching WHM from a complex systems view, it creates a much-needed intersection of science and traditional medicine.

Until researchers use the lens of CSS when researching herbal medicine, the literature available consists of clinical studies that look at the effects isolated herbs have on various disease states. One study conducted by Clemente et al. (2021), looked at the use of herbal medicines by individuals with cerebral palsy (CP). This study found that people with CP use herbal medicine in addition to conventional drugs to decrease side effects of the conventional drugs. While there are herb-drug interactions to be aware of, the results of this study alone showed no interactions in patients using herbal medicines and conventional drugs at the same time. Common herbs used were parsley, chamomile, and cinnamon. The parsley root and seed are traditionally used as diuretics, for arthritis, rheumatism, and other inflammatory disorders. Chamomile is one of the most popular plants used for indigestion and inflammatory treatments, and cinnamon is used for colds, digestive, and circulatory problems (Clemente et al., 2021). While these herbs aid in helping those with CP, they clearly address other symptoms as well.

In addition to patients with CP, patients with diabetes mellitus use herbal medicine, some using it in addition to pharmacological medicine, and others using it as an alternative to conventional therapies that they are not benefitting from. This information comes from a study conducted by Ruiz-Noa et al. (2021), on adults with Type II DM in Mexico, with results showing that 59.2% of the patients with T2DM used herbal medicine, and that 62% of the participants used complementary and alternative medicines (CAM) to help manage T2DM. CAM includes nutritional supplements, nutritional counseling, spiritual healing, and relaxation techniques in addition to medicinal plants (Ruiz-Noa et al., 2021). Herbs used in this study include nopal, minga, aloe, wereke, prodigiosa, and tronadora, which are amongst the most widely studied plants in the Mexican population.

These plants are known to have anti-hypoglycemic and antidiabetic properties. Moringa has been shown to lower blood glucose levels and cause increased insulin levels in some diabetic patients. Aloe, tronadora, and prodigiosa help maintain good glycemic control. Specifically, tronadora helps with the inhibition of glucose uptake by adipocytes, and prodigiosa has an inhibitory effect on alpha-glucosidase (Ruiz-Noa et al., 2021). Of all the patients who used herbal medicine in this study, 91.9% use it without the recommendation of a health professional (Ruiz-Noa et al., 2021). Due to the possible herb-drug interactions this can be dangerous and result in a hypoglycemic reaction, so patients with T2DM should be sure to consult a healthcare professional and be closely monitored for any adverse effects. Limitations to this study include that it was only conducted on a specific region of Mexico, so it is not possible to generalize this information to the entire Mexican population, or beyond.

Another study looked at herbal medicine for those with self-reported anxiety or depression in Australia, and found chamomile, echinacea, gotu kola, and passionflower to be

beneficial (Casteleijn et al., 2019, p. 127). Specifically, chamomile was reported to reduce symptoms of anxiety, was very well tolerated, and had no increase in adverse effects at higher doses. Echinacea significantly reduced anxiety over three days and gotu kola significantly reduced the severity of the startle response associated with anxiety. Passionflower was also found to significantly reduce anxiety symptoms. As previously mentioned, herbal medicine is estimated to be used by 80 percent of the world's population; however, as reported by this study, "the effectiveness of western herbal medicine practice in any condition is a major research gap making it difficult to develop policy or planning around herbal medicine practices, issues around professional regulation and development hinge on this clinical research" (Casteleijn et al., 2019, p. 127). This means that in addition to the method of research for herbal medicine having a reductionist approach, the amount of research itself is also lacking.

This same conclusion was drawn by another study that researched traditional herbal medicines used in obesity management. While this study did find evidence regarding ginger, hibiscus, and papaya seed powder to have beneficial effects on weight management, the researchers agreed that there are still several gaps when it comes to studying herbal medicine and further investigations are needed to strengthen this evidence (Aumeeruddy & Mahomoodally, 2021). The evidence they did find in this study, however, included ginger stimulating antiobesity activity by altering the activities and expressions of some lipid metabolism marker enzymes, which is how fat is broken down in the body. Hibiscus capsules helped reduce body weight, body mass index, body fat, and liver steatosis, which is fat build-up in the liver. Similarly, papaya seed powder showed pancreatic lipase inhibitory activity which decreases the absorption of fats (Aumeeruddy & Mahomoodally, 2021). These metabolic processes are what contribute to obesity management.

Herbal medicine is clearly a great option when available, however there are various barriers to accessing this medicine. Historically, explorers, settlers, and traders were the ones who freely dispersed the ingredients of their traditional apothecaries. Today, distribution of herbal medicine is difficult with the number of regulatory barriers in place when it comes to product development and transportation (Brendler et al., 2021). In other words, increasing regulations have affected the availability of these traditional herbs in the First World marketplace. As previously mentioned, research is lacking regarding plant medicine, and this is partially because manufacturers tend to avoid product development with new botanical ingredients due to the economic opportunity not making up for the investment (Brendler et al., 2021). Any new biological preparations must be reported to the FDA prior to marketing, otherwise the label must state that the FDA has not evaluated the medicine. Herbal medicine falls under the category of food or dietary supplements in the United States, both of which labeling is not regulated by the FDA. This makes regulation of herbal products difficult and may add a barrier to understanding which products are safe for ingestion and to what amounts should be ingested.

For regulations surrounding herbal medicine to change and for these practices to be accepted into the healthcare system, government funding would need to be allocated to conduct herbal research. Advocates for herbal practices seek legitimacy for the practice within the medical community. Focusing more on plants as a legitimate form of medicine and implementing appropriate regulations will benefit the global population by increasing access to healthcare, providing new and improved cures to a multitude of diseases and by providing options to patients so they can choose the method of care they desire (Netzer et al., 2021). Cultural and historical differences greatly impact the policies regarding herbal cultivation

standards in various regions, making international trade of herbal medicine difficult. As Zhang, et al. (2021) adds, since different environments have different effects on the growth and metabolic make-up of medicinal plants, the lack of trade availability for these herbs introduces a barrier to accessibility for those who live in environments that are not conducive to growing, or that lack availability to small-scale herbal farming.

In regard to legalization of traditional herbal medicines, Xiong, et al. (2021) looked specifically at these challenges related to the fight against COVID-19 and found that the use of herbal medicine may have value in preventing, supporting, complementing, or rehabilitating COVID-19 but cannot be claimed to do so because of the policies and regulations surrounding herbal medicine use in the United States (p. 4). Health claims are not permitted on labels of food products or supplements, and since herbal products are sold under these categories, they are also not permitted to make health claims. If an herbal product is intended for use as a disease treatment and will be labeled in this way, then the product must be registered under FDA's *Guidance for Industry-Botanical Drug Products* — this guidance provides the current thinking on appropriate development plant for botanical drugs (Research, 2020). By doing so, the product is classified under botanical drugs and is held to the same standards and requirements as conventional drugs. Among these standards and requirements includes evidence of clinical studies and assurance of quality and consistency of the product. This is often difficult to provide due to insufficient funding for clinical research of herbal medicine, resulting in most herbal products remaining in the marketing category of food and dietary supplements. As stated by Xiong, et al. (2021), “as long as medicinal herbs lack data of the quality, efficacy, safety, and intellectual property protection, or the ethical committees do not allow to prove them, it is unlikely that there is much intention by pharmaceutical companies to invest money in the drug

development based on [herbal medicines], like Western companies do, with legal patents” (p. 4). So long as funding, and therefore research, is lacking, progression of herbal medicine will be difficult.

The history of Western Herbalism, clinical studies on safety and efficacy of herbs, herbalism in scientific research, and how regulations may be hindering access to this method of healing, are all important aspects to consider when understanding what drives individuals to study Western herbalism. It is evident that gaps exist within the literature pertaining to the history of Western Herbalism, and that clinical studies on Western Herbalism are limited. Advocates for this ancient healing modality still struggle for recognition in modern-day medicine, where the key to legitimacy is locked behind research funding held by the same colonial powers which exploited the practice to begin with. It is likely that students who choose to study herbalism are also passionate about honoring the roots of these practices while contributing to the progression and dissemination of herbal medicine. Understanding what motivates students to study herbalism will provide a look into where herbalism is most needed and the role that it plays in modern-day society.

ACTION RESEARCH PLAN

Step 1: Clarify Aims

Action research question: How can I effectively identify what drives individuals to study Western Herbalism?

- I am aiming to determine what motivates people to study Western herbalism.

Step 2: Explain Rationale and Purposes

Research aim	Reasons for the research project	Purposes of the research project	Value as the basis for planning to take action
I am aiming to determine what motivates people to study Western herbalism.	Western herbalism is a multifaceted healing modality that attracts people from different backgrounds and professions.	Understanding why people study Western herbalism provides insight into the personal motivations and environmental factors which inspire interest in the practice.	Desire to spread awareness to the communities who are in need of this healing modality.

Step 3: Identify Objectives and Targets

Aim	Objective	Knowledge	Skills	Understanding
To determine what motivates people to study Western herbalism.	Determine characteristics which lead people to want to study Western herbalism.	Will know what drives individuals to study Western herbalism.	Will be able to gear awareness content towards motivations for garnering learners.	Will understand motivations of these individuals.

Step 4: Plan for Activities and Milestones

Short Term:

Targets	Activities	Anticipated Outcomes
Identify a group of students who are currently studying Western herbalism.	Reach out to teacher of students and ask permission to conduct interviews.	Gain permission of teacher and students to conduct interviews.

Medium Term:

Targets	Activities	Anticipated Outcomes
Conduct interviews on students and educators and collect observational research during class.	Interview students and educators using a semi-structured interview approach with open-ended questions and collect observational data during class time.	Have recorded interviews from all students in the class along with detailed observations from class.

Long Term:

Targets	Activities	Anticipated Outcomes
Determine what motivates people to study Western herbalism.	Critically analyze data collected from interviews and observational data.	Understand why students chose to study Western herbalism, including observations on recurring themes in class.

Step 5: Consider Resources

Aim	Who needs it?	What do I/we need?	When do I/we need it?	Where do I/we need it?	Which do I/we need?	Availability ? High-low probability
Determine what motivates people to study Western herbalism	Herbal students and educators	Insider access to students and teachers, Zoom software access for interviews, computer access for interviews and analysis of data	As soon as possible	Students/ teachers within Rhode Island	Currently enrolled students	High

Step 6: Draw-up Timelines

Time	Action	Time allowed
Week 1 (7/11)	Create semi-structured interview questions and participation forms to be filled out prior to interviews. Reach out to all four participants, two educators and two students, to ask permission to conduct interviews.	One week.
Week 2 (7/18)	Conduct interviews on Mary Blue, her educator assistant, and two students. Record observations during class time.	One week.
Week 3 (7/25)	Re-watch recorded interviews and report any recurring themes, including important quotes to be used as evidence. Compare these themes to those found in the observational data. Convert this data into graphs/charts.	One week.
Week 4 (8/1)	Draw conclusions on the analyzed data and report on future research needs.	One week.
Week 5 (8/8)	Develop poster presentation to accurately depict findings and conclusions.	One week.
Week 6 (8/15)	Present findings.	Time allotted for poster presentation.

Step 7: Articulate Criteria

Criterion	Am I/are we achieving the criterion?
Information Gathered	Was I able to gather the information needed to determine what factors bring people to Western herbalism? Yes.

Step 8: Articulate Standards of Judgement

Criterion	Standard
Information Gathered	Did I gather information which could prove useful in determining factors that drive people to study Western herbalism? Does this information provide potential for future action to increase awareness, participation, and education of Western herbalism amongst people?

ACTION RESEARCH PROBLEM OF PRACTICE

Community herbal education centers, like Farmacy Herbs, are working hard to increase herbal accessibility by addressing barriers to herbal education (Farmacy Herbs, 2022). Farmacy Herbs has a storefront located in Providence, Rhode Island, where bulk herbs and herbal products are sold. This choice of location addresses geographic barriers to herbal accessibility because urban communities often lack sufficient space and nutritive soil for plant growth. Economic barriers are also addressed by providing sliding scale pricing for educational courses, where prices are flexible depending on the student's income (Farmacy Herbs, 2022). Amongst the most popular educational courses offered through Farmacy Herbs is the *Level I: Herbal Foundations* course, which educates students on the history and practice of Western Herbalism (Farmacy Herbs, 2022). Having had the opportunity to hear from students currently enrolled in this course, different motivations seem to inspire participants to study herbalism. Understanding the motivations of herbal practitioners and learners may help inform awareness content to further spread this healing modality. Furthermore, my research question is: How can I effectively identify what drives students to study Western herbalism?

The WHO estimating that approximately 80 percent of the world's population relies on herbal medicine as their main form of healing suggests this topic to be of major importance to at least four billion people worldwide (Casteleijn et al., 2019, p. 127). To continue spreading awareness of this healing modality to communities who need it, it is important to first understand the "why" that motivates already-existing students. Much of the available literature regarding Western herbalism was written by white Europeans, as they were able to translate the information into written English. When information does not come directly from the source, however, it leaves room for ambiguity and distortion of the truth regarding origin stories of these

traditional healing practices (Pdxscholar & Schweid, 2018). As Mary Blue (2015) shares, traditional knowledge regarding herbalism has been forgotten and appropriated through years of imperialization. Unfortunately, part of that imperialization was the creation of regulations and policies that hinder access to plant medicine and herbal education. While research regarding herbal medicine does exist, the modern-day, reductionist approach to research is not sufficiently capturing the effects of this practice (Neimeyer et al., 2013). Although clinical studies have proven herbal remedies to be beneficial for those with cerebral palsy, diabetes mellitus, anxiety, depression, and obesity, these studies look at isolated compounds from the plant, instead of looking at the entire system of plant compounds and their interactions with each other and the body. Western herbalism as a practice involves the interaction between humans and plants, which acts as a complex system. By looking at this research through a reductionist lens and isolating specific parts of the plants, important aspects of the system are ignored and therefore are not fully representing of the practice of Western herbalism.

Furthermore, when reflecting on available research, there are various things that may inform the “why” that attracts students to this practice. This “why” may be a desire to fill the gaps in literature pertaining to the history and development of Western herbalism, bringing back these practices to the communities who were stripped of them years ago; or perhaps the “why” is a desire to have a deeper understanding of the science behind herbal medicine and how researchers can more fully communicate the role herbs play in prevention and treatment of chronic disease. Regardless, determining the “why” will provide insight into the personal motivations and environmental factors that inspire interest in this practice.

To ensure successful action research, it is important to first set goals with corresponding anticipated outcomes. The short-term goal is to identify a group of students who are currently

studying Western herbalism, with the anticipated outcome of gaining permission from the educator and students to conduct interviews. The medium-term goal is to interview both the educators and students, anticipating both the educators and students will allow information collected during the interviews to be used during data analysis. The long-term goal is to analyze these interviews, along with observational data from classroom sessions, and draw conclusions based on recurring themes. The anticipated outcome is being able to determine what motivates students to study Western herbalism. To make these goals happen, insider access to students and teachers is required, along with Zoom software and computer access for interviews and data analysis. Access to this technology will be needed by both the interviewer and interviewee, so it is important to ensure all parties have access prior to scheduling interviews.

In addition to creating goals, it is important to have a detailed timeline outlining each week to ensure the project is completed on time. The timeline for this action plan is broken down into six weeks. The first week consists of reaching out to Mary Blue, herbal educator at Farmacy Herbs in Providence, Rhode Island, to ask permission to interview herself, her assistant educator, and two students. The second week consists of conducting interviews, and analysis of these interviews makes up the third week. Data analysis will include cross-referencing information gathered from educator interviews, student interviews, and observational data to determine any recurring themes. This data will be converted into charts and graphs, and important quotes from the interviews will be pulled to support analysis. The fourth week will be used to draw conclusions based on the analyzed data and report on future research needs. Week five will be dedicated to the creation of a poster presentation that will accurately depict findings and conclusions, with the presentation of these findings taking place in week six. To determine if I have successfully addressed my research question, I will use the following standards of

judgement: Did I gather information which could prove useful in determining factors that drive people to study Western herbalism? Does this information provide potential for future action to increase awareness, participation, and education of Western herbalism amongst people? After reflecting on these questions, brainstorming for future research projects may begin.

RESEARCH METHODOLOGY

The data collection methods for this project will include interviews and observational research. Interviews will be conducted on two educators and two students currently enrolled in the *Level I: Herbal Foundations* course at Farmacy Herbs in Providence, RI. Open-ended questions will be used during the interviews with a semi-structured approach to elicit elaboration and additional information from interviewees. Examples of these questions may include: Why did you choose to study Western herbalism? Why did you choose the program through Farmacy Herbs? How long have you been studying herbalism? In your opinion, why do people study, or *not* study, Western herbalism? Using interviews as a data collection method allows the interviewer to observe other cues during the interview, such as facial expressions, body language, tone of voice, pauses in speech, and emotional expressions, that would be missed if using a different method, such as written surveys (McNiff, 2017, p. 179).

The second method of data collection will include observational research, which will be collected during the monthly class meetings. Data will be collected by listening to, and observing, actions and will be communicated in the form of notes, charts, and drawings. Additional notes will be made on participation, or lack thereof, from students and educators. It will also be noted if educators are encouraging self-thought and reflection, or if students are being told what to think. When recording observations, and later when analyzing them, it is

important that I am aware of my own biases (McNiff, 2017, p. 189). Observations are made from my own perspective, and my perspective is influenced by personal experiences, thoughts, and beliefs, making it important to note this potential bias. IRB approval will not be needed for either form of data collection, since the participants will not be at risk and the research will be used for class purposes only; class purposes include identification of a food-system related issue and using an action-based research approach to create change within this identified problem. This project is overseen by Dr. Branden Lewis at Johnson and Wales University and includes additional peer-review sessions to ensure best work practices. To meet ethical requirements, all participants must agree that their interviews can be recorded and used for the data analysis portion of this research project prior to the actual interview. Participants will also have the option to remain anonymous in the final report. This will be discussed and agreed upon prior to conducting interviews.

DATA COLLECTION AND ANALYSIS

During data collection and analysis, it is imperative that the validity of the data is tested (McNiff, 2017, p. 201). This will be done by authorizing the data from the source via direct quotes from the interviews to support observed themes. The observational data will also include dates and times that each class under observation took place, along with a photo of the class location. While this validates the raw data, it is also important to validate the knowledge claims. To do so, a triangulation method will be used, which means using three different sources of data that support the same conclusions (McNiff, 2017, p. 190). For this research project, the three points of data will include interviews from educators, interviews from students, and observational data collected during class time. For a knowledge claim to be made, all three points of data must provide supporting evidence of that claim. This will also authenticate my observational research and ensure that the speculations from observations are as unprejudiced and authentic as possible. By the end of this research project, I anticipate that I will have determined what motivates students in this setting to study Western herbalism. I hope that by referring to evidence provided in the form of charts, which will display common themes from all three sources of data and quotes pulled from interviews to support those themes, readers will be able to critically analyze my findings to inspire further action research.

The potential for this research cannot be emphasized enough since most people in the world use herbal medicine as their main form of healing. With the data collected through this research project, I anticipate having a better idea of how to gear awareness content of this healing modality to those communities who may be in need and receptive to it. While this project specifically will not fill the gaps that exist within Western herbalism, it will at least begin to highlight the gaps that need filling. Moving forward, future research projects will be required

to determine what may be acting as barriers to herbal accessibility and how herbal proponents, such as educators and students, can address those barriers. This research project is a necessary first step in that process because understanding the “why” helps inform the “why not.”

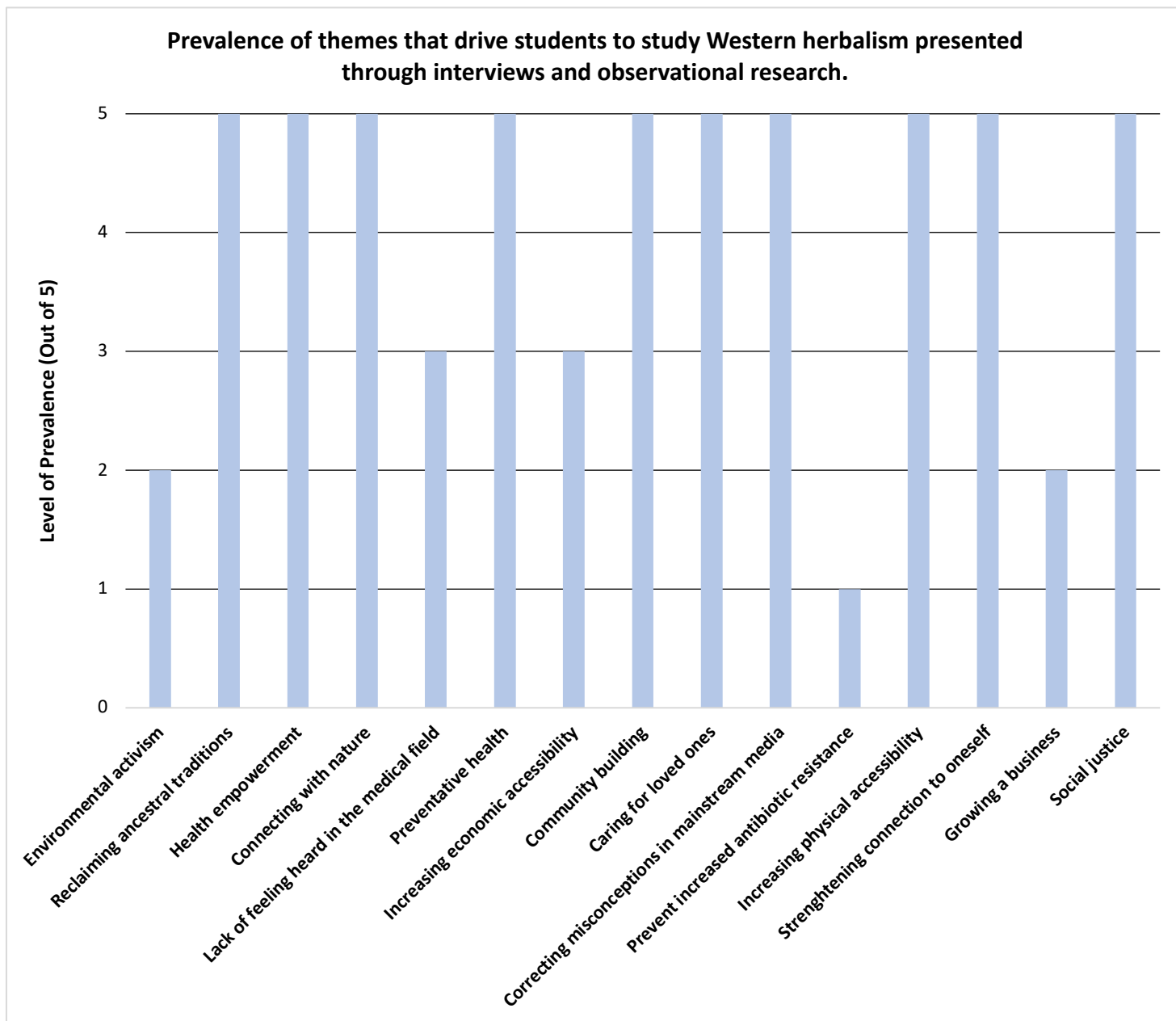
RESULTS AND FINDINGS

Interviews were conducted on two herbal educators, Mary Blue and Tammy Kim, and two of their students, Priscilla Vargas and Kristen Moshiek, all of whom teach and study through Farmacy Herbs Community Education Center in Providence, RI, respectively. Audio recordings of each interview were listened to and analyzed for themes presented by participants that address why students study Western herbalism, represented in Figures 1 and 2. Themes were created based on interview findings, but were informed by prior knowledge from observational research and literature review findings. Quotes were pulled directly from interviews as evidence for presented themes, with dates and times provided for each interview; exact recordings are available if necessary to validate data. Observational research was collected in the form of notes during class time and later analyzed for recurring themes, which is also included in Figures 1 and 2. Photograph 1 below includes the time stamp that ensures the photo was taken during class time and validates observational research came directly from the in-person class at Farmacy Herbs in Providence, RI.

Figure 1: Identifying which motivators for studying Western herbalism were presented through interviews and observational research. Y = Yes, the theme was presented; N = No, the theme was not presented.

	Method of Data Collection				
	Student Interview - Priscilla	Student Interview - Kristen	Educator Interview - Tammy	Educator Interview - Mary	Observational Research
Theme 1: Environmental activism	N	N	N	Y	Y
Theme 2: Reclaiming ancestral traditions	Y	Y	Y	Y	Y
Theme 3: Health empowerment	Y	Y	Y	Y	Y
Theme 4: Connecting with nature	Y	Y	Y	Y	Y
Theme 5: Lack of feeling heard in the medical field	N	Y	N	Y	Y
Theme 6: Preventative health	Y	Y	Y	Y	Y
Theme 7: Increasing economic accessibility	Y	N	N	Y	Y
Theme 8: Community building	Y	Y	Y	Y	Y
Theme 9: Caring for loved ones	Y	Y	Y	Y	Y
Theme 10: Correcting misconceptions in mainstream media	Y	Y	Y	Y	Y
Theme 11: Prevent increased antibiotic resistance	N	N	N	Y	N
Theme 12: Increasing physical accessibility	Y	Y	Y	Y	Y
Theme 13: Strengthening connection to oneself	Y	Y	Y	Y	Y
Theme 14: Growing a business	Y	N	N	Y	N
Theme 15: Social justice	Y	Y	Y	Y	Y

Figure 2: Prevalence of themes that drive students to study Western herbalism presented through interviews and observational research.



Photograph 1: Mary Blue teaching the Level 1 Herbal Foundations course in the student garden at Farmacy Herbs in Providence, Rhode Island on 9 July 2022 at 11:39AM.



The interview with Mary Blue, herbalist and owner of Farmacy Herbs Community Education Center, took place on 18 July 2022 at 11AM. During the interview, Mary discussed her past experiences with herbalism and why she chose to open a community herbal education center:

“I actually went to New Orleans in 2004 right after [Hurricane] Katrina to volunteer with a bunch of friends who had opened a clinic right in the disaster area, the ninth ward, and we brought all our herbs down and treated people for like...I mean the clinic is still open, I was there for about 3 months...but used herbs in this disaster scenario and they were so effective. Nervines were so effective, lung support, people had mold problems, people had all sorts of issues that...the herbs were really supportive, and it was the sort of clinic where there were doctors working as well so it was an integrative clinic. And I really saw, wow this is really...uh...this is really powerful and like wouldn't it be more powerful if people already had some education and some access to herbs *before* a disaster hits, you know? So they're not learning how to make an infusion when their house is under water...you know? So then I came home and was like I need to open up a place in Providence...I need to open up a community education center focused on herbalism and natural health...”

This quote addresses preventative health, health empowerment, increasing physical accessibility to herbs and herbal education, caring for loved ones, and environmental activism. Mary also highlighted the importance of community by adding to her story:

“And then in 2006 my best friend got cancer, Jessica, and she ended up dying in 2008 and she asked our community to donate money to build this Farmacy [Herbs] education center instead of flowers, and...um...we got like exactly what we needed

to open the store, build our infrastructure...from the community...called the Jessica Fund.”

Mary continued to share her desire to increase awareness to promote health empowerment, connecting with nature, and increasing both economic and physical accessibility by sharing a personal story regarding her recovery from the COVID-19 virus:

“I was just walking today and got a little short of breath, because the COVID, and just like looked down and saw some Lobelia and just [motioned to placing in mouth], took a leaf, felt better, kept walking. I’m like...you know how many people are like having an asthma attack and Lobelia is right next to them? And like they just have no clue...or like Mullein is right next to them...you know? It’s just...yeah, it’s just...I’m very thankful that like the last few days of having COVID and just going through the symptoms...the tools like, my herbal tools are like...make it so much easier. I can reduce my fever, I can reduce my stomachache, I can reduce my sore throat, I can help myself breathe, you know? I can boost my immune system...there’s so much I can do.”

In addition to wanting to increase awareness and accessibility of herbal medicine, Mary is also passionate about correcting misconceptions regarding herbalism in mainstream media. Having experienced teaching Western herbalism to Brown University medical students, Mary was able to see firsthand how these misconceptions manifest within the medical field:

“That’s a big thing is people trying to fit herbalism into this evidence-based medicine paradigm where it doesn’t fit. You can’t test herbs the same way you can test pharmaceuticals because they differ...where they’re grown, how they’re stored, how they’re extracted, it’s all different...so one study of, like, Mullein tea

can be different than, like, Mullein tincture because of the solvency part of it, so it's hard to reproduce evidence-based medicine within herbalism. It's all healthcare, but it's like [if] you use the same rules for basketball and soccer, they're both sports but you can't use the same rules for them. So, that's a big thing, people thinking...trying to fit herbs into that pharmaceutical paradigm."

Another herbal educator at Farmacy Herbs, Tammy Kim, shared a slightly different perspective when it comes to misconceptions regarding Western herbalism, highlighting the fact that most people are already practicing herbalism without even realizing it. Tammy's interview took place on 21 July 2022 at 10:20AM:

"Just like for all the reasons we've listed, which was connection to self, connection to our health, ownership of our health, connection to Earth...and then just taking care of the earth...and connection to our community. All of those...and connection to our culture and our history, because everyone has...no matter your race or background...everyone has, from your auntie, your grandma, whoever...has that like one thing in their family that's like, 'oh you have a cough, here take this,' and it could be like the most random, sideways thing...its funny how some people who don't believe in herbal medicine actually practice herbal medicine and they don't really put it together. Like if you drink coffee, what do you think that's from?"

This quote also mentions several other motivators for studying Western herbalism, including connection to oneself, health empowerment, connecting with nature, and environmental activism. Tammy further explains personal experiences with herbalism and brings up the theme of reclaiming ancestral traditions:

“I grew up with herbalism, just...you know being Asian American, my mom just always had remedies or took us...before she took us to the doctor she took us to our herbalist, Korean herbalist, so I always grew up with that.”

Tammy also shared personal struggles with feeling disconnected from her own body and how herbalism helped her to reclaim that connection, acting as a motivator for her to share the practice with others so that they, too, could feel empowered to reclaim their health and connection to themselves:

“I always tell them that herbalism is bigger than just the formula or just the plants, it’s the plants teaching you to listen to your body...and, um, understand what your body is telling you...and that can be applied to any part of your life.”

Tammy continued:

“You grow up listening to everyone else’s opinions, or everyone else’s ideas of what is wrong or right for your body, and I was just like I don’t even know my own intuition, I don’t know what my heart is saying to me, I don’t know what my body is saying to me...and that feels really scary, that we don’t even have that.”

Like Tammy’s drive to encourage health empowerment and reconnecting with one’s intuition, Kristen Moshiek, a student of both Mary and Tammy, shared during her interview that she started studying herbalism because she was looking for an alternative option to medicine. She also added that if this information was more readily available, people may be more likely to use it, acting as a motivator for her to study and share the practice. Kristen’s interview took place on 20 July 2022 at 4:30PM:

“I think a lot of people want alternative outlets, as do I, for medicine today...and yeah so, with that said, I do think that a lot of people are afraid because it’s not

textbook, they don't like to step outside of the box...and because the knowledge or experiences of Western herbalism, or medicine, isn't there....um, it's not at their fingertips...like if they had the knowledge they may use it.”

Kristen then continued to share how important she believes herbalism is for preventative healthcare:

“I think that there's a lot of knowledge out there that we just don't have...our society just doesn't have it. There's so many illnesses and I think that our approach to medicine isn't always the right approach, and I think there's alternative stretches to be able to, you know, heal illnesses, prevent disease, and I do believe it's preventative.”

Priscilla Vargas, another student of both Mary and Tammy, feels that people seem to be more in tune with their health and are interested in taking care of themselves using natural remedies. In addition to health empowerment, this addresses economic accessibility because natural remedies may be more feasible than expensive pharmaceuticals. Priscilla's interview took place on 19 July 2022 at 6:30PM, and she shared:

“I think more and more people are definitely changing their views on using natural medicinal products versus, like, pharmaceuticals. People are invested in their health, their mental health, and like...you know...even like economic stuff like where you could forage for plants that you could make as medicine instead of buying from a company and all of this other stuff.”

Priscilla also shared the importance of studying herbalism to reclaim her own ancestral knowledge, and to be able to pass that information down to her son:

“Herbalism for me is also about, like, reclaiming ancestral knowledge and, like, my work with my own decolonization so I want to learn this so that I can pass that down to my son...and, even though I know he’s going to learn things on his own, it’s not going to be like me where I have like no other family doing this kind of work.”

Priscilla further notes:

“It was already a part of our society, you know, ancestral knowledge...it was part of human nature to be like more in tune with what’s around them, and I think it’s been lost due to white supremacy and capitalism and stuff like that...so it’s just more about like working backwards.”

Instead of herbal medicine being thought of as a new approach to healthcare, Priscilla highlights that these practices are far from new. Indigenous communities have always used natural remedies as a form of healing, so it is about reversing the conditioning that resulted from years of colonization and exploitation of traditional healing practices. Priscilla, along with Mary, Tammy, and Kristen, all share important points and perspectives that highlight the motives for studying Western herbalism presented in Figures 1 and 2.

DISCUSSION AND CONCLUSIONS

After analyzing data from interviews and observations, I have developed my understanding of what motivates individuals to study Western herbalism. Based on Figure 2, the themes that came up in all five data collection instances include reclaiming ancestral traditions, health empowerment, connecting with nature, preventative health, community building, caring for loved ones, correcting misconceptions in mainstream media, increasing physical accessibility of herbs and herbal education, strengthening connection to oneself, and social justice. These findings suggest that students study Western herbalism for a variety of reasons and that awareness content must address all ten of these themes.

This study was limited to herbal educators and students within Rhode Island, so these motives may change depending on geographic location. Another limitation to this study is that it was completed within one semester, which left minimal time to conduct interviews and analyze data, resulting in a small sample size. To further strengthen reliability of data and conclusions, a validation group is recommended for future research (McNiff, 2017, p. 212). This group would consist of ten individuals who are familiar with the field of Western herbalism, such as additional educators or students, who would be asked to critically evaluate the claims made in Figures 1 and 2 after listening to the four interview recordings and reviewing observational research notes. Feedback from this group could be used to inspire direction for future research in the field of Western herbalism.

Different standards are used by professionals to judge the quality of work, largely determined by the values that inspire the work and values shared by the community of practice (McNiff, 2017, p. 198). The criterion for this action research is that information was gathered, and the standards of judgement for that information gathered is that it proves useful in

determining factors that drive people to study Western herbalism, and that the information provides potential for future action to increase awareness, participation, and education of Western herbalism amongst people. After analyzing data and drawing conclusions, these standards have been met and future research should build on these findings. Now that the motives for studying Western herbalism have been highlighted, future research must focus on how these motives can be used to help spread awareness and accessibility.

Another area for research was inspired by Mary Blue's mention of herbalism being forced into an evidence-based medicine paradigm by the medical system. Continued research should instead explore Western herbalism as interpreted by Complex Systems Science (CSS) to ensure that the whole system is taken into consideration. As Mary shared, soccer and basketball are both sports, but the same rules cannot be applied to both. Similarly, herbalism is a part of healthcare, but this practice must be given the individual attention that it requires, instead of being forced into a paradigm in which it does not fit. By using the framework of CSS, special consideration is given to the profoundness of natural phenomena, processes, and designs. If the same reductionist approach to research is used for herbal medicine as is used with pharmaceutical research, the spread of misinformation regarding the effectiveness of herbal medicine will only continue.

Now that the "why" for studying herbal medicine has been successfully identified within a small group of herbal educators and students, tailored content to raise awareness can be created to target those specific drivers of interest. These varying drivers of interest indicate a likelihood that most people would be interested in learning more about this practice for their own health, the health of their communities, or the health of the land. Furthermore, there is great potential for

exploration in the field of Western herbalism, and the findings in this study provide a solid beginning for that exploration.

References

- Asongwe, C. (2021). Traditional Medicine, Disease Control and Human Welfare in Colonial Southern Cameroons. *Saudi Journal of Humanities and Social Sciences*, 6(1), 26–36. <https://doi.org/10.36348/sjhss.2021.v06i01.005>
- Aumeeruddy, M. Z., & Mahomoodally, M. F. (2021). Traditional herbal medicines used in obesity management: A systematic review of ethnomedicinal surveys. *Journal of Herbal Medicine*, 28, 100435. <https://doi.org/10.1016/j.hermed.2021.100435>
- Blue, M. (2015). *Herbal Foundations: A Guide to Utilizing Medicinal Herbs Effectively*. Mary Blue.
- Boke, C. (2019). Plant listening: How North American herbalists learn to pay attention to plants. *Anthropology Today*, 35(2), 23–27. <https://doi.org/10.1111/1467-8322.12496>
- Brendler, T., Brinckmann, J. A., Feiter, U., Gericke, N., Lang, L., Pozharitskaya, O. N., Shikov, A. N., Smith, M., & Wyk, B.-E. V. (2021). Scelenium for Managing Anxiety, Depression and Cognitive Impairment: A Traditional Herbal Medicine in Modern-Day Regulatory Systems. *Current Neuropharmacology*, 19(9), 1384–1400. <https://doi.org/10.2174/1570159x19666210215124737>
- Casteleijn, D., Steel, A., Bowman, D., Lauche, R., & Wardle, J. (2019). A naturalistic study of herbal medicine for self-reported depression and/or anxiety a protocol. *Integrative Medicine Research*, 8(2), 123–128. <https://doi.org/10.1016/j.imr.2019.04.007>
- Clemente, M., Miguel, M. D., Felipe, K. B., Gribner, C., Cidade, R. E., Dias, J. F. G., Junior, D. F. C., Fernandez, L. C., Clemente, E. F., & Miguel, O. G. (2021). The use of herbal medicines and conventional drugs by individuals with cerebral palsy and the risk of

- interactions. *Journal of Herbal Medicine*, 30, 100500.
<https://doi.org/10.1016/j.hermed.2021.100500>
- Ekwealor, K. U., Echereme, C. B., Ofobeze, T. N., & Okereke, C. N. (2019). Economic Importance of Weeds: A Review. *Asian Plant Research Journal*, 3(2), 1–11.
<https://doi.org/10.9734/aprj/2019/v3i230063>
- Farmacy Herbs. (2022). *Farmacy Herbs – Community Health and Education Center*. Farmacy Herbs. <https://www.farmacyherbs.com>
- Grauso, L., Emrick, S., de Falco, B., Lanzotti, V., & Bonanomi, G. (2019). Common dandelion: a review of its botanical, phytochemical and pharmacological profiles. *Phytochemistry Reviews*, 18(4), 1115–1132. <https://doi.org/10.1007/s11101-019-09622-2>
- McNiff, J. (2017). *Action Research*. Sage Publications.
- Merriam-Webster. (2022). Weed. [Www.merriam-Webster.com. https://www.merriam-webster.com/dictionary/weed](https://www.merriam-webster.com/dictionary/weed)
- Morgan, A. (2020, August 18). *Roots of African American Herbalism: Herbal Use by Enslaved Africans*. Herbal Academy. <https://theherbalacademy.com/african-american-herbalism-history/>
- Netzer, K., Balmith, M., & Thabile, B. (2021). An appraisal of the regulatory policies governing the use of herbal traditional medicine. *Traditional Medicine Research*, 6(6), 57.
<https://doi.org/10.53388/tmr20211013249>
- Niemeyer, K., Bell, I. R., & Koithan, M. (2013). Traditional knowledge of Western herbal medicine and complex systems science. *Journal of Herbal Medicine*, 3(3), 112–119.
<https://doi.org/10.1016/j.hermed.2013.03.001>

- Pacini, C., Wossink, A., Giesen, G., Vazzana, C., & Huirne, R. (2003). Evaluation of sustainability of organic, integrated and conventional farming systems: a farm and field-scale analysis. *Agriculture, Ecosystems & Environment*, 95(1), 273–288.
[https://doi.org/10.1016/S0167-8809\(02\)00091-9](https://doi.org/10.1016/S0167-8809(02)00091-9)
- Pdxscholar, P., & Schweid, J. (2018). *The Epic Rise and Subtle Fall of American Herbalism*.
https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1012&context=econ_workingpapers
- Research, C. for D. E. and. (2020, May 7). *Botanical Drug Development: Guidance for Industry*. U.S. Food and Drug Administration. <https://www.fda.gov/regulatory-information/search-fda-guidance-documents/botanical-drug-development-guidance-industry>
- Ruiz-Noa, Y., Ibarra-Reynoso, L. D. R., Ruiz-Padilla, A. J., Alonso-Castro, A. J., Ramírez-Morales, M. A., Zapata-Morales, J. R., Orozco-Castellanos, L. M., Solorio-Alvarado, C. R., & Lara-Morales, A. (2021). Use of herbal medicine for diabetes mellitus in adults from the central–western region of Mexico. *Primary Care Diabetes*, 15(6), 1095–1099.
<https://doi.org/10.1016/j.pcd.2021.08.010>
- Sanchez, A. (2007). *Ten Things You Might Not Know About Dandelions*. Maine Organic Farmers and Gardeners. <https://www.mofga.org/resources/weeds/ten-things-you-might-not-know-about-dandelions/>
- Schrama, M., de Haan, J. J., Kroonen, M., Versteegen, H., & Van der Putten, W. H. (2018). Crop yield gap and stability in organic and conventional farming systems. *Agriculture, Ecosystems & Environment*, 256, 123–130. <https://doi.org/10.1016/j.agee.2017.12.023>
- Sharma, I. P., Kanta, C., Dwivedi, T., & Rani, R. (2020). Indigenous Agricultural Practices: A Supreme Key to Maintaining Biodiversity. *Microbiological Advancements for Higher*

Altitude Agro-Ecosystems & Sustainability, 91–112. https://doi.org/10.1007/978-981-15-1902-4_6

Xiong, Y., Gao, M., van Duijn, B., Choi, H., van Horsen, F., & Wang, M. (2021). International policies and challenges on the legalization of traditional medicine/herbal medicines in the fight against COVID-19. *Pharmacological Research*, *166*, 105472.

<https://doi.org/10.1016/j.phrs.2021.105472>

Zhang, M., Wang, C., Zhang, R., Chen, Y., Zhang, C., Heidi, H., & Li, M. (2021). Comparison of the guidelines on good agricultural and collection practices in herbal medicine of the European Union, China, the WHO, and the United States of America. *Pharmacological Research*, *167*, 105533. <https://doi.org/10.1016/j.phrs.2021.105533>

APPENDIX A: LITERATURE REVIEW MATRIX

Idea A: History of Western Herbalism	Blue, 2015	Morgan, 2020	Pdxscholar & Schweid, 2018	Asongwe, 2021	Boke, 2019
	History of Western herbalism and how practitioners must respect and honor the roots of these practices	How colonization and enslaved Africans played a role in the development of Western herbalism in the West	History of Western herbalism, specifically related to colonization and exploitation of traditional practices	Colonization of Africa and how this led to suppression of traditional medicinal practices	Explaining the Doctrine of Signatures, including the relationship between humans and plants from European herbalists
Idea B: Indigenous Agricultural Practices	Neimeyer et al., 2013	Sharma et al, 2020	x	x	x
	Western herbal medicine through the lens of Complex Systems Science (CSS)	Indigenous agricultural practices to promote biodiversity and focus on complementary relationships between plants	x	x	x
Idea C: Medicinal Properties of Herbs	Clemente et al., 2021	Ruiz-Noa et al., 2021	Casteleijn et al., 2019	Aumeeruddy & Mahomoodally, 2021	x
	Medicinal herbs for Cerebral Palsy; parsley, chamomile, cinnamon	Traditional Mexican herbs for treatment of Type II Diabetes Meletus (T2DM) in patients in Mexico	Medicinal herbs for self-reported anxiety or depression in Australia; chamomile, echinacea, gotu kola, passionflower	Medicinal herbs for obesity management; ginger, hibiscus, papaya seeds	x
Idea D: Barriers to Herbal Accessibility	Brendler et al., 2021	Netzer et al., 2021	Xiong et al., 2021	Zhang et al., 2021	x
	Regulatory barriers to herbal accessibility in the United States	Benefits to focusing on plants as a serious form of medicine and increasing accessibility globally	Medicinal herbs for COVID-19; regulations that prevent health claims from being made	Different environments effect growth and metabolic makeup of medicinal plants	x

APPENDIX B: ACTION PLAN MATRIX

Aims / Objectives	To determine what motivates people to study Western herbalism.
Rationale / Purpose	Desire to spread awareness of this healing modality to communities who need it most.
Objectives / Targets	Determine characteristics which lead people to want to study Western herbalism to gear awareness content towards motivations.
Activities / Milestones	Identify a group of students currently studying Western herbalism, conduct surveys on those students, and draw conclusions based on data collected from surveys.
People Involved	Herbal students and educators, myself, and the community.
Resources	Insider access to students and teachers, survey questionnaires, computer to analyze data.
Timeline	Over the course of 6 weeks: reach out to Mary Blue, interview Mary and survey students, critically analyze data and draw conclusions, develop poster presentation, and present findings.
Success Criteria	Was I able to gather the information needed to determine what factors bring people to Western herbalism? Yes.
Standards of Judgement	Did I gather information which could prove useful in determining factors that drive people to study Western herbalism? Does this information provide potential for future action to increase awareness, participation, and education of Western herbalism amongst people?