Exploring Pathways to Integrating Traditional Medicine into Indigenous Public Health Programming: *Curandero* Services for Quechua Communities in Ayacucho, Perú

by

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BS in Sociology, University of California, Riverside, 2021

Submitted to the Graduate Faculty of the

School of Public Health in partial fulfillment

of the requirements for the degree of

Master of Public Health

University of Pittsburgh

2023

UNIVERSITY OF PITTSBURGH

SCHOOL OF PUBLIC HEALTH

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April 14, 2023

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The integration of traditional medicine into the global framework of Western biomedicine has been recognized by the World Health Organization as a critical strategy for increasing access to healthcare options and improving health outcomes for diverse populations that do not possess the resources to access conventional biomedical care. The WHO 2014-2023 Traditional Medicine Strategy identifies key objectives and directions for integration of traditional medicine, such as the implementation of national policies and regional public health programs, but does not specify evidence-based mechanisms for the design of these integrated programs. Public health programs are very versatile and adaptive to the needs of communities and are a useful strategy for delivering healthcare services, improving healthcare access, and population health outcomes. Using the example of *curanderismo*, a diverse traditional healing system found across Latin America, this paper will describe the evidence-based development of a detailed program plan for Quechua communities in Ayacucho, Perú and examine the elements that are essential to the successful community-centered implementation of the program.

Table of Contents

List of Tables

List of Figures

Preface

Acknowledgements

I would like to thank my committee, my family, and my friends for their guidance and support throughout this process and their continued encouragement for my passions within public health.

A special thank you to Jaelyn and John, for being with me and continually inspiring me through every step of this project from start to finish.

List of Abbreviations

Community health center (CHC)

Evidence-based intervention (EBI)

Health Belief Model (HBM)

Knowledge, attitudes, and beliefs (KAB)

Social Ecological Model (SEM)

Traditional medicine (TM)

Traditional & complementary medicine (T&CM)

World Health Organization (WHO)

1.0 Introduction

The synthesis of traditional medicine and modern medicine is not a novel concept. The use of traditional medicine and alternative health practices has persisted throughout the worldwide acceptance and adoption of Western biomedicine model, leading to the recognition of its therapeutic value and the development of alternative, complementary and integrative medicine models to be used alongside or in place of the conventional approach. Integrative medicine has massive implications for public health applications, as it approaches health from holistic and multi-level perspectives, provides a wide range of therapeutic options, and places emphasis on preventive care. As health systems across the world seek to implement new or innovative means of providing healthcare to populations and expanding healthcare access to all, integrative medicine shows promise in supporting these goals.

Integrative medicine encompasses the use of a wide range of healing systems and practices, with broad and varied applications to all levels of health. It draws on biomedical and traditional medicine/ethnomedical research, has its own field of research, and encourages development of systems thinking approaches to health. It recognizes the need for synthesis of healing methods and systems for wide-reaching impact. Typically, integrative medicine is provided by health centers as a supplement to standard healthcare, is not often prioritized or advertised to individuals seeking care and is not often considered as an option for population health. If integrative medicine is viewed as a broad strategy by which public health issues can be addressed, rather than a subfield of medicine, its strategic and systemic use could potentially bridge the gaps between healing systems, enhance quality of healthcare, and provide more options and access to healthcare for diverse populations through various approaches. One such

approach where integrative medicine can be applied is public health programming. Public health programs are an extremely versatile and adaptable method of delivering healthcare to specific populations for either specific or a wide range of diseases and health conditions.

1.1 Research Question

The following research question stems from the public health topic of interest:

What elements should be considered when designing public health programs that integrate traditional medicine for indigenous populations?

1.2 Objectives

Based on the premise of the research question stated above, the objectives of this thesis are:

1. To outline a conceptual understanding of traditional medicine, describe a particular traditional healing system, and discuss integration of interdisciplinary perspectives to global health.
2. To design a public health program that is centered around an indigenous community's health needs, existing health beliefs and practices, and cultural awareness.
3. To discuss the key elements and strategies by which a public health program integrates traditional medicine.

2.0 Background

2.1 Medical Anthropology's Contributions to Global Health

Although a relatively new discipline in the field of anthropology, medical anthropology has significantly contributed to our understanding of human health and illness across time and region through a wide range of perspectives beyond the modern scientific and empirical evidence-based approaches. Medical anthropology is defined as "the study of health, illness, healthcare, and related topics from a broad anthropological perspective" (Wiley & Allen, 2020). The discipline draws upon social, cultural, biological, and linguistic anthropology to understand the factors that influence health and wellbeing, the experience and distribution of illness, the prevention and treatment of sickness, healing processes, the social relations of therapy management, and the cultural importance and utilization of pluralistic medical systems (Wiley & Allen, 2020). Medical anthropologists use a cross-cultural approach to investigate patterns of disease, variations in response to disease and draw relations between a multitude of factors. These factors can be social (social arrangements, subsistence practices, economic resources, gender roles, religious practices); ecological (climate, altitude, plants, animals); or biological (genes, age, sex, immunological competence).

In application, medical anthropologists carry out the following functions in their work (Krier, 2021; Manderson, 1998):

1. Exploring how culture relates to health, illness and disease;
2. Describing and translating local concepts of illness and treatment relevant to assist in disease prevention and control;

3. Identifying structural and conceptual barriers to prevention, testing and treatment compliance; and
4. Emphasizing the "context" of medicines.

Medical anthropology during the mid-20th century was centered primarily around the fields ethnomedicine and international/global health, with an emphasis on practical application to designing, implementing, and evaluating health programs (Wiley & Allen, 2020). The key concepts that are discussed in medical anthropology provide a foundational framework to approaching global health issues, which is centered around the incorporation of multicultural perspectives. A distinctly useful approach in medical anthropology is the biocultural approach, developed by anthropologists Andrea S. Wiley and John S. Allen, which examines "the social, ecological, and biological aspects of health issues, and how these interact within and across populations" (Wiley & Allen, 2013). This approach first presents biological information on human health processes and health conditions and then analyzes these processes and conditions as they vary between populations through the lens of evolutionary, historical, and cross-cultural perspectives. The purpose of the biocultural approach is to provide a holistic anthropological analysis and the scope is global, inclusive of cultures across the world. The approach's concepts overlap with that of the Social Ecological Model, which is used in public health to identify the factors related to population health problems at multiple levels (individual, interpersonal, community, and societal) and develop methods for disease prevention and health promotion that target action at those levels (CDC, 2011). The SEM informs community engagement practices that improve health promotion and research through nine areas of positive impact (CDC, 2011). The SEM encompasses all factors that affect human health—individual (biological) factors, the community-based sociocultural differences that shape norms, attitudes, beliefs, knowledge,

behaviors, and interpersonal interactions at all levels (culture), and ecological and environmental characteristics. The biocultural approach states that humans do not exist in isolation from their ecological and sociocultural milieu, which has been shaped by various historical processes and thus impacts health processes and outcomes among various populations and across time.

However, a key concept of the biocultural approach that the SEM does not employ is history, which refers to both the evolutionary and historical events that have impacted human physiological and biological processes, exposure to disease and sickness, and changed environments across time. History is critical to understanding the roots and development of cultural behavior (Wiley & Allen, 2013). Seeing how the biocultural approach of medical anthropology intersects with the core concepts of public health and provides deeper insights into the social determinants of health through the lens of culture and human history, the perspective should be actively incorporated into public health education and applications as public health professionals move to create systems of health that center diversity and equity.

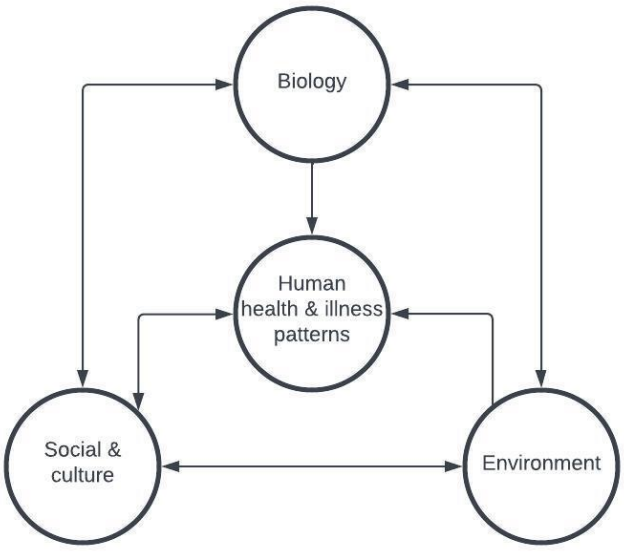

Figure 1 Biocultural Approach

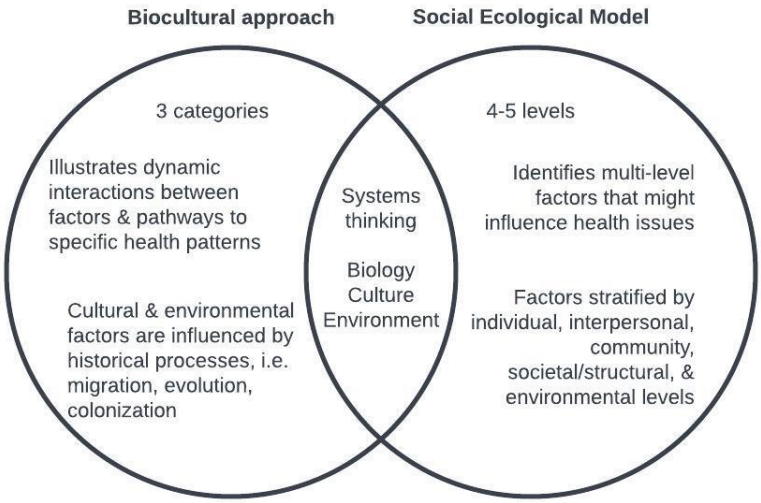

Figure 2 Biocultural Approach versus Social Ecological Model

The biocultural approach applies a critical, context-based perspective to understanding health process, states of illness and sickness, and the development of disease patterns and symptom presentation within a population; by extension, this approach also explains the history and development of healing systems of various cultures around the world. Every set of healing practices and treatment models has a cultural component attached to it that influenced its development as a response to the presentation of disease and sickness patterns within particular environments, including Western biomedicine. Prior to the development and proliferation of Western biomedicine as the global standard for health practice, many communities and cultures had their own systems of healing that are unique to their environment and demographic factors, which are collectively known as "traditional medicine". Many rural-based and indigenous communities throughout the world continue to use traditional medicine as their primary healthcare approach and increasingly more people in developed countries are looking to alternative options to healthcare, thus driving the demand for traditional & complementary

medicine to be integrated into health systems (World Health Organization, 2019; World Health Organization, 2014). Medical anthropology research contributes to global health knowledge by expanding on its foundation of ethnomedicine, identifying traditional health systems, exploring the beliefs and practices of different peoples, and discussing the factors that influence/shape the development of these practices. Using this research, public health practitioners can identify facilitators and barriers to global healthcare access and design integrative implementation strategies to apply within national, regional, and local health system frameworks.

Target 3.8 of Sustainable Development Goal 3 (ensure healthy lives and promote well-being for all at ages) is to "achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all" (United Nations). The WHO Department of Integrated Health Services (IHS) recognizes this target and aims to support countries to provide equitable access to integrated health services (including promotion, prevention, curative, rehabilitative and palliative); to ensure these health services are effective, safe, and people-centered, and based on a primary health care approach (World Health Organization, 1999). One of the strategies employed by IHS to achieve this mission is the establishment of the Traditional, Complementary, and Integrative Medicine (TCI) unit to globally coordinate to "harness the potential contribution of traditional, complementary, and integrative medicine to integrated health services, universal health coverage and health-related sustainable development goals" (World Health Organization, 2014). In 2014, the WHO launched their updated Traditional Medicine Strategy 2014-2023, addressing past challenges and providing new direction for traditional medicine strategies in 3 areas. The 2019 Global Report on Traditional and Complementary Medicine assesses the global status of implementation of national frameworks

for TC&M; regulatory status of herbal medicines; and practice, providers, education, and health insurance at the midpoint of the TM strategy's implementation.

So, there is certainly a demand for traditional medicine and the WHO has made serious efforts to collect data on TM practices, uses of TM, national frameworks for integration, herbal medicine regulations, practitioner status, and education. Based on this demand, one of the strategic objectives listed by the WHO Traditional Medicine Strategy 2014-2023 is "to promote universal health coverage by integrating T&CM services into health care service delivery and self-health care" (World Health Organization, 2014). To accomplish this objective, the document recommends a strategic direction of capitalizing on the potential contribution of T&CM to improve health services and health outcomes and outlines several action items for member states, partners, and stakeholders:

1. Recognize TM as a resource that could contribute to the improvement of health care services, particularly PHC, and that TM is relevant to improved health outcomes.
2. Explore how T&CM might be integrated into the national health service delivery system based on national capacities, priorities, relevant legislation, and circumstances, and on evidence of safety, quality, and effectiveness.
3. Encourage the development of appropriate health facilities for T&CM public health services by ensuring key health system elements are in place for integration.
4. Ensure equitable consideration for safe and effective T&CM in existing insurance coverage and in national health reimbursement models.

While these actions are useful in guiding direction for integration of T&CM into healthcare systems, it does not specify the mechanisms on integration, specifically regarding public health programming.

2.2 Traditional Medicine

Traditional medicine is the broad term for the diverse range of health practices of communities across the world, defined as the "sum total of the knowledge, skill, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness" (World Health Organization, 2019). The term is often interchanged with "indigenous medicine," "folk medicine," or "traditional healing system," all of which are correct and point to the native origins of a particular healing system. Ultimately, traditional, indigenous, or folk medicine is to be understood as a healing system that is situated within the context of a particular environment and unique history, whose interactions with the individual's body and ethnic group's physiological dispositions lend itself to the creation of "a set of beliefs that has a shared social dimension" that guide what people do when they become ill. (Wing, 1998). Some examples of traditional medicinal practices that are well known across the world are Ayurveda, traditional Chinese medicine, Jamu (Indonesia), and unani.

A technical project report on traditional health systems in Latin America and the Caribbean conducted by the Pan American Health Organization and World Health Organization in 1999 presented definitions and broad conceptualization of the term that varied by country in the region. Respondents from Costa Rica described traditional medicine as "the activity of the native groups who relate to their region's natural resources; the relation between medicine and magical-religious practices and the plant species belonging to their religion." From Guatemala, TM is "the application and wisdom belonging to the native population of a nation based on their own cosmovision to solve the most common health problems" or "the permanent medicine

syncretized by the healers of a same culture from generation to generation". And from Mexico, it is "a set of medicinal practices based on ritual, mysticism, and magic heavily influenced by pre-Hispanic medicine that is sometimes syncretized with elements of Catholicism and/or allopathic medicine […] mirror[ing] the cosmovision of the group to which it belongs" (World Health Organization 1999). These concepts of traditional medicine highlight the common elements among various healing practices as originating from the native cultures of these countries and being rooted in a larger cosmovision.

It should be noted for clarification purposes that there exists a distinction between traditional medicine and complementary & alternative medicine (CAM): CAM refers to all health practices that are not part of the conventional Western biomedicine approach and are either used alongside or in place of biomedicine. CAM includes practices such as acupuncture, chiropractic, homeopathy, naturopathy, and osteopathy, among many others. The term can encompass traditional medicine practices that are used alongside or in place of standard treatment. Ultimately, traditional medicine refers to comprehensive healing systems of a particular origin and history rather than specific, individual practices that are drawn from various sources and combined to create individualized approaches. An anthropological analysis of traditional healing concepts notes that "folk healing methods are often confused with contemporary, alternative, or New Age health practices. Although they share much in common, such as an emphasis on herbal and spiritual remedies, the key consideration that defines folk systems is their history of tradition. Many folk healing systems have endured over time and space and are rooted in a body of knowledge that is customarily passed on orally" (Wing, 1998).

2.2.1 Common Elements & Key Characteristics

Despite variations in terminology, definitions, concepts of health and disease, social norms and attitudes attached to the differing states of health, types of practitioners, practices, and remedies, all traditional health systems across the world share several key characteristics that are distinct from the biomedical approach. These characteristics include:

1. *Holistic approach*. Traditional healing systems usually consider the whole person, including physical, mental, emotional, spiritual, and social aspects of health.
2. *Natural remedies*. Many traditional healing systems use natural remedies, such as herbs, plants, and other natural substances, to promote health and treat symptoms of illness and injuries.
3. *Dietary practices*. Traditional health practices often include dietary guidelines, such as avoiding certain foods, or consuming certain foods in specific combinations or quantities.
4. *Mind-body practices*. Many traditional healing systems use mind-body practices, such as meditation, yoga, and breathing exercises, to promote relaxation and reduce stress.
5. *Traditional healing techniques*. These may include massage, acupuncture, cupping, and other techniques that have been used for centuries to promote healing and relieve pain.
6. *Emphasis on prevention*. Traditional health practices often focus on preventing illness through healthy lifestyle choices and practices, rather than just treating symptoms once they appear.

7. *Community involvement*. Traditional health practices often involve the community, with elders or healers providing guidance and support for individuals and families to maintain health and prevent illness.

Beyond these elements within concept and practice, traditional medicine is additionally characterized by the following qualities:

1. *Adaptation to historical development.* Traditional healing systems are defined by the cultural and historical development that groups of people belonging to or residing in specific regions experience across time. As historical events such as migrations, the establishment of trade routes, or the spread of religions have occurred, humans exchanged cultural ideas, norms, and practices and incorporated them into existing cultures. Traditional healing methods have incorporated and adapted beliefs and concepts from other cultures as these historical processes occur.
2. *Oral transmission of knowledge*. The knowledge and wisdom from centuries of practice is passed down from generation to generation by oral tradition, which is primarily understood as a cultural manifestation keeping these groups alive across history (Word Health Organization, 1999). The formal, written documentation of traditional methods is a more recent practice, often undertaken by academics and researchers.
3. *Synthesis of the spiritual and/or religious*. In the relationships individuals have with themselves, their communities, their environment, and the universe, there must be balance and harmony (World Health Organization, 1999). An imbalance in these relations and dynamics leads to sickness and poor health. Traditional medicine is, thereby, linked to a larger cosmovision and spiritual/religious concepts that shape

collective perceptions of health and illness, characterize typical diagnoses, and inform the development of healing methods. Some traditional health practices will incorporate spiritual and religious elements such as rituals, prayer, and symbolism that are specific to particular religions.

4. *Relationship to the environment*. Health is the result of dynamic interactions between the physical body and the environment; when harmony and balance between the two are not present, illness results. This concept can be linked to the theory of disease and the epidemiological triad, which states that environment determines where certain diseases come from, how they interact with the biology of individuals and present symptoms, and the treatment options that are regionally available for use. A particular traditional healing system is typically identified by its geographical and environmental constraints.

All of the above elements and characteristics define the fundamental ways in which traditional medicine is different from Western biomedicine. Traditional medicine is broad and adaptive, with loosely defined conceptions that are subject to cultural shifts and very responsive to environmental and historical changes; yet they are also simultaneously "self-reinforcing and resistant to change from external forces, whereas their own internal models "provide acceptable explanations that account for observation and event" (Wing, 1998). Western biomedicine is clearly defined in theory and rooted in the scientific method, and consisting of rigorous and precise practices that withstand cultural shifts in perceptions and external influences. While the rigor and structure of biomedicine has contributed to the advancement of medical research and therapies for complex health issues, it has also created resistance against the use of other systems of healing.

2.2.2 Practitioners, Shamans, & Their Roles

Practitioners of traditional medicine are known to their communities as healers. Healers are designated within societies as their own special vocational or spiritual class that mark them distinctly against the rest of general population, with cultural variations in the ways one becomes a healer (Wiley & Allen, 2020). Modern healthcare providers are a type of healer with their own distinct initiation rites and pathways to knowledge, training, and practice that are aligned with a newer culture of healing, rooted in scientific knowledge, and shaped by professionalization of occupations. However, an important trait that is common among traditional healers, across cultures, is the element of the divine. New healers are chosen by the elder and experienced healers of communities through divinatory processes, such as dreams, visions, precognition, or epileptic episodes. Within traditional healing systems, the spiritual element is deeply intertwined with the conception of health. Therein, the special quality present amongst many traditional healers is that those who hold the power to heal are imbued with a spiritual capability and conversely, only those who are spiritually marked (thus bestowing upon them the ability to enter altered states of consciousness or realms that are not bound by material aspects) are capable of healing. Once initiated, experienced healers pass on their knowledge of healing concepts and practices to their apprentices through guided practice, which is the most important way to learn traditional medicine as this mechanism guarantees generational transmission of knowledge (World Health Organization, 1999). This particular initiation and learning process of becoming a healer is more commonly recognized among indigenous cultures of the Americas. In other regions of the world, divinatory processes are not necessary for initiating new healers; healers might step into their roles following a personal therapeutic experience or learn by means of community shared knowledge. During the 20th century, various institutions for the formal

education and practice of traditional medicine have been established in part due to the recognized importance of preserving historical traditions and in order to adapt traditional medicine within a more formal educational framework. Like physicians, healers may choose to specialize and focus on a particular subfield, such as midwifery, herbalism, or emotional/spiritual work. Healers employ a wide array of diagnostic practices, therapies, and treatment regimens incorporating both naturalistic and spiritual/magical elements that may overlap across specialties; the overlapping of methods addresses the holistic connection between mind, body, and soul and how a healer might draw on methods from a differing specialty to correct any imbalances and ensure health is achieved on all levels. Parallels can be drawn between the specialties of biomedicine and traditional medicine, which demonstrates the potential for interconnectedness between the subfields of biomedicine and how the gaps between physical, mental, emotional, and spiritual health conditions might be bridged by prioritizing that holistic connection.

Healers play complex, interconnected roles in society. The role of the healer goes beyond simply treating or curing an illness; their aims are to heal individuals and communities at all levels, to restore balance and harmony in the complex relationships between self, others, and the environment, and to guide individuals towards a life of balance and well-being. They are not isolated from participation and involvement in other arenas of life, and it is through their social & cultural significance that they help shape the broader social paradigms and underlying spiritual and cosmological beliefs that guide societal development. Their ability to heal on all levels gives them considerable status and honor in society.

One type of traditional healer that is worth calling attention to is the shaman. To understand the role of the shaman in traditional medicine, it must first be understood that shamanism is not a belief/faith system or a form of magic, but rather a path to knowledge

through rituals, pilgrimages, vision quests, trials, essentially practice and experience (Cloudsley, 1999). Shamans are practitioners who enter altered states of consciousness and journey to different dimensions beyond the physical plane of existence, where they come into contact with powerful spirits (Hendrickson, 2015). It is during these "trances" that the purposes of healing and mystical insight are revealed, which are then taken back by the shaman to heal their people through restoration of balance (Hendrickson, 2015). The shaman's abilities and ways of knowledge demonstrate how the process of healing extends beyond the physical aspect and requires reconnection and integration of the mental, emotional, and spiritual to achieve equilibrium and therefore, health. While all shamans are traditional healers, not all traditional healers are considered shamans. Shamanism can be found all over the world across many cultures but is most frequently associated with the indigenous cultures of North, Central, and South America.

2.2.3 Why Examine Traditional Medicine?

Traditional health systems reflect thousands of years of inquiry, investigation, experimentation, gathered knowledge, application, and wisdom in relation to health. Each culture developed their own methods and created their own knowledge base to approach both common and unique health problems. Traditional medicine comprises the collective historical efforts of humans to understand our bodies' interactions with the environment, both on individual and community levels, and has sustained our existence thus far. While these practices may be categorized as complementary medicine nowadays, "they play a critical role in serving the needs of people living in both industrialized and non-industrialized countries" (Chavez, 2016; World Health Organization, 2013). Even as the global health profile has changed significantly in the last

two centuries and modern, empirical evidence-based systems of health have taken precedence in the prevention, diagnosis, and treatment of disease and illness, traditional medicine continues to provide a foundation and perspective by which modern health problems can still be approached. This idea is acknowledged in WHO's 1999 technical report: "It is necessary to view traditional medicine within the context of the healthcare model in which it is found so as to be able to understand its current development in various geographic and cultural contexts, the way in which it adjusts to its environment, and finally, to identify the types of healthcare services available" (World Health Organization, 1999). Understanding the role traditional medicine "plays in the provision of healthcare services for indigenous and rural sectors, as well as other population groups" (World Health Organization, 1999) is essential to addressing the scaled demand for diversified, culture-specific medical care, improvement of provider-patient relationships, and identifying mechanisms for provision of health services. One of the major obstacles faced by the current global healthcare system, composed of international-level organizations and governments, is the lack of healthcare coverage affecting millions of people. Implementing Western biomedicine into countries with high rural and indigenous populations is often an issue of operating in the midst of complex economic factors and "difficulty in adjusting to the social realities of the countries and peoples that healthcare programs are attempting to serve" (World Health Organization, 1999), thus designating traditional medicine as a critical resource towards increasing healthcare access and improving population health outcomes through equitable means.

2.2.4 Traditional Medicine's Relationship with Western Biomedicine

Traditional medicine is typically viewed to be operating in conflict with biomedicine, as interfering with the progress of modern medical research and treatment due to its inclusion of spiritual aspects and use of non-technical methods. Conversely, biomedicine approaches health based on the theory of disease and empirical evidence obtained by the scientific method of investigation, which rejects the holistic and spiritual (and sometimes, magical) premises of traditional medicine. Traditional medicine remains holistic, looking at interconnections within a larger system, while biomedicine has gravitated towards individualization and specialization. However, these two approaches to medicine rarely exist within their own spaces and given the context, TM and biomedicine can meet various health requirements for a population. Medical pluralism is the concept of "the coexistence of differing medical traditions and practices grounded in divergent epistemological positions and based on distinctive worldviews" (Cant, 2020). This can be found more commonly in developing countries where medical infrastructure is often inadequate and availability of health providers is limited (which leads to low quality healthcare and health service delivery), and is increasingly becoming part of the health landscape in developed countries. In 1999, the WHO asserted that "traditional medicine must be understood as a system in itself that is linked to each country's global healthcare system" (World Health Organization, 1999). As globalization of healthcare continues, health information becomes more widely available, and attitudes towards alternative and complementary health practices shift, it would serve a greater purpose in learning from and building upon older traditions of health create and enhance pluralistic paradigms to approaching global health problems that are interconnected with issues of social and environmental concern.

Traditional healing systems across the world have been incorporated into modern medical & public health frameworks in both research and practice. However, little attention has been given to *curanderismo*, a rather unique yet understudied traditional healing system that is found across several Latin American countries. The result of historical events and cultures interacting, *curanderismo* presents itself as a prime example of a system that incorporates healing concepts and methods from various origins, fluid and responsive to external conditions and coexisting with the standard medical framework. For that reason, *curanderismo* has been chosen as the specific traditional healing system for the application of program development for an indigenous population.

2.3 *Curanderismo*

Curanderismo is a diverse traditional healing system found all across Latin America. The term is derived from the Spanish word *curar*, which means to heal. It is a syncretic tradition, composed of many healing concepts and philosophies and elements of Catholicism and indigenous spirituality, and is part of the way of life in Latin America. It "has evolved throughout history and exchanges between cultural belief systems; therefore, there is not one true form that is practiced" (Chavez, 2016; Maduro, 1983). Mexico is the most well-known country to practice *curanderismo*, with many anthropological studies on the tradition focused there and its associations specifically with Mexican and Mexican American communities. However, the practice of *curanderismo* as the predominant modality of healing is not isolated to only Mexico; it is the general term that is used for the traditional medicine throughout Bolivia, Ecuador, Guatemala, and Perú. Every country, region, and ethnic group has unique variations in their

practices but there is a common social and cultural context that underlies the evolution of *curanderismo* as it is understood now.

2.3.1 History & Context: Social, Cultural, & Religious/Spiritual Factors

To understand the essence of *curanderismo*, one must acknowledge its complex history and sociocultural transformation that incorporates the religious, spiritual, and magical. *Curanderismo'*s roots lie in the indigenous epistemology of the Americas, which suggests that the body, mind, and soul are all intertwined and further connected with all beings and elements within the. The collective knowledge and ways of the various indigenous communities living in this region have come into existence through the interactions between environment, biology, and culture, which is a mechanism of survival. The environment, heavily forested tropical regions with high biodiversity, determines the prevalence of infectious diseases and the availability of natural resources. The biology and epigenetics of indigenous groups are changed by repeated exposure and acclimation to the environment, which determines the patterns of morbidity and mortality and the presentation of physical symptoms. The availability of natural resources, such as plants, herbs, and animals, shapes the context by which the medicinal properties of these resources were discovered and used to create medicines. With the arrival of European settlers and the establishment of colonial systems, the indigenous peoples of the Americas were introduced to new concepts of health and healing that are based in Greek and Roman theories and practices and early Arabic medicine; they were also introduced to Judeo-Christian religious beliefs, symbols, and rituals that included occultism and witchcraft. It is "in spite of th[is] history and [the] impact of colonization and oppression, [*curanderismo*] integrate[s] aspects of Catholic Christian traditions and beliefs, European and Indian/Mexican and African epistemology and

philosophy in their healing rituals, prayers, and treatment approaches" (Luna & Grayshield, 2020). If culture is a survival mechanism, then the adoption and adaptation of foreign European influences into the existing healing traditions were likely a means of survival. Now, these influences on religious/spiritual beliefs and healing concepts have fully syncretized and become part of the way of life in Latin America, with different ethnic groups absorbing these elements to varying degrees.

2.3.2 Beliefs & Concepts in *Curanderismo*

Despite the variations found in different countries and communities, there are some core concepts and beliefs that form the underlying philosophy of *curanderismo*.

1. *From indigenous epistemology, the view that the mind, body, and soul are connected and that human beings operate within a larger system of balance with all other beings, the environment, and the universe*. The mind, body, and soul are all "intertwined in their relation to well-being and health" (Luna & Grayshield, 2020). This cosmovision that sees human beings as operating in harmony with the self, their communities, the environment and earth, and the universe, forms the foundation for conceptualizing health. Illness is therefore the result of imbalance between the interrelationships of the body, soul, and environment. With "spirituality […] at the core of African and Native Indigenous healing systems", Indigenous healers understood "how alienation of the soul from the body caused fright, emotional discomfort, *susto*, soul loss, wounded spirits and a variety of maladies treated by both indigenous systems as cultures were dismantled and communities suffered loss and degradation" (Luna & Grayshield, 2020).

2. *From humoral medicine, the concept of the four humors in balance within the body.* Qualities of "heat" and "cold" are assigned to various states of disease, illness, and sickness and the sources of these qualities may vary from internal to external. Humoral medicine is often viewed as a response in relation to environmental factors. Specific prescriptions for treatment are made by healers to correct the humoral imbalances within the body and restore health.
3. *Illness as a fragmentation of self, a separation of mind, body, and spirit* (Ortiz, Davis, & McNeill, 2008). [Mexican] curanderos understand health and illness as a manifestation of an interactive process between three main dimensions of regulatory processes (spirit, body, and soul); the religious and/or spiritual dimension, the affective-emotional dimension, and the somatic processes of health and illness. (Zacharias, 2006). The mind and body are believed to be inseparable, with no dichotomy existing between emotional and somatic illnesses (Salazar & Levin, 2013).
4. *Syncretization of Catholicism*. Catholicism was introduced to indigenous populations by the Europeans during the Colonial Era, with majority of them eventually converting and adopting religious practices. Catholic symbols, imagery, and rituals are frequently used to invoke religious-based and spiritual healing though alignment with higher powers (Luna & Grayshield, 2020).
5. *Humanistic values*. Particularly in modern applications to mental and behavioral health, the humanistic values of *curanderismo* have become especially important to acknowledge as guiding principles for the healthcare field. These values include humanity, empathy, personalism, engagement in heart-to-heart conversations, self and

community empowerment, respect for traditional wisdom and knowledge, and fostering of relationships (Chavez, 2016).

2.3.3 Practices of *Curanderismo*

The beliefs and concepts of *curanderismo*, embedded in the larger syncretized culture, inform the healing practices that are part of the tradition. These healing practices, therapies, and treatment methods are categorized broadly, with variations depending on the region of practice.

1. *Diagnostic methods*. The diagnostic methods of *curanderismo* are of a holistic nature, making use of physical, herbal, symbolic, and spiritual processes, and vary depending on the region of practice. Some diagnostic methods include egg cleansing and spiritual rituals. In Perú, *cuy*, or guinea pig, is used to diagnose spiritually related illnesses (Cloudsley, 1999).
2. *Herbal remedies*. Herbal remedies are a cornerstone of traditional medicine. In maintenance of relationships with the environment, indigenous communities of Latin America developed various treatments and remedies that alleviated and/or cured symptoms of infectious diseases and health conditions that were unique to the specific population in the context of their specific environment. This was done through years of observation, investigation, and experimentation, ultimately leading to the creation of an oral repository of this knowledge that is passed down from generation to generation. Herbal preparations include teas, salves, ointments, tinctures, oils, and powder capsules and treat a variety of ailments ranging from cold, cough, sore muscles, burns, acne, stomach & intestinal problems, arthritis, cancer, HIV, and diabetes (Tafur et al, 2009). One notable example of such medicine is the use of

cinchona, which contains the chemical compound quinine, by the Quechua people of Perú for treatment of malaria.

3. *Diet*. If internal and external balance is key to health, then diet is one of the methods by which internal balance is maintained. In application of the humoral theory, an imbalance that is caused by some physical or emotional condition, nature of relationships, or abrupt change of temperature needs to be restored. Certain activities are designated as either "hot" or "cold". Within the context of hot and cold properties of foods, people are encouraged to eat foods that are hot or cold in essence, not in temperature, in order to maintain equilibrium in the body and regulate the amount of heat or cold (Tafur et al, 2009; Avila, 1999). Herbs and plants are also part of a traditional daily diet and are used in Mexican cooking. Spices, herbs, fruits, and vegetables, such as tomatoes, papaya, onions, potatoes, garlic, cilantro, chocolate, rosemary, mint, cumin, oregano, cinnamon, and chamomile, are all believed to have medicinal properties and are part of a nutritious diet (Tafur et al, 2009; Torres and Sawyer, 2005).
4. *Bodywork*. For conditions that are physiological in nature, bodywork techniques such as massages, physical therapy, and bonesetting might be employed to relieve pain and discomfort, encourage movement of bodily processes, and restore the body to its original state.
5. *Prayer, rituals, symbolism, and occult/witchcraft*. The use of prayer, rituals, and symbolism are based in that of indigenous spiritual practices and Catholic religious practice. Rituals and symbols vary by region and cultural significance; for example, in Mexico, amulets, imagery of saints, candles, and incense are commonly used

(Tafur et al, 2009). There is some debate around the use of witchcraft, as *embrujada* exists as a diagnosis in some regions of Latin America, while *brujería* is practiced as a form of healing within *curanderismo* in other regions.

2.3.4 *Curanderos*

A practitioner of *curanderismo* is known as *el curandero*, or *la curandera* if female. *Curandero/as* have "distinct knowledge in and tools for curing, caring, or healing individuals" (Chavez, 2016). The knowledge of healing is acquired through educational means such as apprenticeships and guided teaching, but emphasis is placed on the person's innate (and spiritually bestowed) talent to heal others (Tafur et al, 2009; Torres & Sawyer, 2005).

Given that *curandero/as* understand health and illness as a manifestation of an interactive process between three main dimensions of regulatory process (the religious and/or spiritual dimensions, the affective-emotional dimension, and the somatic processes of health and illness) (Zacharias, 2006), they seek to provide treatment or interventions that include the whole person. All of the senses and psychological resources of the person are utilized to bring about a cure or treat an illness. The *curandero*/a employs the use of symbols, objects, rituals, and herbs to invoke internal processes of the person that support the overall goal of healing. Unlike Western medicine's tendency to focus in on one area of healing, the methods of *curanderismo* pull in all areas, allowing the individual's physical, mental and spiritual elements to create growth and healing (Torres & Hicks, 2020).

Curandero/as have multiple specialties of practice (Avila, 1999; Torres and Sawyer, 2005). They usually work on many realms including the physical, mental, emotional and spiritual in order to diagnose and cure illness (Avila, 1999). Specialties may be distinguished by those

who work on the body through massage (*sobadoras*) or bonesetting (*hueseras*); have knowledge in gathering and prescribing medicinal herbs (*herbalistas*); and work through prayer, meditative practices, and channeling spirits (*espiritualistas*). A *curandera* may specialize in midwifery (*partera*). A curandera who has expertise in all areas may be referred to as a *curandera total* (Chavez, 2016). Although a curandera may specialize in one or more areas, the practice is more likely overlapping because of the holistic nature of working with clients (Chavez, 2016).

Curanderas play a critical role in helping individuals maintain human values, interest, and dignity, especially in times of personal and communal distress or suffering. The individual, not an objective diagnosis, plays the central role in their healing. Due to the availability of modern technologies and increased opportunity for cultural exchanges, *curanderas* can further integrate other forms of healing, including techniques stemming from Eastern philosophies and Western evidence-based therapies, to address clients' inseparable mind–body–spirit connection. The role of the *curandera* extends to a medical practitioner, counselor, and spiritual leader all in one (Chavez, 2016).

2.3.5 Applications of *Curanderismo*

Current applications for *curanderismo* within contemporary health practice are primarily directed towards mental health and psychiatric treatment models. There are a handful of cases within the last century where *curanderismo* has been adapted to public health interventions in Latin American countries that are not focused on mental health, despite growing evidence that incorporation and utilization of traditional medicine is a critical strategy for delivering healthcare to marginalized and under resourced populations.

The rationale for selecting *curanderismo* for application to public health programming is that the collective healing practices form a core traditional healing system throughout Latin American countries that is recognized among inhabitants of both urban and rural regions. Designing a public health program that integrates *curanderismo* for an indigenous community in a Latin American country would be a promising strategy for delivering healthcare due to the ability to customize a program based on region-specific characteristics of *curanderismo*. Additionally, *curanderismo* is an extremely adaptable health tradition, which implies a potential openness to inclusion of biomedical concepts or collaboration with medical practitioners.

2.4 Health Beliefs

Anthropology defines culture as patterns of behavior that are common to a group, all of which includes ideas, beliefs, values, social norms, practices, and traditions that influence the arrangement of social structures and institutions within communities (Wiley & Allen, 2020). Health beliefs and practices are included within the scope of culture, as concepts of health are shaped and influenced by the cultural ideas and beliefs that are particular to each community across the world. Health beliefs refer to the constructs and perceptions that people hold regarding disease, illness, sickness, and methods of healing. Beliefs vary in their historical, geographical, and sociocultural context and thus influence the development of particular health practices and health behaviors within communities.

The Health Belief Model is a theoretical model that describes the interactions between health beliefs that influence health-seeking behaviors. The generalizability of the model means that it can be applied to any culture or belief system that influences an individual's or

community's perceptions of health and their related health behaviors. It consists of 6 constructs that are conceptualized as such:

1. *Perceived susceptibility*. Beliefs about the likelihood of getting a disease or condition.
2. *Perceived severity.* Beliefs about the seriousness of contracting a disease or condition, including consequences.
3. *Perceived benefits*. Beliefs about the positive aspects of adopting a health behavior.
4. *Perceived barriers*. Beliefs about obstacles to performing a behavior and the negative aspects (i.e., tangible and psychological costs) of adopting a health behavior.
5. *Cues to action*. Internal or external factors that could trigger the health behavior.
6. *Self-efficacy*. Beliefs that one can perform the recommended behavior.

Understanding health beliefs is crucial to developing an understanding of how and why people adopt certain health behaviors and practices and reject others, specifically among global communities whose traditional health practices differ from the standard biomedical model of treatment. As global & public health programs increasingly seek to enhance delivery of health services by applying cultural competency, it is important to apply models to these interventions that seek to understand the beliefs that underlie individuals' decision-making processes to accept or reject forms of healthcare. Despite the global hegemony of Western biomedicine as the standard model for diagnosis and treatment and the exponential advancements in medical research, the use of traditional healing systems across the world continues to persist. While patterns of behavior persist across time and generations, they are simultaneously dynamic as they are resistant, constantly interacting with and incorporating new behaviors (Wiley & Allen, 2020). Not only do these health beliefs and practices persist, but they also interact with an increasingly

globalized environment and culture. Rather than dismiss traditional medicine, it is far more constructive to appreciate, learn from, and incorporate it into public health approaches.

The states of health and sickness are not isolated from sociocultural processes and environmental factors; diseases and symptoms of illness present differently for individuals and communities and communities have developed their methods of healing in response to the respective cultural, historical, and environmental context. Perceived susceptibility and severity of diseases will vary based on the prevalence of infectious and chronic diseases in the region, the visible symptoms, and the assumed causes of diseases; these result as a function of biological and environmental factors. Those living in more remote, rural regions of countries are more likely to find greater benefit in using well-known and accepted traditional health practices. Perceived barriers, such as low accessibility to treatment, high costs, or distrust of biomedicine, can impact an individual's cues to action and self-efficacy associated with the acceptance of biomedical practice. By analyzing the mechanisms of health beliefs and behaviors, public health practitioners can identify culturally relevant strategies and interventions for public health operations.

2.5 Designing for Integrative & Community-Centered Health Systems

Cultural diversity is a hallmark of global health work: providing healthcare to populations in different regions of the world, specifically LMIC, means that one is exposed to and will be constantly interfacing with socially and culturally diverse populations, their beliefs, and their ways of life. Acknowledging the link between diversity and widespread health inequities is a crucial aspect of designing effective health programs for these communities. A long history of

colonialism and institutional racism has impacted the health of global populations, typically those in LMIC and considered culturally diverse, through the creation of systems that imposed poverty and poor socioeconomic conditions, extracted resources, and implemented structural-level barriers to healthcare access. However, while creating structural level health disparities, colonial systems also established the foundations for tropical medicine and global health work. Indigenous populations in every region of the world, who have been historically the most impacted by colonialism, are considered one of the most socially vulnerable groups and face considerably poorer health outcomes due to the structural and systemic racism they continue to experience. In order to reduce the gap in health disparities and improve health outcomes for indigenous people, one of the ways to approach health equity in global health work is creating pathways to accessibility for healthcare. When Western biomedicine and evidence-based practice took precedence over traditional methods of healing, the paradigm of health prioritized scientific research and practice and dismissed indigenous practices as "illogical" and "pseudoscientific". However, with the development of the field of medical anthropology, the study of traditional medicine within the field of global health has been revived and the WHO has recognized the value of utilizing traditional medicine as a resource to serve populations living in developed countries since the 1980s.

Traditional medicine "plays a crucial role in health care for a large part of the population living in developing countries" and formed the "only health care system available for the prevention and treatment of diseases in different cultures" (Adekson, 2017). By analyzing culture's role in health, it can used along with holistic healing as two integral and prominent avenues of indigenous healing. Culture has multiple functions within the healthcare setting: 1) it affects interactions of indigenous healers and patients, bringing out self-awareness, worldviews,

and intervention strategies; 2) affects personal attributes of practitioner and nature of interaction that takes place in healing, counseling and medical relationship; 3) helps practitioner focus "on the patient or client within his or her cultural context, using culturally appropriate assessment tools, and having a broad repertoire of interventions"; and 4) affects professional beliefs, attitudes, knowledge and skills that are used individually, and professionally and within the community (Adekson, 2017). Culture provides their own interpretative frameworks, notions of authority, and standards of truth, which leads to invigoration of healing practices through the methods of various traditional healers that include sages, diviners, herbalists, soothsayers, and medicine men (Adekson, 2017; Kirmayer, 2012). Being healers that treat the mental, physical, social, emotional, psychological, spiritual, and family problems of their clients, "culture specific expertise" goes a long way in enhancing the positive relationship between healers and patients because of the dynamic relationship that ensues from being from the same environment and culture (Adekson, 2017). Ultimately, culture presents a broad range of strategies and practices for transforming health service delivery and increasing access to healthcare, functioning as a vehicle for integrating traditional medicine into Western medical practice.

2.5.1 Integrative Health

Integrative health is the coordinated integration of conventional/modern and complementary health approaches. It emphasizes pluralist interventions in different combinations with a focus on treating the whole person rather than isolating health conditions to specific body parts. Typically, integrative health is developed within existing healthcare system frameworks, with medical practitioners offering private services (National Institutes of Health). While the

integration of traditional health approaches is important within the standard healthcare setting, there is a need to expand into the national public health frameworks of countries.

The WHO's 2019 *Global report on traditional and complementary medicine* compiles information on T&CM policy, regulation status, products, practices, and practitioners for the purpose of gathering accurate, up-to-date information on T&CM frameworks, regulations, & practices in each WHO region; identifying gaps in knowledge; and identifying challenges and areas of need for successful implementation and integration of traditional medicine into the healthcare systems of countries. This information is key to supporting countries in generating evidence-based policies and strategic plans for integrative health.

Despite the proliferation of NGOs through globalization processes, national health systems, governments, and non-profits across countries struggle to fill the gaps in public & community health systems due to lack of resources, funding, and effective management. By looking to design public health programs that utilize existing traditional healing systems that are native to the region, the gaps in health outcomes, health disparities, and healthcare access, especially for marginalized and disadvantaged communities, could be mitigated. Not all regions possess the resources and labor capital to build medical infrastructure and pay medical professionals to provide services and are therefore more reliant on their traditional health practices.

Based on the information presented, it has been identified that one of the areas of need & improvement is public health program development that integrates traditional medicine into the standard healthcare system. Typically, integrative medicine is practiced by individual providers, whether they are physicians or traditional healers, within the modern healthcare structure but not often in the form of public health programs. Public health programs are an essential component

of healthcare service delivery and a great strategy. While policy frameworks and regulations provide structure for practitioners to operate in, public health programs are a mode of healthcare delivery that can reach larger populations, addressing disparities in health outcomes and health equity on a larger scale. Health programs are very versatile: they make use of various theories, models, and planning/implementation frameworks; they can be designed to target multiple aspects of healthcare, such as availability and accessibility of services, education, or infrastructure development; and they can be adapted to incorporate the sociocultural context of health for specific populations and center their needs. By framing public health programs as a strategy for integration, we can reach the goals of increasing healthcare access, improving health outcomes, and reducing health disparities in not only indigenous populations but other globally based populations as well. Chapter 3 will be focused on the development of a public health program that integrates *curanderismo* to provide comprehensive and integrated health services to indigenous communities residing in Perú.

3.0 Program Development

Public health programming is a critical component of public health practice, with the ability to serve many functions. Due to its versatility, designing a public health program to address relevant public health issues and meet the health needs of communities is an excellent strategy for delivering public health services and developing integrative community health systems.

This chapter of the paper will describe the program planning process for integrating traditional medicine into public health programs and present a proposal for such a program. This chapter will be divided into two parts: 1) the program conceptualization and operationalization, and 2) the program proposal. The conceptualization and operationalization will review the framework, underlying theories, and methods for health service integration that must be considered prior to designing the program. The program proposal will consist of a statement of need, program plan, and implementation plan, where the population will be identified, the needs of the community will be assessed, goals and objectives identified, and program activities will be described.

3.1 Program Conceptualization & Operationalization

Prior to program design, a public health program must be conceptualized and operationalized by selecting an appropriate planning & implementation framework, a guiding theory, and methodology for community engaged practice.

3.1.1 Framework

The PRECEDE-PROCEED framework is a comprehensive structure for designing, implementing, and evaluating public health programs through assessment of community health needs (Rural Health Toolkit, 2023). PRECEDE-PROCEED was developed specifically for use in public health, with the focus being on prevention measures and promotion of behaviors through community engagement. The framework operates on a set of assumptions regarding illness prevention and how community is an integral part of the healing processes, illness prevention, and health promotion (Community Toolkit, 2023):

1. Carrying out health promotion has to involve the individuals whose behaviors or actions you want to change, since health-promoting behaviors and activities are almost always voluntary.
2. Health is a community issue by nature.
3. Health is an integral part of a larger context, probably most clearly defined as quality of life, and it's within that context that it must be considered.
4. Health is more than physical well-being, or than the absence of disease, illness, or injury.

Based on these assumptions, PRECEDE-PROCEED presents two processes that comprise the development of a public health intervention. PRECEDE stands for Predisposing, Reinforcing, and Enabling Constructs in Educational/Environmental Diagnosis and Evaluation. PROCEED stands for Policy, Regulatory, and Organizational Constructs in Educational and Environmental Development. Each process consists of four phases (eight total phases) that make up the components of program design, implementation, and evaluation. Appendix A describes the phases of the framework and their respective functions.

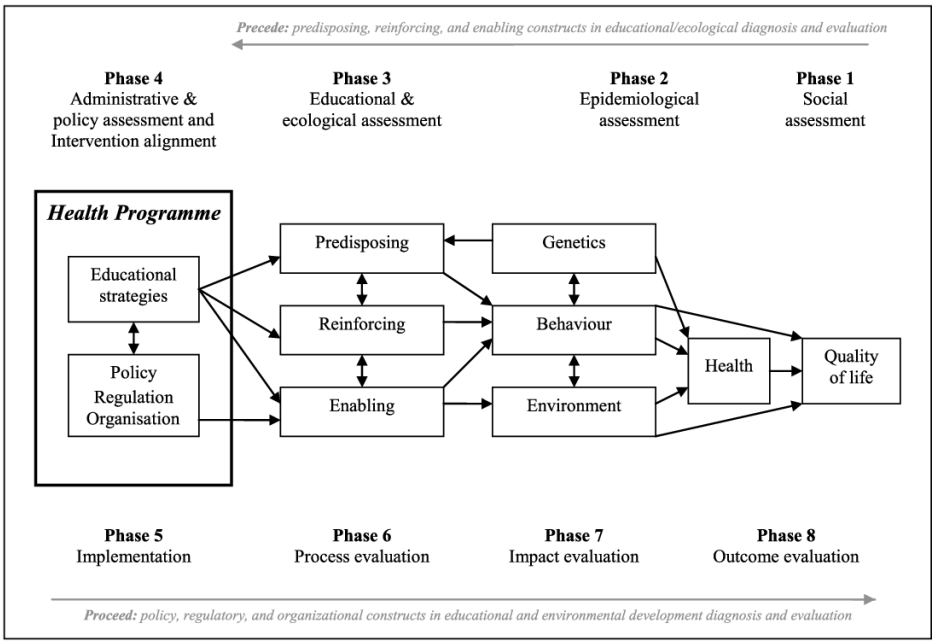

Figure 3 PRECEDE-PROCEED Planning Framework

PRECEDE-PROCEED is an appropriate approach to global health programming because it provides a blueprint for the process of conceiving, planning, implementing, and evaluating a community. It incorporates community engagement into its structure so that the intervention is not randomly designed without regard for community needs and wants or is carried out without attention to the specific context that impacts the target population, which would likely result in issues with acceptance and uptake of the intervention. Community engagement is especially important for communities that have been affected by historical oppression, discrimination, and exploitation as it entrusts to them ownership of the project and delivers a sense of empowerment. This, in turn, increases community support and chances of success, which is critical to program sustainability.

This framework was selected to guide program development because the structure is appropriate for analyzing the elements of health program design for diverse populations. It engages communities from the initiation point and thoroughly involves them in the processes of

planning and execution. There is an emphasis on identification of the constructs that inform the assessment, design, implementation, and evaluation phases, which allows for analysis of these community-specific elements of program planning. The PRECEDE and PROCEED processes operate as reverse processes of each other to examine all elements and constructs that affect or influence the effectiveness of a public health program; this ensures that no key elements are missing from conceptualization and planning. The mechanisms for operationalization are simplified by dividing the processes into distinct phases. It is also very adaptable in terms of selecting methods for conducting the assessments and evaluation processes. Therefore, PRECEDE-PROCEED is the ideal framework to apply to the development of this program.

For this program, each phase of PRECEDE-PROCEED has been linked to each section of the program proposal to demonstrate how the framework is being used to guide the program's design. The PRECEDE phases will be used as an outline in the statement of need and the PROCEED phases will be described in the program plan.

Table 1 Framework Phases

PRECEDE-PROCEED Phase		**Corresponding Section of Program Proposal**
Social assessment	→	Statement of Need - Goals/Outcomes - Social Assessment
Epidemiology assessment	→	Statement of Need - Epidemiology Assessment
Educational & ecological assessment	→	Statement of Need - Social Assessment
Administrative & policy assessment and intervention alignment	→	Statement of Need - Existing Policy & Interventions
Implementation	→	Program Plan

		- Implementation Plan
Process evaluation	→	Evaluation
Impact evaluation	→	Evaluation
Outcome evaluation	→	Evaluation

3.1.2 Theory

The underlying theories that will be applied to the development of this program are the Health Belief Model (HBM) and the biocultural approach from medical anthropology.

The Health Belief Model explains and predicts people's health behaviors (i.e., preventive actions, health seeking behavior, and adherence to treatment plans) on the basis that health behaviors are influenced by their beliefs and perceptions about disease and illness, barriers and facilitators to adopting behaviors, and self-efficacy. This model is particularly useful for informing global health programs and/or programs for diverse populations as health beliefs vary greatly by culture. Culture is a very important factor that shapes and influences perceptions of illness and beliefs about certain diseases, as demonstrated in *curanderismo*. Cultural beliefs on health, illness, methods of diagnosis, and treatment options are continually reinforced at the interpersonal and community level, influencing the health behaviors that are taken by individuals who actively participate in the culture. In Latin American countries, where *curanderismo* informs the particular treatments and practices that are traditionally used to treat the illnesses, individuals reinforce the perception of benefits of the treatments and practices and the self-efficacy associated with undertaking the behaviors. Culture additionally shapes the development of societal structures, such as health systems and medical institutions, through ideas, values, norms, and beliefs that contribute to the dynamics between individuals and health providers.

Historically, culture has created conflicting dynamics between individuals and Western biomedicine practitioners in Latin America due to perceptions on the efficacy and risks associated with biomedical treatment and perceptions of benefits associated with traditional medicine. This program utilizes HBM as the underlying theory to identify the leverage points where cultural beliefs can help the target population adopt an intervention in a community context. HBM describes specific intervention modes to leverage cultural beliefs in the adoption of desired health behaviors; using the beliefs of *curanderismo* regarding particular health practices to adapt existing practices might assist in reshaping collective beliefs on specific conditions and prompt individuals to adopt health-seeking behaviors, especially those that are unfamiliar or newly introduced. Additionally, through collective shifts in behavior that are reinforced by changing community attitudes, individuals might be motivated to utilize other services that they would not typically use but end up utilizing once introduced in an integrative context.

The biocultural approach takes into context the relationship between human biology, environment, and culture to explain patterns of human health and illness among populations, the perceptions of human bodily processes, and how these factors influence the development of traditional healing systems across diverse populations. This approach is being used to inform the program development in several ways. First, factors associated with environment (i.e., biodiversity, medicinal plant availability, exposure to region-specific infectious diseases, and climate) and culture (i.e., beliefs on health and balance, spiritual and religious concepts, collective behaviors patterns, and historical processes of evolution and colonization) impact the development of traditional healing systems as a response to the internal and external conditions that a population maintains dynamic interaction with; therefore, the traditional healing system

that is to be integrated into the public health program must be the one that responds to the respective social, biological and environmental conditions of the target population. In this case, *curanderismo* would be the appropriate traditional healing system to integrate for populations in Latin American countries such as Mexico, Ecuador, Bolivia, Guatemala, and Perú. Second, as discussed in the previous chapter, the main constructs of the biocultural approach overlap with SEM, which demonstrate social and environmental factors operating at multiple levels to affect health. This implies multiple levels of analysis operating within the biocultural approach that are also situated within the schematic of the selected framework; this approach fits well with the framework due to the focus on the predisposing, reinforcing, and enabling factors that are linked through culture on multiple levels. Third, the constructs of the biocultural approach align with the phases of PRECEDE via the assessment of the biological, environmental, and sociocultural factors that impact the health of the population and the identification of the traditional healing methods that are used as their primary mode of healthcare; therefore, the statement of need will be entitled accordingly to demonstrate the use.

The use of these two theories places emphasis on the sociocultural factors in relation to individual and environmental and helps the program planner identify the critical aspects of culture that are linked to health, including the particular healing methods and practices employed by a group of people to treat illnesses and restore individuals' health. Having identified the beliefs, diagnostic methods, healing practices, and treatments of *curanderismo,* it can then be adapted for use in an integrated public health program for indigenous communities in Latin America.

3.1.3 Methodology

There are a wide variety of methods and tools that can be utilized in public health programming to assess community health needs, understand the social ecological context and epidemiology, engage communities in program planning and development, define outcomes, and inform the implementation process.

The methods that have been selected for utilization in this program development are surveys, focus groups, and concept mapping. The functions linked to each method provide insight on the relevance to the program.

Table 2 Methods & Rationale for Use

Method	Functions
Surveys	Gathers information on prevalent health conditions and health practices in a short frame of time and in a standardized manner. Measures KAB of *curanderos* and health providers in a standardized and quantitative manner. Allows for open-ended responses.
Focus groups	Allows community members to discuss relevant issues in a community-based setting. Encourages listening and facilitates deeper thinking on health issues and contributing factors. Provides qualitative insight on community-level KAB and how they are reinforced and strengthened.
Concept mapping	Involves all participants to analyze themes and contributing factors linked to particular health conditions and healing methods. Provides qualitative insight on what elements of healthcare are important to the community.

3.2 Program Proposal

The program proposal consists of three main components: the statement of need, the logic model, and the program plan. Typically, a complete program proposal includes a budget plan and an evaluation plan; however, these components are beyond the scope of this paper as the focus is on what elements are essential to program design for diverse populations. Considerations for program evaluation will be examined in the discussion.

The statement of need is a document describing the public health issue that the program aims to address. The document will describe the purpose of grant and target population; interpret findings of the social, epidemiology, and policy/EBI assessments; and present a brief program description based on the identified goals and outcomes. The document will be structured according to the PRECEDE phases to demonstrate the application of the framework.

The logic model is a tool used to map out a program's inputs, outputs, and intended outcomes and will essentially provide a snapshot for the program.

The program plan will review the details of the intervention: state goals and objectives; present timeline; describe stakeholders and community engagement plan; and outline activities and implementation work plan. The intervention has been designed using the baseline information collected from the assessments and will be adapted to the specific results of the community needs assessment that will be conducted at the initiation of the program.

3.2.1 Statement of Need

3.2.1.1 Purpose of Grant

A literature analysis reveals a significant gap in the amount of evaluated health interventions that integrate traditional medicine for indigenous populations in Latin American countries. Approximately 50 million indigenous people belonging to some 500 ethnic groups reside in this region (8% of total population), with the largest populations living in Mexico, Guatemala, Perú, and Bolivia. Indigenous people are among the world's most socially vulnerable groups, as they are subject to poor social and economic conditions at higher rates compared to the general population. In Latin America, they constitute 14% of the population that lives in poverty, 17% living in extreme poverty, and 43% experiencing material poverty. Educational and employment opportunities are limited as they continue to face marginalization and discrimination by the general population, resulting in low socioeconomic status. As a whole, they experience higher rates of morbidity and mortality across a wide range of health conditions, such as tuberculosis, maternal and infant mortality, violence and sexual abuse, chronic diseases resulting from environmental pollution, and mental health conditions. The general lack of health system infrastructure in rural regions with high indigenous populations and the lack of access to healthcare further impacts their health status, as they are often unable to seek out care for conditions for a multitude of reasons that include cost of treatment, lack of transportation to facilities, discrimination by healthcare providers, and distrust of modern, biomedical practice. Attempting to close the gaps in healthcare access and improve health outcomes for these communities is a massive undertaking that requires health systems development and strategic coordination of health services and programs.

Traditional medicine has been identified as a critical strategy for delivering health services and improving healthcare access for indigenous communities, specifically due to the historical implementation of policy and other structural level barriers that have negatively impacted the existence of indigenous social structures and cultural practices. However, there are a number of barriers to integration and implementation of traditional medicine objectives and the methods by which an integrative program is designed are not discussed. Health programs have already been identified as a key strategy to deliver specialized interventions, especially for rural and indigenous populations. There is a significant gap in the number of public health programs targeting indigenous population in Latin American countries that integrate *curanderismo* or some form of traditional medicine that can address either multiple or specific public health conditions. Cultural competency and respect for diverse perspectives are central tenets to delivering integrative medicine effectively, making integrated health interventions an appropriate option for these communities.

To address this issue, we propose an integrated health intervention that provides a range of *curandero* services within existing rural community health centers (CHCs) to improve the health status of an indigenous community. This intervention will take place in the Ayacucho region of Perú, serving the Quechua communities that reside there. The program will make use of surveys, focus groups, and concept mapping to identify community needs, inform cross-cultural training and adapt *curandero* services to the identified needs of the communities. The intended outcomes are to increase use of *curandero* and standard health services within a CHC setting, improve KAB on methods of healing among curanderos, health providers, and the target population, and improve the general health status of these communities with reduced incidence of health conditions in the long term.

3.2.1.2 Target Population

The target population for this program will be 3 Quechua communities residing in the Ayacucho region of Perú. The Quechua people comprise several South American indigenous groups that are culturally bound by the Quechua language family. Approximately, there are some 5.5 million Quechua people currently residing in Perú (13% of total population), 2.05 million in Bolivia (23%), and 700,000 in Ecuador (4.1%). Approximately, 1.75 million Quechua people reside in the Ayacucho region, located in southcentral Perú, which is primarily rural (Joshua Project, 2023). They are impacted by a myriad of health issues that range across infectious diseases, chronic diseases, and emotional/spiritual afflictions. A history of genocide, colonization, and oppression has transformed the social and economic structures that are linked to their culture, all of which impacts the health profile of this population today. Nearly all Quechua groups have adopted Catholicism, with 93% of Quechua people in Ayacucho being Catholic (Joshua Project, 2023), but syncretize their beliefs and practices with that of their ancestral indigenous religions, extending to health traditions as well.

Currently, there have been a small number of public health programs in the past that provided integrated healthcare to Quechua populations in Perú. It is unclear as to how many such programs are either currently operating since their pilot run or have been introduced within the last 7 years; however, it is recommended by all studies evaluating traditional medicine in any capacity that public health programs designed for indigenous populations utilize traditional medicine as a strategy for reaching the populations and providing more comprehensive access to healthcare. Given that *curanderismo* addresses such a wide range of health issues, including those of a spiritual nature, and is aligned with Catholic religious beliefs, it would be a useful

strategy to integrate it into rural CHCs to provide an expanded range of services, increase accessibility, and increase use of CHC services.

3.2.1.3 Social Assessment

Public health research on the indigenous populations of Perú is rather sparse and unsubstantial, with a small number of publications on the social, cultural, and ecological factors that contribute to higher rates of poor health outcomes and health disparities. There is little concentrated research on specific ethnic groups that clearly identify the patterns of disease and the associated epidemiological factors. Most investigations on indigenous health and traditional healing systems have primarily been conducted throughout the last 70 years by anthropologists and sociologists. A review of these investigations revealed some relevant information on the health beliefs of specific indigenous groups, the current state of healthcare across Latin American countries, the barriers to healthcare access, and the use of traditional & complementary medicine.

The World Health Organization's technical report on traditional medicine identifies primarily social and cultural factors to be the causes of disease and illness in both urban and rural regions in Perú, with the most frequent causes of poor rural health being attributed to malnutrition, lack of hygiene & sanitation, poor housing, low economic opportunities, illiteracy, lack of access to culture, and lack of technology (World Health Organization, 1999). As a result, the demand for traditional medicine in the country persists due to the continuous use of traditional medicine, lack of official healthcare services, existence of traditional healers, and an abundance of medicinal plants (World Health Organization, 1999). A 2020 study on the Asháninka communities residing in the Peruvian Amazon region identified respiratory illnesses, gastrointestinal infections, and malnutrition as the prevalent health issues that are linked to social

factors of poor housing conditions, poor sanitation, and lack of hygiene and recommended several strategies for incorporating aspects of traditional medicine to enhance healthcare (Badanta et al., 2020). A 2008 study analyzed the treatment patterns of health conditions in a Quechua community residing in the Bolivian Andes by comparing uses of medicinal plants and primary health care services and discussing overlaps in treatment modalities to inform enhancement of healthcare (Vandebroek et al., 2008).

Review of these studies reveals three findings:

1. There is a gap in the literature and consolidation of the prevalent health issues that affect indigenous populations, specifically the Quechua, in Perú.
2. Isolating specific disease patterns to specific indigenous populations would be an arduous effort due to the presence of both communicable and non-communicable conditions that are attributed to simultaneously occurring and compounding biological, social, and ecological causes.
3. Traditional medicine is an imperative to delivering comprehensive health services in this region, for a multitude of reasons such as little to no cost, accessibility, and cultural preference for treatment.

It is important to note the social and historical processes such as colonialism, decimation of indigenous peoples, and systematic oppression by the Spanish that have led to widespread economic inequality, political instability, poverty, and lack of resources in all areas. The current state of indigenous health is inextricably linked to this history in three ways:

1. Exposure to non-regional diseases that decimated the indigenous populations of Latin America and continue to affect their health in the present day;
2. the lack of access to economic resources & infrastructure in mostly rural regions; and

3. the evolution of *curanderismo* to incorporate healing concepts brought by the presence of other groups.

The impact of colonization extends to current day, where governments still struggle to provide structural access to biomedical healthcare, despite the implementation of universal health coverage and health policy, development & training of physicians and other health personnel, and collaboration with both governmental and non-governmental organizations across the world. In the face of political instability and continuous extraction of resources by developed countries, providing healthcare to all populations continues to be a difficult effort. For that reason, *curanderismo*/traditional medicine has been identified by the World Health Organization and the Peruvian Ministry of Health as a critical resource & strategy to providing healthcare coverage to indigenous populations, including the Quechua.

3.2.1.4 Epidemiology & Ecological Assessment

Little epidemiological research has been conducted on the indigenous populations of Perú overall. Specifically for the Quechua people, much of the research focus has been on the biological and epigenetic adaptations resulting from living in the high-altitude Andes mountains, such as shorter stature and low adiposity (Toselli et al., 2001); enlarged vital capacities, residual volumes, and total lung capacities (Kiyamu et al., 2012); high frequency of EGLN1, a genetic adaptation of high aerobic capacity to hypoxia (Brutsaert et al., 2019); and higher levels of submaximal arterial oxygen saturation (Kiyamu et al., 2015). However, several anthropological studies involving the Quechua people (and other groups) living across Bolivia, Ecuador, and Perú indicate a wide range of disease patterns, health conditions, and illnesses that are prevalent in the region. Malaria, tuberculosis, HIV, STIs, hepatitis, and parasitic infection/zoonotic diseases are among the most common infectious diseases. The more common non-communicable

and chronic conditions include respiratory problems, arthritis, gastrointestinal issues, and diabetes (Badanta et al., 2020; Vandebroek et al., 2008). Spiritual illnesses include *maladición* (cursed), *wayra* (evil wind), or *madre* (rupture) (Vandebroek et al., 2008).

In regard to the role of ecology in the development of disease patterns and biological responses, several ethnomedical and anthropological studies have discussed the uses of medicinal plants in Perú and Ecuador. Both these countries have an abundance of medicinal plants and natural resources that have been utilized by many indigenous groups throughout history, including the Quechua. A 2014 ethnopharmacological survey described 178 medicinal plant species that were used by Quechua speaking communities in Callejón de Huaylas, Ancash, Perú, to treat a myriad of illnesses, including those that are defined by the spiritual beliefs of *curanderismo*, and presented the diagnoses in relation to treatment preparations (Gonzales de la Cruz et al., 2014). Another ethnomedical study assessed the levels of traditional medicine knowledge and uses for some 402 medicinal plants within an Asháninka community in Bajo Quimiriki, Junín, Perú (Luziatelli et al., 2010). A medical anthropology article discusses the "healthscape" of rural Peruvian villages in relation to the current arrangement of social structures and how the relationship between modernity and cultural identity influences the continued use of medicinal plants as a primary form of healthcare (Gold & Clapp, 2011). Although conducted across different regions and ethnic groups, these studies highlight a very strong, culturally driven presence of traditional medicine in modern times, despite the hegemony of Western biomedicine. The use of plant medicine illustrates the dynamic between environment, biological processes, and culture that is presented in the biocultural approach: health is both preserved and restored through the availability of region-specific natural resources in the environment, to which the native communities have adapted to biologically and through the creation of the social and

cultural conceptions of health that informs the use of those resources as diagnostic and treatment methods. In addition to the natural environment, the current social environment (e.g., lack of infrastructure in rural regions, poor socioeconomic development, and poverty) that resulted from colonization significantly impacts access to healthcare and thus reinforces the use of *curanderismo*. While many ethnomedical research studies discuss the use of medicinal plants from a social perspective, there is a gap in the literature on biomechanisms of medicinal plants. One of the implications of the integration of *curanderismo* into public health programming is that it would encourage further ethnomedical research.

3.2.1.5 Policy & Evidence-Based Intervention Assessment

The WHO's 2019 Traditional and Complementary Medicine report identified Perú as one of the nations in Latin America with a national T&CM policy, where TC&M is integrated into the General Health Law stating that promotion of TM is of special interest and attention to Perú. Perú's government has also established a national office, the National Institute of Traditional Medicine since 1990, and a national TC&M directorate called Complementary Medicine Directorate since 2009. There are several regulations and policies on herbal medicines either in place or in the process of being implemented, that categorize them for use as medicines, dietary supplements, and functional foods; between 2002-2007, 962 herbal medicines were nationally registered. A consumer education program for self-health care using TC&M was launched in 2011. In regard to practitioners, T&CM providers are eligible to practice in private and public clinics and hospitals. T&CM education is offered at the university level and there is additionally a government recognized certified training program. The government social security insurance, EsSalud, provides care to about 30% of the population and covers T&CM services (World Health Organization, 2019). These policies and programs set up a national framework in the

country for integration of traditional medicine into health services at the highest level, thus encouraging traditional medicine as a viable means of healthcare.

The majority of the evaluated public health interventions integrating traditional medicine are implemented throughout the regions of Africa, South Asia, and Southeast Asia. A review of the literature on either integrating traditional medicine or applying cultural awareness into public health programming revealed a considerate gap in reputable health topic journals on traditional health practices in Latin America, the properties and biomechanisms of medicinal plants found in the region, and the evaluation of public health interventions integrating traditional medicine to some degree. Thus far, there are a handful of relevant public health programs across Latin American countries that integrate some form of *curanderismo* or traditional medicine, with most of them being implemented in the 1990s and 2000s.

A 2001 study evaluated the rate of use of *curanderismo* among Hispanic patients seeking medical care in Denver, Colorado, where 29.1% of patients had utilized curandero services beyond primary care. While this study did not integrate and evaluate *curanderismo* into a public health system, it discussed the value of its potential use for Hispanic populations (Padilla et al., 2009). A 2007 case study review of best practices in intercultural health in Latin America discussed the various levels of integration of traditional medicine into public healthcare systems and the efficacy of those programs on community health outcomes (Mignone et al., 2007). A 2009 paper describes the efficacy and effectiveness of the cultural adaptation of a birthing services program in rural Ayacucho, Perú, resulting in a dramatic increase of delivery service use. A list of potential barriers and culturally adapted solutions were generated to inform delivery of birthing services (Gabrysch et al., 2009). A study comparing treatment of health conditions using traditional and biomedical methods in a Quechua community in rural Bolivia

demonstrated the overlaps in treatment options and the complementary and adaptive nature for treatment of chronic conditions (Vandebroek et al., 2008). Collectively, these existing evidence-based interventions demonstrated the various strategies by which *curanderismo*/traditional medicine is adapted to specific health issues.

3.2.1.6 Goals & Outcomes

Having identified the target population, conducted the preliminary social, ecological, and epidemiology assessments, and identified the gaps within existing evidence-based interventions, the goal of the proposed program is to provide a range of *curandero* services within existing rural CHCs for 3 Quechua communities residing in the Ayacucho region of Perú to expand access to healthcare options and improve health outcomes.

In order to accomplish this goal, this program lists the following objectives:

1. Develop comprehensive understanding of health in the region, determine the content of training sessions and the specific curandero services that are needed by each community through concept mapping activities.
2. Create cultural awareness of *curanderismo* within the healthcare system and establish guidelines for collaboration in diagnosis of illness, treatment options, and holistic prevention care through cross-cultural hands-on training.
3. To expand healthcare access by providing a range of *curandero* services to patients, in conjunction with standard health services, at rural CHCs.

3.2.2 Logic Model

Table 3 Logic Model

Problem Statement: There is a lack of access to healthcare options available to Quechua communities in the rural regions of Ayacucho, Perú to address the wide array of health conditions impacting the target population.

INPUTS	**OUTPUTS**		**OUTCOMES**		
	Activities	***Participants***	**Short**	**Medium**	**Long**
Curandero services Ritual items, herbs, plants, other healing items. Govt funding NGO funding Program director Community health workers Volunteers Program facilitators Translators	Concept mapping Cross-cultural hands-on training *Curandero* services	3 Quechua communities in Ayacucho, Perú *Curanderos* CHCs Health professionals (doctors, nurses, community health workers)	90% of *curandero* services utilized. Types of *curandero* services utilized. 85% of medical services utilized. 60% of patients using both services.	Changes in KAB among *curanderos* and health providers on healing methods. Changes in KAB among community members towards healing methods.	General improvement in communities' health status. Reduced incidence rates of health conditions in target population. Increase in access to health services (*curandero* & standard)

Assumptions/Theoretical Constructs

Health Belief Model
Biocultural approach
People are willing to accept both healing modalities, depending on the symptoms and severity of health conditions.
Communities have full access to natural & environmental resources.

External Factors

Lack of transportation to CHCs
Preference for traditional healing to be conducted outside of government facilities.

3.2.3 Program Plan: *Curanderismo para La Communidad*

3.2.3.1 Choice of Approach

The *Curanderismo para La Communidad* program is an attempt to integrate traditional medicine into public health programming in a global setting to enhance healthcare services for indigenous communities and promote health on not just physical but mental, emotional, and spiritual levels as well. Therefore, the choice of approach for this program is to implement a range of *curandero* services into 3 existing, government funded rural CHCs in Ayacucho, Perú. The program makes use of concept mapping and cross-cultural training to identify key public health issues in the area and inform the implementation of *curandero* services. This approach was chosen because it actively engages community members to be involved with the planning process and design it according to their specific needs.

3.2.3.2 Timeline

The program is intended to be implemented and last over a period of 3 years, beginning August 2023 and ending July 2026. The program will be divided into 4 phases: Initiation, Planning, Implementation, and Closing. The Initiation phase will consist of assessment activities and community engagement meetings and will last for 3 months. The statement of need is typically presented during this phase. The Planning phase will consist of concept mapping and training activities and will last for 3 months. The Implementation phase will consist of implementing the curandero services into existing rural CHCs; the first month will be dedicated to assessing feasibility and capacity, finalizing schedule availability, and making adjustments. Once these aspects are figured out to that ensure operations run smoothly, *curandero* services

will be offered continuously at the CHCs for the next 30 months. Availability of curanderos will be adjusted as needed, based on community engagement sessions and monitoring & evaluation (ME) reports. The closing phase will begin 3 months before the official program end date. During this time, the program staff will conduct final evaluations, assess sustainability, and attempt to secure funding for program continuation. If funding is not secured, *curandero* services will be slowly phased out from the CHCs, and *curanderos* will have the option to continue providing services to their communities how they see fit.

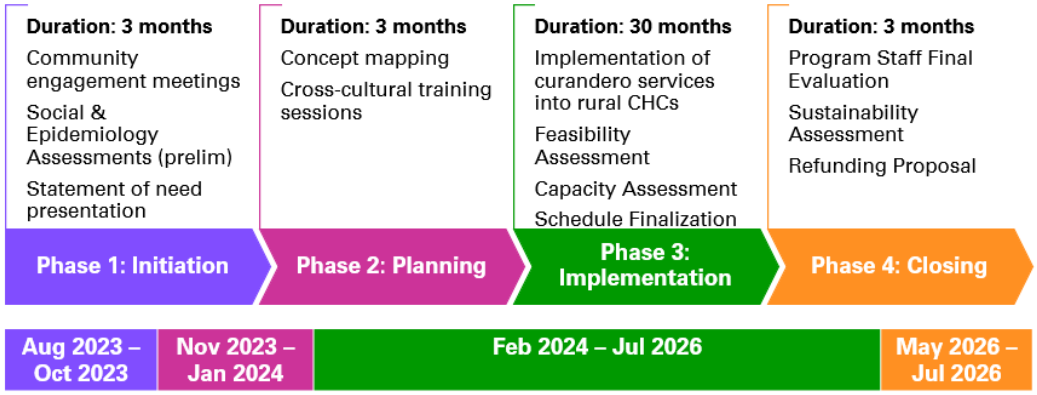

Figure 4 Program Timeline

3.2.3.3 Stakeholder & Community Engagement Plan

Curanderismo para La Communidad aims to provide healthcare access to Quechua communities residing in Ayacucho, Perú. A list of stakeholders that are involved and impacted by this program have been identified and are categorized as primary, secondary, and key stakeholders based on their level of involvement and interest.

Table 4 List of Stakeholders

Category	Level of involvement/interest
Primary	
Quechua communities	Target population Directly involved in program activities and impacted as recipients of the program.
Curanderos	Directly involved in program planning, implementation & activities: providing *curandero*-based health services to target population. Impacted by participation in education & training activities.
Local health providers	Directly involved in program planning, implementation & activities: providing medical-based health services to target population. Impacted by participation in education & training activities
Local community health centers	Directly involved in program planning & implementation: coordinating, managing & facilitating implementation of program into CHC services. Impacted by integration of traditional health services, which will generate an increase in provider availability and increase community engagement levels.
Secondary	
Regional public health officers	Oversight of regional public health operations. Interest in expanding health services and healthcare access to rural regions and indigenous populations.
Ministry of Public Health	Interest in expanding health services and healthcare access to rural regions and indigenous populations.
Key	
Pan American Health Organization	Maintained interest in health across Latin American countries; engages in technical

	cooperation and provides support for combating disease, strengthening health systems, and responding to emergencies/disasters. Has acknowledged role of traditional medicine as valuable modality of healthcare in treatment of health conditions and accessibility of healthcare.
National Institute of Traditional Medicine	Maintained interest and investment in traditional medicine research and education in the region. Awareness of program contributes to reinforcement between traditional medicine research and program/service implementation.
EsSalud, WHO collaborative center for T&CM in Peru	Invested in providing health on 3 levels (55 care units, 29 care centers, and 1 palliative care) using intercultural approaches.

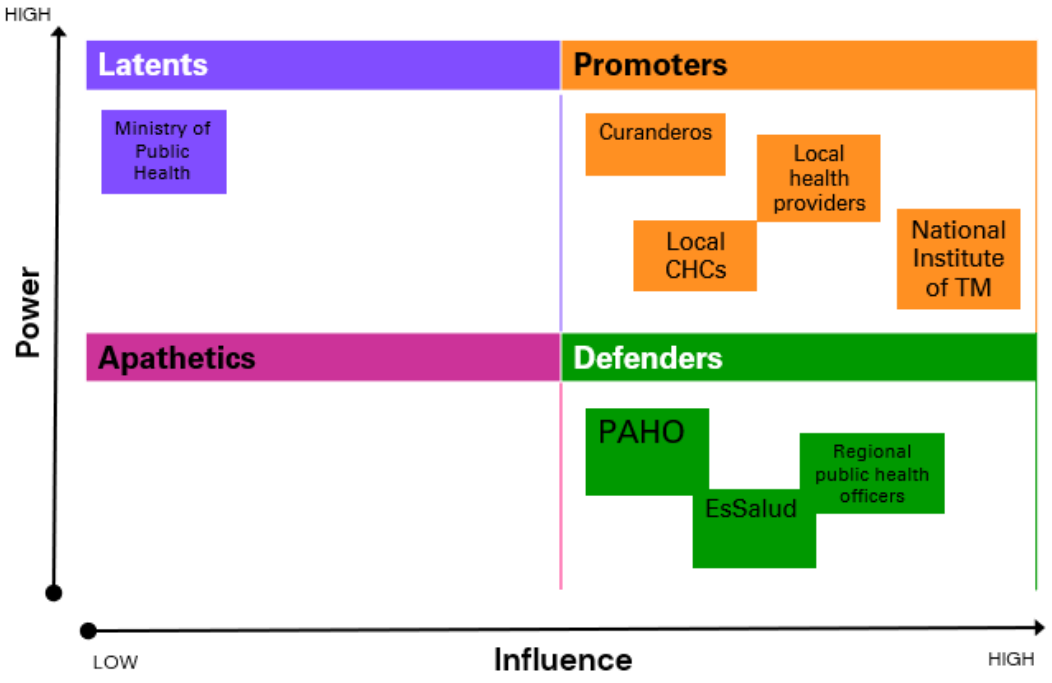

Figure 5 Stakeholder Analysis

Based on this analysis, stakeholders will be engaged using a snowball engagement strategy. The target population will be engaged through community meetings. Program staff will first reach out to the regional government established CHCs and initiate contact with community health workers who already have established connections with the local people. *Curanderos* and local health providers in each region will then be contacted to gauge interest in program participation. An initial community engagement session will be organized, where program staff will be introduced to the communities, the program purpose and activities will be explained, and initial social and ecological assessments will be conducted for informational purposes. The secondary stakeholders will be contacted through CHC administration as they have established direct contact with regional public health officers and the Ministry of Public Health to inform them the proposed program and secure all necessary approval for implementation. All staff will be required to attend any community events that are held in the first month. Following the initial session, program staff will be maintaining regular contact with community members, *curanderos*, and CHCs to carry out activities. Staff will also be encouraged to attend cultural & community events throughout the duration of the program. Following contact with the primary and secondary stakeholders, the key stakeholders will be contacted and engaged. The Ministry of Public Health and regional public health officers will be the liaisons for all contact with the National Institute of Traditional Medicine, PAHO, and EsSalud, informing them of the program and collaborating to strengthen delivery of *curandero* services with resources.

3.2.3.4 Program Activities

To implement *curandero* services into 3 established CHCs in the rural regions of Ayacucho, Perú, the program activities will consist of 3 parts: 1) concept mapping, 2) cross-

cultural hands-on training, and 3) *curandero* service delivery. These activities are designed to be carried out sequentially, with the previous ones informing and feeding into the next.

The first activity is concept mapping, where a collaborative session with the target population and key stakeholders will be held to assess the needs of the community and gather relevant data to inform the subsequent activities. The objective of concept mapping is to determine the content of training sessions and the specific *curandero* services that are needed by each community. Program associates will carry out the concept mapping activities. Surveys will be administered to providers (i.e., CHC personnel and *curanderos*) to gather information on prevalent health issues, diagnostic practices, and treatment models. Focus groups with community members, curanderos, and public health providers will be conducted to understand the knowledge, attitudes, and beliefs (KAB) on *curanderismo*, medical & public health services, and the social determinants that affect community health outcomes and access to healthcare. Responses from the surveys and focus group discussions will be analyzed to identify key themes in community needs, social barriers and facilitators to accessing healthcare, and natural resource availability. Concept mapping serves multiple functions: it is a needs assessment method, engages community and involves them from the beginning, and informs the implementation process.

Table 5 Concept Mapping Activities

Concept Mapping			
Objective: To develop a comprehensive understanding of health in the region, determine the content of training sessions and the specific curandero services that are needed by each community.			
Session	**Method**	**Participants**	**Information Collected**
CM.1	Surveys	*Curanderos* Health providers	Prevalent health issues & common ailments

			Diagnostic practices Treatment models
CM.2	Focus groups	Target population *Curanderos* CHC personnel	KAB on *curanderismo*, medical & public health services, and social factors affecting health outcomes & healthcare access
CM.3	Concept mapping	Target population *Curanderos* CHC personnel	Thematic analysis on community-specific needs, social barriers & facilitators to health, and natural resource availability

The second activity is comprehensive, cross-cultural hands-on training, involving all CHC personnel and *curanderos*. The objective of the training is to create cultural awareness of *curanderismo* and establish guidelines for diagnosis of illness, treatment options, and holistic prevention care. Once the concept mapping findings are presented, program associates will work with providers to design training guides and a series of hands-on training sessions across a 5-week period. The training sessions are described as follows:

Table 6 Cross-Cultural Hands-On Training Sessions

Cross-Cultural Hands-on Training Sessions		
Objective: To create cultural awareness of curanderismo within the healthcare system and establish guidelines for diagnosis of illness, treatment options, and holistic prevention care.		
Session Number & Date	**Lead**	**Description**
Education		
CCT.1	*Curanderos*	Explain concepts & beliefs of curanderismo. Describe & show healing methods. Describe diagnostic methods.

CCT.2	CHC health providers	Explain biomedical & epidemiology concepts. Describe & show medical treatment options, including surgery. Describe diagnostic methods.
Application		
CCT.3	Program associates	Establish protocol for collaboration in diagnosis & treatment.
CCT.4	CHC administration	Office designation. Records system update. Orientation & test run.

The first two sessions comprise the educational component and the last two sessions comprise the application component. The objective of the educational component is to develop a shared understanding of the philosophies behind each healing modality, to know the social and environmental factors connected to the development of treatment approaches and identify any overlapping and gaps. Session 1 will be led by the *curanderos*, where they will explain concepts & beliefs of *curanderismo*, the reasoning and underlying cosmovision, describe diagnostic and healing methods, and show options for treatment and holistic prevention care to health providers. Session 2 will be led by CHC health providers (doctors, nurses, and community health workers), where they will explain foundational biomedical and epidemiological concepts, describe standard diagnostic methods, and show various medical treatments for specific diseases, including surgery, to *curanderos*. The sessions will be interactive, with hands-on activities and discussions. Once the educational component is completed, the application component will begin. Session 3 will be led by program associates, who will assist curanderos and health providers in establishing a protocol for collaboration in diagnosis and treatment. This protocol

will describe the procedures to undertake when a *curandero* or health provider is unable to diagnose patients and/or provide adequate treatment and how to transition care efficiently. Session 4 will be led by CHC administration, who will decide on the appropriate logistics & operations processes and prepare for implementation of the core activity, *curandero* service delivery. Office spaces will be designated for *curandero* use only and administrative processes will update the records system to include the *curandero* services prior to service delivery. *Curanderos* will participate in CHC orientation and become familiarized with employee responsibilities and meeting schedule. Administration will also oversee a 1-week long test run with the *curanderos* to identify any potential issues in operations, service delivery quality, and supply acquisition prior to implementation.

The third and core activity of the program will be the delivery of *curandero* services within the CHCs. Based on the concept mapping data, each CHC will have multiple *curanderos* specializing in different areas: *yerberas*, *sobadoras*, *hueseras*, *parteras*, *espiritualistas*, and *curandero totales*. There is not much distinction in the ways the *curanderos* will carry out their work, as their diagnosis methods overlap, and they have the ability to call on other *curanderos* and health providers to assist them in their work as needed. Ultimately, the objective is to provide access to these services within a centralized space and integrate some of these processes into the mainstream approach to public health. A schedule for available services will be decided at the end of the training session and will be adjusted accordingly throughout the duration of the program.

Table 7 *Curandero* Services & Schedule

***Curandero* Services & Schedule**
Objective: To provide a range of *curandero* services to patients within CHCs and increase access to healthcare options.

Service	Name	Schedule
Curandero (general)	TBD	M/Tu/W/Th/F/Sa 7-11am, 3-5pm
Yerbera (herbalist/pharmacist)	TBD	M/W/Th/F 3-7pm
Sobadora (bodyworker/massage/physical therapist)	TBD	Tu/Th/F/Sa/S 10am-12pm, 4-6pm
Huesera (bonesetter)	TBD	W/F/Sa 12-4pm
Partera (midwife)	TBD	M/Tu/W/Th/F/Sa 7am-7pm; on-call
Espiritualista (spiritualist/therapist)	TBD	M/Tu/W/Th/F/Sa 4-7pm
Curandero total	TBD	M/Tu/Th 2-5pm

3.2.3.5 Implementation

The implementation framework has been established with the PRECEDE-PROCEED framework. Implementation will be carried out based on the results of concept mapping and cross-cultural training activities, which provide the foundation to curate community-specific *curandero* services based on community needs assessments, and existing EBIs and policy.

A staff directory and work plan has been developed to manage the implementation of the program activities. The staff directory indicates the positions, number of positions, and responsibilities. The work plan gives a brief description of each activity, associates its functions, connects each activity to the corresponding phases of PRECEDE-PROCEED, assigns appropriate staff to carry out program activities, and what materials & documents are necessary in each phase.

Table 8 Staff Directory

Staff Directory		
Position	No. of Positions	Responsibilities
Project Team		
Program director	1	Oversee program planning & execution and manage finances; establishes contact with partner agencies and stakeholders; assures compliance with CHC policies & regional public health directorates.
Program manager	1 x3 sites	Oversee program implementation at each site; lead program activities.
Program associate	2 x3 sites	Assist program manager in conducting program activities.
Evaluator	1 x3 sites	Conduct evaluation activities at each site.
Translator (Quechua)	1 x3 sites	Translate concept mapping & survey responses, formal concerns & questions, for program staff.
Translator (Spanish)	1 x3 sites	Translate official & program documents for stakeholders
Curanderos		
Curandero	1 x3 sites	Provide traditional healing services.
Yerbera	1 x3 sites	Supply herbal remedies & treatments.
Sobadora	1 x3 sites	Perform massages & other bodywork techniques.
Huesera	1 x3 sites	Perform bonesetting.
Partera	2 x3 sites	Assist women in pregnancy, labor & delivery.
Espiritualista	1 x3 sites	Provide guidance for emotional, mental & spiritual problems.
Curandero total	1 x3 sites	Provide traditional healing services in all areas.
CHC Staff		
Health provider (doctor)	3 x3 sites	Provide medical services to patients
Nurse	2 x3 sites	Assist health providers through nursing activities.
Community health worker	5 x3 sites	Deliver services to communities in villages; conduct outreach
Administrative director	1 x3 sites	Oversee general CHC operations: supply, logistics, budget, etc.

Table 9 Implementation Work Plan

Implementation Work Plan					
Program Director: Oversees program planning & execution and manages logistics. Establishes contact with partner agencies and stakeholders. Assures compliance with CHC policies & regional public health directorates.					
Activity	**Description**	**Functions**	**Phase**	**Staff Assignment**	**Materials & Deliverables**
1. Concept mapping	Assessment of community health needs	Assessments - Engages community. - Informs implementation process	PRECEDE-1, 2, 3, 4	Program manager Evaluators Translator	Surveys Concept map
1.1 Surveys	Surveys to *curanderos* & health providers	Collects data on KAB from curanderos & health providers.	1, 2, 3	Program associates Translators Evaluators	Surveys
1.2 Focus groups	Focus groups discussions with community members	Collects data from communities on needs, KAB, and cultural-specific needs.	1, 2, 3	Program associates Translators Evaluators	Focus group transcripts
1.3 Analysis & mapping	Conduct concept mapping	Analyzes qualitative data to map out key themes in KAB on *curanderismo* and Western biomedicine; identify needs.	1, 2, 3	Program associates Evaluators	Concept map
2. Cross-cultural training	Training & program implementation	Cultural awareness education & training - Informs implementation process.	PRECEDE-3, 4 PROCEED-5	Program managers Translators CHC admin	
2.1 *Curanderismo* education	*Curanderos* educate medical providers on their knowledge & methods.	Creates/enhances cultural awareness & understanding. Builds health provider skillset	3	Program associates *Curanderos*	Training guide

2.2 Medical education	Medical providers educate *curanderos* on their knowledge & methods.	Creates/enhances scientific awareness & understanding. Builds *curandero* skillset.	3	Program associates Health providers	Training guide
2.3 Protocol development	Create protocol for collaboration in diagnosis & treatment	Enhance collaborative processes between *curanderos* & health providers.	3, 4	Program associates	Protocol
2.4 Logistics & Operations	Test run for implementing *curandero* services into CHCs	Establish operational process for integration of new services.	PROCEED-5	CHC admin Program managers *Curanderos* Health providers	Administrative records
3. *Curandero* service delivery	Range of *curandero* services available within the 3 CHCs	Implementation	PROCEED-5	*Curanderos* CHC health providers CHC admin	Organization records Registers Health records

Based on the timeline, the first month of *curandero* service implementation will be dedicated to assessing feasibility, capacity, schedule availability, and making adjustments. Once these aspects are figured out to ensure operations run smoothly, *curandero* services will be offered continuously at the CHCs for the next 30 months. Availability of *curanderos* will be adjusted as needed, based on monitoring and evaluation reports.

At the 33-month point of the program, program staff will begin phasing out the formal availability of program services from CHC services over a period of 3 months. Final evaluations will be conducted during this time, measuring the program outcomes and impact. Based on the results of the evaluation, a refunding proposal will be prepared if the program results demonstrated that the intended outcomes have been met or exceeded.

3.2.4 Evaluation

While an evaluation plan is critical to program planning and implementation, designing a complete evaluation is beyond the scope of this paper. However, for consideration purposes, each evaluation phase will be briefly described, and some suggestions shall be made for measuring process, impact, and outcomes indicators.

Phases 6, 7, and 8 of PRECEDE-PROCEED are the process, impact, and outcomes evaluation phases and have been designed to be considered throughout program planning as the reverse process of analysis. By considering how a program might be evaluated in relation to the outcomes and impact goals, it provides some perspective on what elements will contribute to a program's success and how to measure that level of success.

Table 10 Considerations for Evaluation Questions

Evaluation Phase	Potential Evaluation Questions
Process	What were the emerging themes from each community concept map? What lessons did curanderos and health providers learn from each other? How did curanderos and health providers adapt their methods and practices?
Impact	What difference did including curandero services within CHCs make in health seeking behaviors among the target population? How were patients treated by curanderos and health providers? What conditions have reduced incidence rates as a result of increased access to healthcare options?
Outcomes	How many patients utilized *curandero*

	services, standard health services, or both? What new KAB did *curanderos* and health providers hold following program implementation?

The scope of the suggested evaluation questions is focused on the delivery of health services and how *curanderos* and health providers have adapted their methods to demonstrate which elements should be considered when evaluating integrated public health programs.

4.0 Discussion

When designing a program, it is critical to analyze and understand the elements of design; every population and every program that is designed to improve particular health outcomes is unique and must be tailored to the population's characteristics, whether it be biological, social, or environmental. Understanding the mechanisms by which to select the appropriate planning frameworks, theories and models, and methods helps to adapt them to serve population needs. This chapter will analyze the elements within program development and how to incorporate cultural competency to design public health systems that integrate traditional medicine and other alternatives for healing into the mainstream framework for the goal of improving health outcomes and access to healthcare, specifically for diverse populations. The goal is not to develop a framework for considerations but to review the pathways that an integrated public health program can be tailored and adapt these tools to accomplish public health goals.

4.1 Key Findings

Each aspect of the program has been designed with analysis of influence and impact on the program goals and intended outcomes. Conducting the process of program development has revealed several key findings for framework, theory, methodology, and approach to activities.

Table 11 Key Findings

Framework
Use of Precede-Proceed to map out the program. • The program is about increasing access to services through integration of *curanderismo.* • Identifies the social, biological, and environmental factors and illustrates how they might interact and reinforce each other to inform a program. Emphasis on the assessments and collection of community-specific information to adapt the program to community needs, which means community engagement. • The assessments that were completed for this program were preliminary and had a broad scope, allowing for room for supplementing the literature research with substantial quantitative and qualitative data. This is an issue since often times, data on indigenous communities is very vague and aggregated. Which also points to another larger issue in perceiving indigenous groups as monolithic and the many variations in health concepts could mean different things. Therefore, conducting assessments allows for community-specific data collection and the program components can be tailored accordingly.
Theory
Use of medical anthropology and the biocultural approach as underlying theories • Identify the factors and mechanisms that contribute to health in a region and define the context for diagnosis, healing practices and treatment, especially those have been developed over a long history and are constantly evolving/adapting to environmental and cultural changes.
Methodology
Use of community engagement strategies such as focus groups, surveying, and concept mapping to gather community-specific information on health needs, available resources, treatment preferences, and KAB on health and well-being and receiving care. • It can then be used to identify themes in health issues, what services are needed, and what are their treatment preferences. • It gives them ownership and empowerment through involvement in planning, provides them tools to set up their own projects, gives the opportunity for them to advocate for their needs, and helps build relationships between communities and providers. Use of concept mapping to inform the content of cross-cultural training sessions and understand how to change beliefs on treatment approaches through education. • Active, hands-on demonstration helps practitioners develop skills in areas that they did not know before so they may collaborate better.
Approaches
By not centering on the program on a specific health program, it emphasizes the importance of the holistic approach. • Additionally, by providing a wider range of services, it makes those services more

accessible for patients seeking care who may need to utilize another service upon diagnosis.

Involvement in concept mapping and cross-cultural training allows *curanderos* to have agency over the educational content and how they feel it is best to educate health providers based on their knowledge of the communities they serve, and the wisdom gained from their practice.

One aspect of integrated medicine that is being encouraged by national health systems is formal education/training for traditional medicine, with certifications.

- This program is not requiring any formal training for *curanderos* as that is an individual choice and can be discrediting and/or disrespectful as it can imply that their knowledge and ways are not legitimate if they do not operate within the boundaries of formal educational institutions.

4.2 Pros & Cons of Methodology

The community engagement methods selected for the purposes of this program were surveys, focus groups, and concept mapping. The rationale for selecting these methods was previously discussed in the description of methodology; however, the limitations and negative aspects of the methods must also be discussed in order to identify and anticipate issues that may arise during program implementation.

Table 12 Pros & Cons of Community Engagement Methods

Method	
Pros	*Cons*
Surveys	
Quick and efficient method of gathering information. Reaches a large number of people at once. Standardization of responses for comparison. Statistical validation.	Limited quality or depth of information. Limited to externally designed responses; surveyors unfamiliar with culture and practices may not capture all relevant data. Respondents may skip sections.
Focus groups	

Supplements written surveys. Encourages collective participation. Establishes connections with individuals who are knowledgeable of social & cultural customs and can mediate conversations. Captures community level information without the need for in-depth qualitative interviews.	Can be difficult to carry out with too many participants. Participants might feel hesitant to discuss certain concerns in a public space. Possibility of conflict when sharing concerns and problems. Time-consuming and requires more labor and resources to conduct.
Concept mapping	
Allows communities to identify their own needs and wants. Engages communities in the process of informing program design & implementation.	Potential bias or limitation in defining themes; participants may not agree with set definitions. Inability to isolate most relevant or important themes.

In addition to identifying the pros and cons, other potential methods should be considered for use. The rationale for analyzing other methods is to discuss the various pathways by which a community centered public health program might be designed. This paper's goal was to explore the elements of design; exploring different methodologies provides a comprehensive picture for what other methods might be used for similar programs attempting to integrate traditional medicine. Other such methods that could be used include qualitative interviews, community needs assessments, and public forum sessions. For example, qualitative interviews with *curanderos* and health providers could provide far more insight into their healing practices, their KAB, and their reasons for using certain methods or holding particular beliefs, which might be far more informative to designing the cross-cultural training sessions despite requiring more time for completion and analysis. Community needs assessments might be more comprehensive than a survey in terms of gathering health information on these Quechua communities and allows community members to express their needs clearly; it is additionally less time-consuming and

less complex than focus groups and concept mapping to conduct and identify the most important needs. All of these methods have their advantages and disadvantages; it is ultimately the decision of program developers and community members to select methods based on time, availability of funding and resources, and level of stakeholder involvement and adapt them accordingly to the social, cultural, and environmental context.

4.3 Pathways for Data Collection & Implementation

For this program to be successful, a pathway for data collection and implementation must be considered. In this case, the data collection and implementation processes are being guided by the use of the PRECEDE-PROCEED framework, which utilizes evaluation throughout the planning process to ensure that process outcomes are aligned with the key elements that will drive change and successful implementation. With the focus of the program being on the specific elements of program design for diverse population, data collection is centered around assessment of the KAB of *curanderos* and health providers on differing healing systems, interactions and experiences of patients, underlying principles of practice within healing systems, interpersonal and communication skills of *curanderos* and health providers, and cultural awareness and sensitivity. Data collection will be primarily concerned with the qualitative measures associated with the delivery of the program services, rather than focusing on the quantitative measures. The collected data on these aspects of delivering *curandero* services within rural CHCs for Quechua communities informs the implementation process through the delivery of training sessions that are centered on the creation and enhancement of cultural awareness of different healing methods and fostering collaborative efforts between both types of healers. Once participants have adapted

their practices and established a mutual sense of trust and willingness to collaborate, evaluative questions can assess the changes in the processes and whether or not they have contributed to the intended outcomes. The specific ways in which program participants adapt their methods and apply cultural competency values will be determined based on the information identified during the assessment and concept mapping activities.

The strongest evidence of such a pathway being used for data collection and implementation is discussed in the 2009 study evaluating the cultural adaptation of birthing services in rural Ayacucho, Perú where research on local perceptions and practices on sexual and reproductive health was carried out and used to inform the design and implementation of a birthing service within a community health center in the region that adapted its practices to meet the needs of the population. The study evaluated the social and cultural barriers affecting the uptake of birthing services, proposed culturally adapted solutions, and incorporated the solutions into the health center's birthing practices, which resulted in a dramatic increase in the use of health facilities for birth from 6% to 83% of deliveries and the presence of skilled attendants from 58% to 95% of deliveries across a two-year period. This study is the most relevant comparison due to the similarity in the target population and region, the situational context of presenting services within an existing health center, and the adaptation of traditional healing methods to a particular public health issue. This study generates clear evidence that integrating traditional medicine into public health services significantly enhances the health outcomes of indigenous populations by improving the health service delivery processes.

4.4 List of Key Elements

In reviewing the literature and the program development process, multiple key elements have been identified as essential to implementing an integrated health program. The success of integrative medicine lies in the meaningful application of patient-centered approaches, cultural competency and humanistic values that are a core aspect of *curanderismo*. While selecting community engagement methods and creating implementation plans are necessary to the operational and logistical aspects of program development, these methods and implementation processes must be carried out by actively incorporating the following values and principles into the work.

Table 13 Principles for Integrative Health Programs

Centering the individual and not the diagnosis or health conditions.
Empathy through attentive listening and mindful communication.
Acknowledgement of power dynamics and the creation of reciprocal relationships between providers and patients.
Respect for ancestral wisdom and tradition as foundational to medicine.
Emphasis on communal and collaborative relationships for encouraging healing.
Awareness and respect for cultural differences; understanding coexistence for methods of healing.

The application of such principles creates a foundational philosophy for approaching public health practice and incorporating traditional healing systems, which have human-centered values built into its approach. Ultimately, these elements should transcend the specific methods

utilized in program development and be incorporated into the everyday practices of all health providers and healers.

5.0 Conclusion

The purpose of the program development was to identify and examine the elements that are necessary for the integration of traditional medicine into public health programming for a diverse population. By choosing a specific traditional healing system such as *curanderismo* and applying it to a public health program to increase access to healthcare options and improve health outcomes for a marginalized and under resourced community, we are able to examine a specific pathway to accomplishing program objectives and reaching public health goals. The analysis of these elements through literature research and designing a program reveals that there are an endless number of combinations and pathways and there is no one particular way to approach public health programming. Integration of traditional medicine into public health programming should entail not only operational and logistical aspects of program design but find ways to fully integrate the philosophy and values of traditional medicine to increase access to healthcare and improve health on all levels for diverse populations.

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