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Health promoting behaviors, perimenstrual symptoms, and Chinese herbal use among childbearing-age Chinese American women

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Health Promoting Behaviors, Perimenstrual Symptoms, and Chinese Herbal Use Among Childbearing-Age Chinese American Women

by

Mercy Wey

DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF PHILOSOPHY

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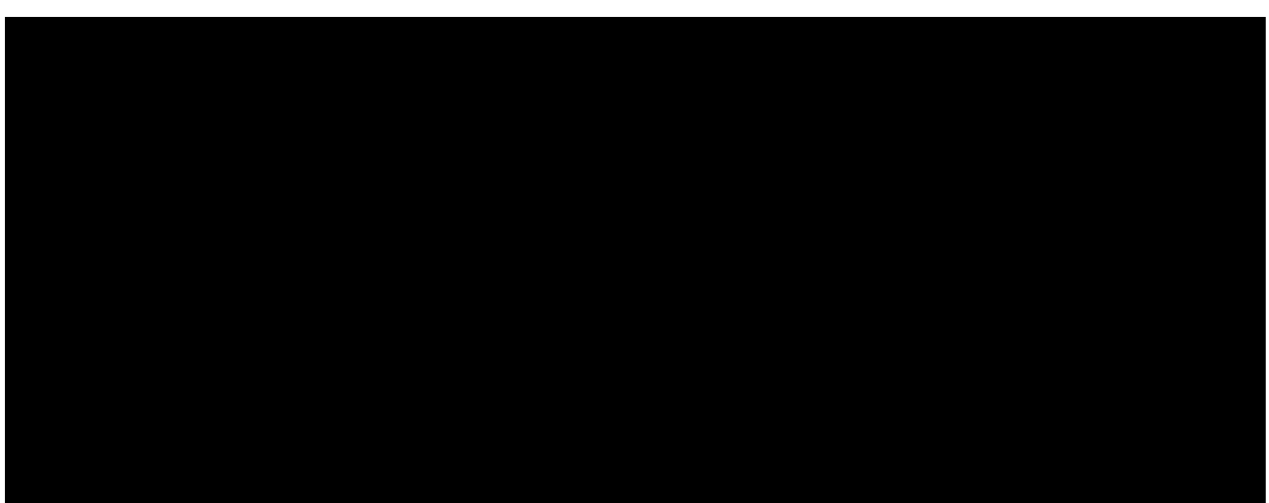

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Dedication and Acknowledgements

The completion of this dissertation represents the most challenging, yet the most exhilarating and rewarding journey that I have traveled. It has been a journey filled with endless understanding, unwavering support, compassion, and friendship from individuals that I have known and those who I have come to know in the process. This dissertation is an outcome of the joint efforts of many people and it would not have been possible without the guidance, wisdom, and support from these individuals.

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The completion of this dissertation does not mean the end of the journey. It is indicative of more responsibility and further learning in the years to come. This journey has taught me to be humble and appreciative of the gifts that have been given to me by so many supportive individuals. The completion of this dissertation is only the commencement of a lifelong scholastic endeavor and the beginning of my mission to reach out to those who have been left behind.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Figure Page

Health Promoting Behaviors, Perimenstrual Symptoms, and Chinese Herbal Use Among Childbearing-Age Chinese American Women

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University of California, San Francisco, 2005

The Chinese are deeply influenced by traditional Chinese culture. Chinese herbal use is a common practice to enhance reproductive health. "Good" menstrual health facilitates fertility and sets a positive stage for pregnancy during the childbearing years. Many Chinese Americans use traditional Chinese health practices, but they are less likely to disclose these practices. Although the upward trend of herbal use is more prevalent among women and ethnic minorities, little data are available about herbal use in these populations.

The overall aim of this dissertation was to examine the influences of health promoting behaviors and the perimenstrual symptom experience on Chinese herbal use among childbearing-age Chinese American women from the theoretical perspectives of Chinese culture, women's health, and health promotion. This cross-sectional, descriptive study included 103 Chinese American women, 21 to 40 years, responding to self-administered questionnaires. Follow-up data were collected prospectively on a subset of the women regarding their perimenstrual symptoms during menstruation.

Over 90% of women reported past use of Chinese herbs; 22% were current herbal users; and 70% had consumed Chinese herbs for relief of perimenstrual symptoms, with 55% to 95% of them experiencing relief. Current herbal users were significantly less acculturated. The primary reason for using Chinese herbs was enhanced sense of well-

being. A majority of herbal users did not inform their Western health provider of their herbal use. Being less acculturated and engaging in nutrition-related health promoting behaviors were statistically significant determinants of Chinese herbal use.

Most women experienced minimal severity of perimenstrual symptoms. Abdominal bloating, fatigue, and breast soreness were the most prevalent and severe symptoms reported retrospectively and prospectively. Uterine cramps were more prevalent during the menstrual period only. Although there were no statistically significant perimenstrual symptom differences between herbal and non-herbal users, women who reported a higher severity of sleep disturbance and emotional related perimenstrual symptoms were more likely to use Chinese herbs.

Congruent with Chinese culture, which values health promotion, a majority of the women were relatively healthy and engaged routinely in health promoting behaviors. One such health promoting practice was the use of Chinese herbs for relief of perimenstrual symptoms.

Approved:

Catherine M. Waters

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Dissertation Chairperson

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Chapter I

Introduction

Chinese Americans are the fastest and largest growing of the Asian populations; they comprise 24.3% of the Asian populations in the United States (U.S. Bureau of Census, 2001). The Chinese are deeply influenced by traditional Chinese culture, which values health promotion and emphasizes the importance of *yin* and *yang* balance to promote health. They are well known for using Chinese herbs and other types of complementary and alternative therapies to promote, maintain and restore health, as well as for disease prevention (Kelly et al., 2005). These Chinese cultural health traditions are estimated to be practiced by 35% to 54% of Chinese Americans (Jang et al., 1998), who use these traditional Chinese health practices in lieu of the conventional United States health care system (Ma, 1999a, 2000; Wong et al., 1998), and who are less likely to disclose these practices to Western health care providers (Cassidy, 1998a, 1998b; Eisenberg et al., 1998; Greger, 2001). They are more likely to be women, younger, and foreign-born (Wong et al., 1998).

The use of Chinese herbs is a common practice among childbearing-age Chinese women for the purposes of health promotion and the enhancement of reproductive health, especially during the postpartum period, and in treating a number of gynecological conditions, such as dysmenorrhea and menopause (Tien, 2004). "Good" menstrual health facilitates fertility and sets a positive stage for pregnancy during the childbearing years. Under traditional Chinese culture and health beliefs and principles, reproductive health is an essential indicator of a woman's overall health status (Chen, 1983; Cheung, 1997; Furth, 1987; Furth & Ch'en, 1992). Chinese herbal use is hypothesized to be practiced

widely among Chinese American women for the relief of perimenstrual symptoms; however, its use is relatively undocumented in the Western literature. Perimenstrual symptoms affect more than 40% of American women (Murphy, 2001), and perceived perimenstrual symptoms vary among women of different cultures (World Health Organization, 1981). Minimal research, however, has been conducted to examine the perimenstrual symptom experience and the health practices used to alleviate perimenstrual symptoms among ethnically and racially diverse groups of women. These women's health behaviors and practices may not be parallel with Western standards.

Purpose of the Study

The overall aim of this dissertation is to examine the influences of health promoting behaviors and the perimenstrual symptom experience on Chinese herbal use among childbearing-age Chinese American women from the theoretical perspectives of traditional Chinese culture and medicine, women's health, and health promotion. The three purposes are to (a) describe the patterns and characteristics of Chinese herbal use among childbearing-age Chinese American women, (b) describe health promoting behaviors and its influence on Chinese herbal use among childbearing-age Chinese American women, and (c) describe the frequency and severity of perimenstrual symptoms and the influence on Chinese herbal use among childbearing-age Chinese American women.

Content of the Dissertation

Chapter II provides a description of the theoretical frameworks that are used to guide the study. Specifically, Chapter II explores health promotion within traditional Chinese culture, health beliefs and principles, specifically Traditional Chinese Medicine, and

within the Health Promotion Model, which is grounded in Western culture, health beliefs and principles. The two models are explored across worldview of person, philosophical foundation, theoretical level, nature of existence, environment, forces/determinants, and vital substances needed for health. The goal is to be able to better understand and appreciate the health promoting practices that lead to preventive and therapeutic interventions in Chinese Americans within their sociocultural context. A modified version of this chapter was submitted as a manuscript to and is under review by the *Advances in Nursing Science* journal.

Chapters III and IV consist of two data-based papers that address the purposes of the study. Chapter III focuses on health promoting behaviors and its influence on Chinese herbal use among childbearing-age Chinese American women, taking into consideration level of acculturation, perceived health as a benefit, herbal use side effects as a barrier, and the cultural belief that some problems cannot be resolved by Western medicine as a personal factor. Although the upward trend of herbal use appears to be more prevalent among women and ethnic minorities, little information is available about the use of complementary and alternative therapies to promote health in these populations (Foote et al., 2003; Mackenzie et al., 2003; Yu et al., 2004). Much of the evidence is anecdotal. Paper two addresses this gap in knowledge. This paper was submitted to and is under review by the *Public Health Nursing* journal.

Chapter IV describes the frequency and severity of perimenstrual symptoms and the influence on Chinese herbal use among childbearing-age Chinese American women within their bio-psycho-socio-cultural world, using a women's health theoretical perspective. This chapter examines the influences of sociocultural (ethnicity/race) and

biological (menstrual cycle) factors on the symptom experience (type, frequency and severity of perimenstrual symptoms) and symptom response (Chinese herbal use) in order to appreciate childbearing-age Chinese women's reproductive health experience. This paper was submitted to and is under review by the *Journal of Obstetric, Gynecologic and Neonatal Nursing*.

The entire dissertation is devoted to enhance the understanding of adherence to traditional health practices by childbearing-age Chinese American women for health promotion and disease prevention, specifically as these concepts relate to reproductive health. The ultimate goal of this dissertation study is to stimulate further study that will add to the body of knowledge of the health care practices of Chinese Americans, and hopefully, help to improve their health outcomes by enhancing understanding and communication between Chinese American clients and Western health care providers. The concluding chapter, Chapter V, presents the summary, conclusions, implications, and recommendations for further study.

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Chapter II

Theoretical Framework

The Chinese are well known for practicing the principles of traditional Chinese culture and health beliefs to promote, maintain and restore health through the use of Chinese herbs and other types of complementary and alternative therapies (Kelly et al., 2005). These Chinese cultural health traditions are estimated to be practiced by 35% to 54% of Chinese Americans (Jang et al., 1998) and 46% to 84% of Chinese Americans and Chinese Canadians (Chan & Chang, 1976a, 1976b; Ka, 1998). Many Chinese Americans use traditional Chinese health practices in lieu of the conventional health care system in the United States (US) (Ma, 1999a, 2000; Wong et al., 1998), and they are less likely to disclose these practices to Western health care providers (Cassidy, 1998a, 1998b; Eisenberg et al., 1998; Greger, 2001). Chinese Americans are the fastest and largest growing of the Asian populations; they comprise 65% of the Asian populations in the US (U.S. Bureau of Census, 2001).

Health promotion is integral to traditional Chinese culture, health beliefs and principles (Chen, 1996; Lee et al., 1996; Spector, 2000; Yu et al., 2004). Health promotion is also a central concept to many health behavior and health education theories grounded in Western culture, health beliefs and principles (Glanz, Rimer, & Lewis, 2002). One such theory is Pender's Health Promotion Model (HPM) (Pender et al., 2006). Within this framework, health promoting behaviors are conceptualized as activities that lead to a higher level of health and are driven by a desire for health rather than a fear of a disease (Pender, 1987). The HPM is applicable to any health behavior in which threat is not proposed as a major source of motivation of the behavior (Pender et al., 2002). The

HPM is appropriate to understand health promotion, which is valued by Chinese persons for health promotion and disease prevention.

Thus, the purpose of this chapter is to explore health promotion within traditional Chinese culture, health beliefs and principles, specifically Traditional Chinese Medicine, and within the Health Promotion Model, which is grounded in Western culture, health beliefs and principles. The goal is to be able to better understand and appreciate the health promoting practices that lead to preventive and therapeutic interventions in Chinese Americans within their sociocultural context. Theory is foundational to research; it provides a sound basis for the choice of methodology and an appropriate framework that helps the researcher with the study design (Chinn & Kramer, 2003). Meleis (1991) suggests that whichever research design is chosen to study a particular cultural group, it must be mediated through an understanding of that cultural group to assure that the research is relevant and valid for the targeted cultural group.

Traditional Chinese Medicine

Historical Evolution of Traditional Chinese Medicine

Chinese people are deeply influenced by traditional Chinese culture and health beliefs. Throughout more than 4,000 years of civilization, the Chinese people have accumulated practices that have helped them to survive in a demanding environment (Beinfield & Korngold, 1991; Spector, 2000). Among these practices is a well-organized and highly respected system of medical knowledge based on recorded observations, experiments and trials and based on rigorous cultural principles and beliefs. This system is commonly referred to as Traditional Chinese Medicine (TCM). Traditional Chinese Medicine originated from ancient Chinese history (Bensky & Gamble, 1993). The *Yellow*

Emperor's Inner Classic, also known as the *Inner Classic*, was complied by unknown authors between 200 B.C. and 100 A.D. It is the oldest major Chinese medical text, and is the first known volume that describes the circulation of blood and its oxygen-carrying capability. The text defines the two basic world principles: *yin* and *yang*. This text provides the theoretical and philosophical foundation of TCM for the diagnosis and treatment of diseases and the promotion of health, as well as it describes systematically and comprehensively the physiology and pathology of the human body as a whole (Nestler, 2002; Nestler & Dovey, 2001).

Philosophical Foundations of Traditional Chinese Medicine

The philosophical influences of Confucianism and Taoism on Chinese culture help to better understand the Chinese underpinnings of health and illness. Both of these philosophical influences affect health, the illness experience, and health decisions of the Chinese. Confucianism teaches the proper relationship of people to each other; it is the basis for veneration of ancestors and respect for elders; and its foundation rests upon the religion and philosophy of Taoism (Beinfield & Korngold, 1991; Spector, 2000). In a profound way, Taoism teaches the proper relationship of people to nature and the relationship of people to each other. Taoism originated from the scholar, Lao-Tzu. The word Tao has several meanings: way, path, or discourse. On the spiritual level, Tao is the way of ultimate reality; it is the way of all nature, the primeval law that regulates all heavenly and earthly matters. To live according to the Tao, one must adapt to the order of nature. The Chinese adhere to the principles of Confucianism and Taoism not only for the health decisions but also for the activities of their daily lives.

Assumptions of Traditional Chinese Medicine

The two main assumptions of TCM constitute holism (Beinfield & Korngold, 1991). One assumption is the notion of unitary, that is, each system of the universe is related to the other, and the systems work as a single unit. The other assumption is that human beings have a close relationship to the environment or nature. The Chinese view the universe as a vast, indivisible entity, and each being has a definite function within it. No one thing can exist without the existence of the others. Each is linked in a chain that consists of concepts related to each other in harmonious balance.

The holism concept is an important concept of TCM in promoting health, preventing disease and treating illness. Within this concept, the human body is regarded as an integral organism, with a special emphasis on the harmonic and integral interrelationship between the viscera and the superficial structures in close physiological proximity and their mutual pathological association. In TCM, the local pathological changes always are considered in conjunction with other tissues and organs of the entire body, instead of being considered alone (Bensky & Gamble, 1993). With the diagnosis of illness, the integration between the human body and the universe/external environment is taken into account; the onset and progress of the disease are considered in conjunction with the geographic, social, and other environmental factors (Spector, 2000).

Concepts of Traditional Chinese Medicine

Yin and yang. The *yin-yang* principle is fundamental to Chinese philosophy and is the single most important principle of TCM. It is a major tool for classifying health phenomena. *Yin* stores the vital strength of life; *yang* protects the body from outside

forces (Spector, 2000). The *yin-yang* concept was first introduced in the *Book of Change (I Ching)* circa 800 B.C (Nestler, 2002; Nestler & Dovey, 2001). The *yin-yang* principle describes a series of relationships among opposites or opposing forces (Beinfield & Korngold, 1991). This opposition, which works in unison, is the motivating force responsible for change for everything in the Universe. The *yin-yang* dichotomy was derived from the Taoist philosophy of a "right way," which occurs at its best when the path of life is harmonious with universal forces.

The forces of yin and yang are dynamic and complementary; together, they make up the entire circle; and both forces are necessary for the whole circle to exist and function (Beinfeild & Korngold, 1991). The *yin-yang* symbol, Tai-Chi, illustrates the complementary nature of these two forces, which cannot exist without each other (see Figure 1). Within *yin*, there is *yang*; within *yang* there is *yin*. When either force reaches its extreme, it becomes the other. *Yang* represents outside, active, rising, warm, bright, and functional. *Yin* represents inside, quiet, decreasing, cold, and dark. *Yin* stores the vital strength of life; *yang* protects the body from outside forces (Spector, 2000).

Figure 1. Tai-Chi, The Symbol of *Yin* and *Yang*.

The ancient Chinese reasoned that since the human race was part of the universe, a parallel could be drawn between *yin* and *yang* forces (Nestler & Dovey, 2001). The human body is regarded as a small universe and is governed by the yin-yang principle (Spector, 2000) (see Table 1). The human body structure, systems and physical activities are divided into two realms of *yin* and *yang*. For instance, the back is *yang*, the abdomen is *yin*; cavities are yang, organs are *yin*; fever is *yang*, cold is *yin*; and inside of the body is *yin*, the surface of the body is *yang*. The five ts'ang viscera—liver, heart, spleen, lungs, and kidneys—are *yang*. The six fu structures—gallbladder, stomach, large intestine, small intestine, bladder, and the lymph system —are *yin*. Diseases that occur during the winter and spring are *yin*; those diseases that occur during the summer and fall are *yang*. If *yin* and *yang* are in balance, the person will be in good health.

Table 1. *Correspondence of Yin-Yang Principle*

Yin	***Yang***
Cold/winter	Hot/summer
Watery	Dry
Heavy	Light
Interior	Exterior
Female	Male
Deficiency	Excess
Hidden	Revealed
Chronic	Acute
Earth	Heaven
Night/darkness	Day/brightness
Vegetables	Meat
Front/inside of body	Back/outside of body
Blood	Energy
Moist	Dry

Within TCM, "good" health is dependent on the balance or the harmony between *yin* and *yang*; it is regarded as the root and cause of life and health (Spector, 2000). There is no completeness without yin and yang in balance or in harmony. Illness is the disharmony

of *yin* and *yang*, a disharmony that leads to pathological changes as a result of an excess or deficiency with one of the two forces. These changes lead to disturbances of vital energy and blood, and malfunctioning of the viscera. If *yin* dominates *yang*, one may feel cold, weak, pale, and lacking in spirit and energy. Examples are shortness of breath and dizziness. If *yang* is overly strong, one may feel hot or feverish, thirsty, restless, or quick-tempered. Examples are sore throat and insomnia.

Hot and cold. Traditional Chinese dietary therapy divides foods into two categories, and uses the terms "hot" and "cold" to describe foods (Liu & Peck, 1996). Hot and cold foods are defined by the types and nature of foods rather than the temperature. In traditional Chinese dietary therapy, the nature of foods is categorized as hot, cold, cool, warm, or neutral. Hot foods are believed to provide warmth, replenish the blood, restore energy, dissolve blood clots, and improve circulation. They generally tend to be sticky, fatty, oily, and made from animal parts, and are cooked for a long time. Cold foods are taken to cool down and dissipate body heat. They tend to be soupy and watery, eaten raw or lightly cooked, and are relatively low in calories.

In order to maintain health, traditional Chinese dietary therapy applies the hot-cold principle to counteract the yin-yang symptoms for disease prevention and health promotion (Beinfield & Korngold, 1991; Liu & Peck, 1996). The Chinese believe that it is necessary to balance hot and cold in daily dietary intake, since an excess or deficiency of one or the other leads to ill health. Hot or cold foods should be consumed in a proper balance, taking into consideration of seasonal variations and the individual's body constitution and state of health. Hot foods are used to treat *yin* conditions, whereas cold

foods are used to counteract *yang* conditions. For example, hot foods should be eaten during the winter by postpartum and menstruating women and for the generation of energy; and cold foods should be consumed during the summer for treating dry lips and a sore throat, and for relieving irritability.

Five elements. The five element principle describes the parallelism and synchronicity of events in the inner and outer world of the human organism (Beinfield & Korngold, 1991; Liu & Peck, 1996). The five elements are wood, fire, earth, metal, and water, which represent five sorts of fundamental processes. Each of five elements corresponds with five tastes of foods, five climates, and five personality types. The five vital organs are the heart, spleen, lungs, kidneys, and liver. The five climates are spring, summer, late summer, autumn, and winter. The five tastes of foods are bitter, sweet, pungent/hot, salty, and sour.

The five-element principle explains the relationship between the human body and the external environment, as well as the physiological and pathological relationships among the internal organs. Interpromotion means that one element promotes or generates the other element in the order of wood, fire, earth, metal, and water. Interaction means that one element acts on or controls another in a different order. For example, wood acts on or controls the earth; and earth acts on or control water. Each element represents an internal organ in the body. For example, the liver is associated with wood, the heart with fire, the spleen with earth, the lung with metal, and the kidney with water. Clinically, pathological changes are thought to occur if these dynamic balances are interrupted or destroyed (Lao, 1999). The five elements in relation to vital organs, tastes of foods, and seasons are illustrated in figure 2.

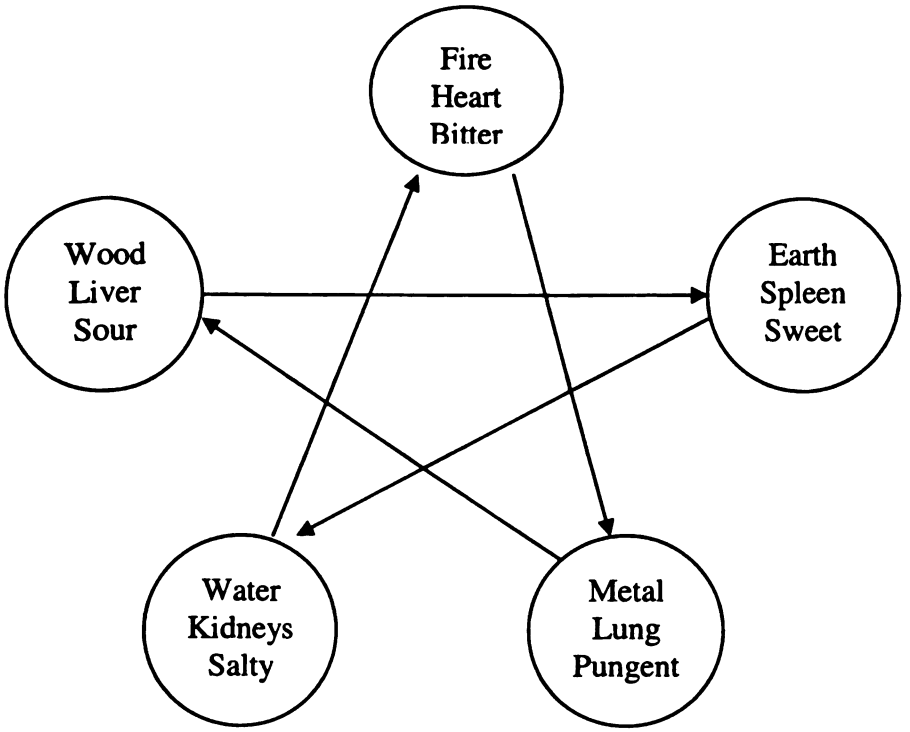

Figure 2. The Five Elements Principle.

Vital substances: Qi, blood, and essence.

Qi. Literally defined, *qi* is "vital energy", which is the creative, formative, or motive force, and a fundamental substance of the body. *Qi* is a central concept in TCM; it is an essential substance for maintaining the activities of life and all of the processes that characterize livening entities (Lao, 1999; Spector, 2000); and it is an invisible substance, as well as an immaterial force that has palpable and observable manifestations (Beinfield & Korngold, 1991). *Qi* governs the shape and activities of the body and its process of forming and organizing itself. The Chinese character for qi is made up of two symbols: the buttom symbol, which depicts uncooked rice; and the top symbol, which depicts steam, vapor, or gas. Together they are translated as "life force" or "energy." *Qi* also implies the totality of blood, moisture, and the total summation of the life of the organism; and the quality of *qi* is observed in the material that it creates (Liu & Peck, 1996).

"Life force" or "energy" is derived from the foods that we eat and the air that we breathe. Consequently, the quality of *qi* is essential for maintaining good health (Liu & Peck, 1996). The highly refined essence of food *qi* and air *qi* in the body become one entity known as "pure" or "righteous" *qi*; and defensive *qi* is the activity of adapting to influences, such as weather or mobilizing resistance to pathogenic microorganisms and noxious substances in the environment (Beinfield & Korngold, 1991). Pathologies of *qi* are referred to as stagnant *qi*, when *qi* is "stuck" or not moving smoothly throughout the entire body or a specific part of the body; deficiency qi means there is not enough *qi* to supply the body's energy requirements; sinking *qi* is a severe form of qi deficiency; and rebellious *qi* presents by *qi* flowing in a direction opposite of its normal flow (Nestler, 2002; Nestler & Dovey, 2001).

Blood. Within TCM, the concept blood is a material substance as well as the process of generating, distributing, and storing nutrients (Beinfield & Korngold, 1991). Blood is a *yin* substance that circulates primarily in the blood vessels, but also in the meridians. Blood has two forms: the blood that flows within our blood vessels, and an unseen blood that flows within the acupuncture channels or meridians. Blood and *qi* have a special relationship. *Qi* is the commander of blood, and blood is the mother of *qi*. The functions of blood are primarily to nourish and secondarily to moisten the body. It is common for pathologies of blood and *qi* to occur concurrently. The most common examples are *qi* and blood stagnation, or *qi* and blood deficiency (Nestler & Dovey, 2001).

Essence. The concept essence, *"jin"* is inherited from each parent at birth and determines one's basic constitution, strength, and vitality (Nestler & Dovey, 2001). Essence is close to the Western concept of genetic inheritance and is responsible for birth,

growth, and development. It is also the basis of sexual health because it is the material basis for the production of sperm in men and ova in women. Due to its scarcity, this finite substance is to be safeguarded throughout life. Essence of *"jing"* is the core fundamental substance, and it directs all aspects of our growth through time- conception, growth, maturity, reproduction, and aging. It is the depletion of the essence over time that brings about aging. Depletion of essence can be caused by excessive sexual activity and stressful life styles. Some forms of TCM, such as qi gong, tai chi, and proper nutrition, can help replenish part of depleted essence (Nestler, 2002).

Health Promotion Model

Historical Evolution of the Health Promotion Model

The HPM is an interpersonal model that focuses on the multidimensional nature of persons interacting with their social and physical environments as they pursue health (Pender et al., 2006). The HPM evolves primarily from the Health Belief Model, an intrapersonal, self-responsibility theory of health protection (Janz & Becker, 1984), and Social Cognitive Theory, an interpersonal theory of triadic reciprocal determinism among cognition, behavior, and environmental factors (Bandura, 1986, 1997, 2004). Both of these models are rooted in the behavioral science of expectancy-value theory. The HPM integrates behavioral science as well as nursing science perspectives on influencing health promoting behaviors. Unlike the Health Belief Model, threat or fear is presumed to not be a source of motivation for health behavior. Rather, the HPM is a competence- or approach-oriented model.

Assumptions of the Health Promotion Model

The underlying assumptions of the HPM emphasize the active role of individuals in engaging and maintaining health behaviors and in modifying the environmental context for health behaviors (Pender et al., 2006). The assumptions are individuals have the capacity for self-reflection and self-awareness; they value positive growth and self-development; they are able to assess their competencies; they seek to maintain balance between the person-environment interaction; and health professionals are an essential part of the environment, which exerts influence on persons across the lifespan.

Concepts of the Health Promotion Model

The HPM provides a guide for exploring the complex biopsychosocial processes that motivate individuals to engage in behaviors directed toward the promotion of health (behavioral outcome), taking into consideration individual characteristics and experiences and behavior-specific cognitions and affect (Pender et al., 2006) (see Figure 3). Health promoting behaviors are operationalized as health responsibility, physical activity, nutrition, spiritual growth, interpersonal relationships, and stress management (Walker & Hill-Polerecky, 1995; Walker et al., 1987). Individual characteristics and experiences are comprised of prior related behavior and personal factors (biological, psychological, and sociocultural) (Pender et al., 2006). Among these determinants, the six concepts subsumed under behavior-specific cognitions and affect are considered to be major motivational influences on health behavior. The six concepts are (a) perceived benefits of action; (b) perceived barriers to action; (c) perceived self-efficacy; (d) activity-related affect; (e) interpersonal influences; and (f) situational influences.

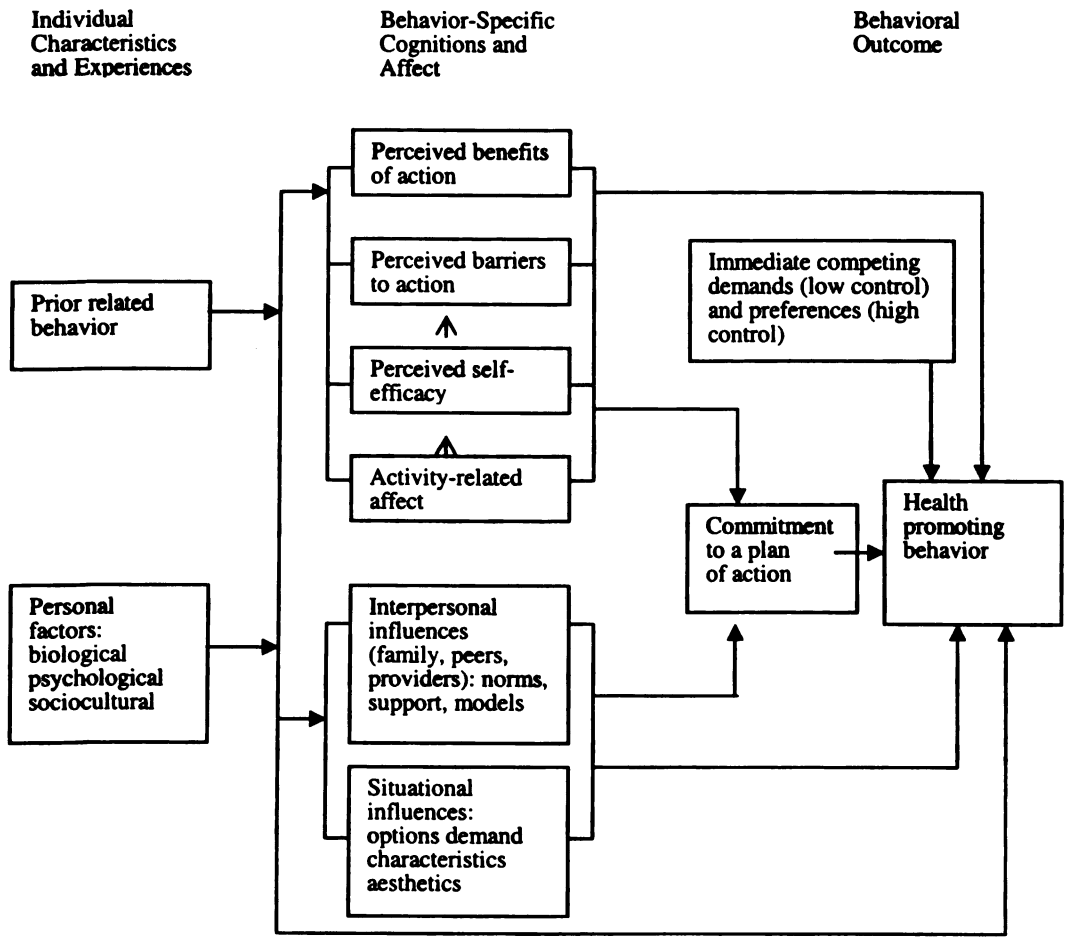

Figure 3. Health Promotion Model (From Pender, Murdaugh, & Parsons, 2006).

According to Pender et al (2006), perceived benefits of action refer to the anticipated benefits or positive outcome one perceives to occur. Perceived barriers to action refer to imagined or real anticipated barriers that affect intentions to engage in a particular health behavior. Perceived self-efficacy is one's perception of his or her capability to organize and perform a particular course of action. Self-efficacy is developed through four sources of information: performance attainment, vicarious experiences, verbal persuasion, and physiologic states. Perceived self-efficacy is influenced by activity-related affect, which is a feeling that occurs before, during, and

after an activity. Interpersonal influences are cognitions related to the behaviors, beliefs, or attitudes of significant others, such as parents, siblings, peers, or teachers. Interpersonal influences include norms, social support, and modeling. Situational influences refer to perception of options available, demand characteristics, and aesthetic features of the environment.

Discussion

The worldview perspective of a person and philosophical foundation of the HPM and TCM model are understandably different, given its different historical and cultural roots. The TCM model's roots are in religion and philosophy, and the HPM's roots are in positivism (Kuhn, 1970). The TCM model has primarily an organismic worldview (Chinn & Kramer, 2003), where holism is assumed, such that the living organism is postulated to be an integrated, organized entity that interacts actively with the environment, rather than reacting to it. Behavior is associated with structural changes in the organism. The HPM has primarily a mechanistic worldview (Chinn & Kramer, 2003), where the person is inherently at rest, responding in a reactive manner to external forces. Behavior is seen as a linear chain of causes and effects, or stimuli and responses. See Table 2 for the conceptual characteristics of TCM and the HPM.

Both models illustrate the multidimensional aspects of health, which is not merely the absence of disease, and recognize the interrelatedness of multiple internal and external variables that affect one's health behavior. The HPM is presumed to be driven by a desire for health rather than a fear of a disease. Traditional Chinese Medicine is also driven by a desire for health, but fear of a disease is postulated if the principles of TCM are not followed. Thus, there is a branch of TCM that focuses on diagnosis and treatment, which

is based on traditional Chinese culture, health beliefs and principles. The TCM approach emphasizes the importance of the balance of the *yin* and *yang* forces to promote health, which is achieved by the proper use of foods, qi, blood, and essence that are in alignment with the five elements and the universe. The HPM delineates the determinants that influence one's decision to engage in and maintain health promoting behaviors. Both models consider the biological, psychological, sociocultural, and environmental influences on an individual's health.

Table 2. *Conceptual Characteristics of Traditional Chinese Medicine and the Health Promotion Model*

Characteristic	Traditional Chinese Medicine	Health Promotion Model
Worldview of Person	Organicism, holism, unitary	Mechanism
Philosophical Foundation	Religious: Confucianism, Taoism	Positivism, behavioral science
Theoretical Level	Grand, systems	Middle range
Nature of Existence	Harmonious balance: biological, psychological, sociocultural	Balance: biological, psychological, sociocultural
Environment	Universe, five elements	Interpersonal, situational influences
Forces/Determinants	Yin-yang	Individual-cognitions/affect-behavior
Vital Substances for Health	Hot-cold foods, qi, blood, essence	Health responsibility, physical activity, nutrition, spiritual growth, interpersonal relations, stress management

Both theories value and emphasize the importance of health promotion and illness prevention, and both can be used as theoretical underpinnings to guide health promotion research with Chinese Americans. For example, Chinese herbal use as a health promoting

practice among Chinese Americans could be studied within the context of both of these theoretical models. Although no published studies were found that used the HPM as the theoretical basis for Chinese herbal use among Chinese Americans, there are a limited number of studies that used TCM as the theoretical basis. These studies rooted in TCM found that the use of Chinese herbs is integral to traditional Chinese health practices and is a commonly used and undisclosed health promotion practice by Chinese Americans (Jang, Lee, & Woo, 1998; Ma, 1999a; Ma, 1999b).

Implications for Nursing Research and Practice

Incorporation of TCM into the HPM can help to explain the health promoting practices of Chinese Americans who adhere to Chinese culture, health beliefs and principles. The concepts of holism, health promotion and disease prevention (Pender et al., 2006) are congruent with the nursing metaparadigm (Chinn & Kramer, 2003). Each individual is unique, as no single formula will suit everyone. Therefore, a tailored caring and cultural understanding approach for practice and research should be employed, especially when the individual is an immigrant whose health practices may be completely different from Western health practices. Many Americans of an ethnic minority background may not report their use of alternative and complementary or traditional health practices if they fear these health practices will not be accepted by their Western health care practitioner. Therefore, it is essential for health care professionals to be respectful, non-judgmental and demonstrate cultural understanding when caring for clients of different cultural backgrounds, especially clients who are immigrants.

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Chapter III

Chinese Herbal Use as a Health Promoting Practice among Childbearing-Age Chinese American Women

by M. Wey, C. M. Waters, C. J. Portillo, & K. A. Lee

In Review, Public Health Nursing

Abstract

Objective: The purpose of this study was to describe health promoting behaviors and the influence on Chinese herbal use among childbearing-age Chinese American women within the context of the Health Promotion Model.

Design: This cross-sectional, descriptive study included a convenience sample of 103 non-pregnant and non-lactating Chinese American women, aged 21 to 40 years, who were conversant in English and/or Chinese.

Results: Using self-administered questionnaires, 90% of the relatively healthy women reported that in the past, they had used Chinese herbs, mostly herbal tonics. Current herbal users reported significantly less years of education in the US, fewer years in the US, limited English proficiency, and lower acculturation. The primary reason for using Chinese herbs was for an enhanced sense of well-being. A majority of the herbal users did not inform their Western health care provider about using Chinese herbs, and they believed that some health problems cannot be treated by Western medicine. Women who were more acculturated and reported better health were significantly more likely to engage in certain health promoting behaviors, such as interpersonal relationships. Being less acculturated and engaging in more nutrition-related health promoting behaviors were statistically significant determinants of Chinese herbal use.

Conclusion: Congruent with Chinese cultural health beliefs, which focus on health promotion and disease prevention, a majority of the childbearing-age Chinese American women were relatively healthy and routinely engaged in health promoting behaviors. One such health promoting practice was the use of Chinese herbs.

Keywords: Chinese, Herbal Use, Health Promotion, Women

Chinese Herbal Use as a Health Promoting Practice Among Childbearing-Age Chinese American Women

Nearly one-sixth of women in the United States (US) took at least one type of herbal supplement in the past 12 months (Yu et al., 2004). American women are 1.46 times more likely to use herbs and other types of complementary and alternative therapies (CAT) as compared to men, and Asian Americans are three times more likely to use herbs and other types of CAT as compared to Caucasians (Mackenzie et al., 2003). In one study, 46% of Chinese persons reported the use of Chinese herbal therapies in the past year, and they were more likely to be women, younger, and foreign-born (Wong et al., 1998). The nature and usage pattern of CAT is believed to be underestimated, especially for women, ethnic minorities, and younger persons. The use of Chinese herbs is a common practice among childbearing-age Chinese women for the purposes of health promotion and the enhancement of reproductive health, especially during the postpartum period, and in treating a number of gynecological conditions, such as dysmenorrhea and menopause (Tien, 2004).

Background and Significance

The use of CAT as a health promoting practice is on the rise in the US. Health promoting practices are conceptualized as activities that lead to a higher level of health and are driven by a desire for health rather than a fear of disease (Pender, 1987). The National Center for Complementary and Alternative Medicine defines CAT as a group of diverse medical and healthcare systems, practices, and products that are not presently considered a part of conventional medicine (Tindle et al., 2005). Approximately 42.1% of all U.S. adults use at least one form of CAT (Eisenberg et al., 1998), of which herbal

supplement is the most common form of CAT (Tindle et al., 2005). Herbal use by U.S. citizens increased 380% between 1990 and 1997 (Eisenberg, et al., 1998). In 2001 alone, Americans spent $4.2 billion on herbs and other botanical remedies, such as dietary supplements, whose use increased from 14.2% between 1998 and 1999 to 18.8% in 2001 (Kelly et al., 2005).

Many Chinese Americans use Chinese herbs in lieu of the conventional U.S. health care system, and they are less likely to disclose their herbal use to health care providers (Cassidy, 1999; Gregor, 2001; Ka, 1998). The prevalence of herbal use among Chinese Americans in the US and Canada ranges from 46% to 84% (Chan & Chang, 1976a, 1976b; Ka, 1998). The use of Chinese herbs is integral to traditional Chinese therapy and is a commonly used health promotion practice by Chinese Americans (Jang, Lee, & Woo, 1998; Ma, 1999a; Ma, 1999b). Traditional Chinese therapy includes herbal tonics and Chinese dietary therapy, which is known as Chinese herbal cuisine (Chinese herbs and foods that simmer for a long period of time) (Lao, 1999). The practice of using Chinese herbs is not only for the treatment of illness, but it is also used as a preventive measure to strengthen resistance to disease (Kittler & Sucher, 2000). In addition, Chinese herbs are used to improve overall health and sense of well-being, and to maintain balance and harmony, which is conceptualized as a balance between yin and yang (Spector, 2000).

Although the upward trend of herbal use appears to be more prevalent among women and ethnic minorities, little information is available about the use of CAT to promote health in these populations (Foote et al., 2003; Mackenzie et al., 2003; Yu et al., 2004). There is a need to explore further the patterns of CAT use, in particular herbal use, and understand this practice as a health promotion behavior to improve health, especially

among younger, ethnic-minority women. Much of the evidence is anecdotal. To address this gap in knowledge, childbearing-age Chinese American women were the population of focus for this study. In addition, Chinese herbal use is believed to be integral to the health and well-being of Chinese persons and it is the most commonly prescribed therapeutic regimen by traditional Chinese practitioners (Jang et al., 1998; Ma, 1999a; Ma, 1999b). Thus, the purpose of this study was to describe health promoting behaviors and its influence on Chinese herbal use among childbearing-age Chinese American women.

Theoretical Framework

The Health Promotion Model (HPM) was the underlying theoretical framework for the study (Pender, Murdaugh, & Parsons, 2006). The HPM provides a guide for exploring the complex processes that motivate individuals to engage in behaviors directed toward the enhancement of health, taking into consideration individual characteristics and experiences (personal factors) and behavior-specific cognitions and affect (e.g., perceived benefits and perceived barriers). Personal factors include biological, psychological, and sociocultural factors. Health promoting behaviors are conceptualized as activities that lead to a higher level of health and are driven by a desire for health rather than a fear of a disease (Pender, 1987). The HPM is applicable to any health behavior in which threat is not proposed as a major source of motivation of the behavior. The HPM is appropriate to understand the pattern use of Chinese herbs as a health promoting practice that is valued by Chinese persons for health maintenance and disease prevention (Pender, Murdaugh, & Parsons, 2002). The HPM has been tested in community settings, among diverse ethnic minority populations, from adolescence to senescence, in both males and females.

In this study, personal factors included sociodemographic characteristics, acculturation, and the belief that some problems cannot be treated by Western medicine (see Figure 1). Sociodemographic characteristics included age, education, marital status, income, country of birth, health insurance, years in the US, years of education in the US, language preference, and English proficiency. Experienced side effects from Chinese herbal use was conceptualized as a perceived barrier. Perceived health was conceptualized as a perceived benefit. The behavioral outcome was Chinese herbal use. This behavioral outcome was posited to be influenced by six health promoting behaviors: health responsibility, physical activity, nutrition, spiritual growth, interpersonal relationships, and stress management (Pender, et al., 2006).

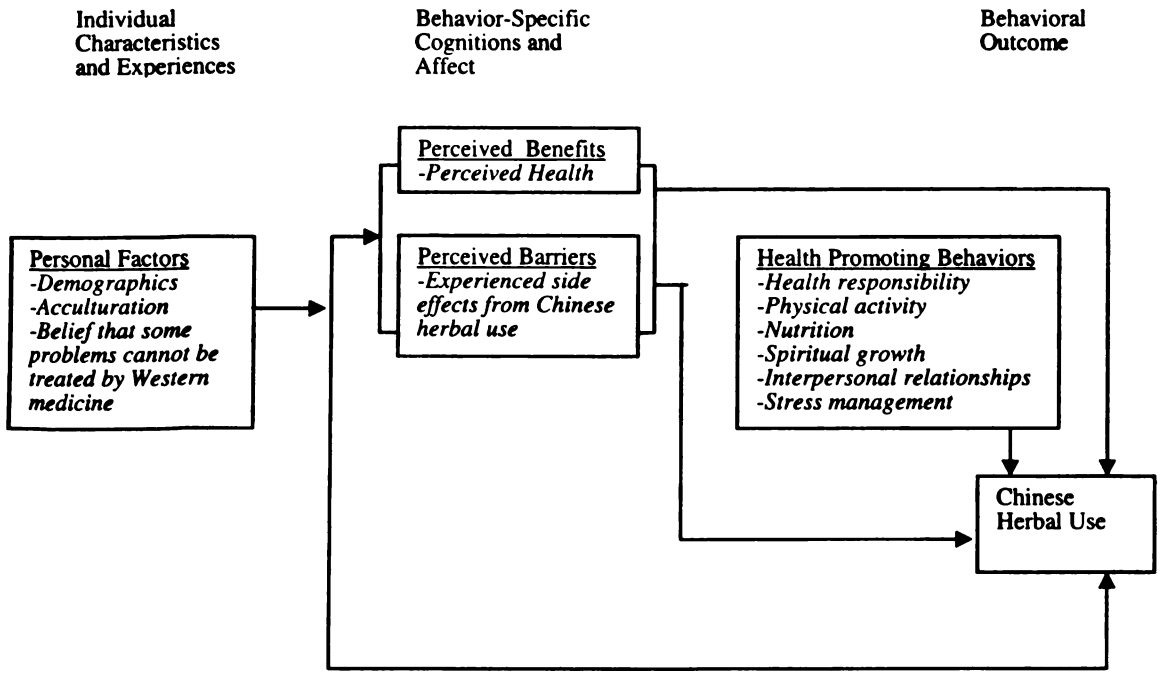

Figure 1. Chinese Herbal Use Conceptualized within the Health Promotion Model (Pender, et al., 2006)

Methods

Design

A cross-sectional, descriptive design was employed to describe health promoting behaviors and its influence on Chinese herbal use among childbearing-age Chinese American women. The study was approved by the University of California, San Francisco Committee on Human Research.

Setting and Sample

Recruitment occurred in communities with dense areas of Chinese Americans throughout the San Francisco Bay area, using flyers, word-of-mouth, and advertisement in the bulletins and newsletters of primary and secondary schools that have a high concentration of Chinese children. Sample selection criteria were non-institutionalized childbearing-age women, who self-identified as Chinese American, and spoke either Chinese or English. Childbearing-age women were defined as females, 21 to 40 years. Of the 500 potential study participants who were contacted through informational sessions or by letters, only 380 women expressed interest in participating in the study. A total of 360 questionnaires were distributed; 122 questionnaires were returned, yielding a response rate of 34%. Of the 122 questionnaires, 19 of them were not used for data analysis due to incompleteness and/or ineligibility. Thus, 103 completed questionnaires were used for data analysis.

This convenience sample was comprised of 103 childbearing-age Chinese American women whose age ranged from 21 to 40 years old (M = 32.09, SD = 4.67, Md =33.00) (see Table 1). A majority of the women were college graduates (68.3%), were employed

at least part-time for wages (54.5%), reported a total annual household income of at least $35,000 (57.1%), had health insurance (89%), and had a primary care physician (75.8%). A majority of the women self-appraised their health as excellent/very good/good (89.3%) and did not use prescription medications (83.3%) or over-the-counter medications (81.7%), although 69.2% of them reported the use of dietary supplements. Approximately 63% of the women were married/partnered and 42% of them had children younger than 5 years old. A majority of the women were foreign-born (91.9%), and the countries of origin included Taiwan (52.5%), China (25.3%), Hong Kong (11.1%), United States (8.1%), and other Asian countries (3%). The average length of time in the US was 11.14 years (*SD* = 7.72). Of the 98% who reported to speak English (98%), 41.4% of the women spoke "some" English and 56.6% of them spoke fluent English.

Measures

Chinese herbal use. Chinese herbal use was the behavioral outcome in this study. It was assessed using an investigator-developed tool, derived from a literature review of Chinese herbs and its use. The review included types and forms of Chinese herbs, methods of preparation, dose, route, frequency and duration, sources of ingredients, reasons for herbal use, and perceived benefits and barriers of herbal use. For the purpose of this study, Chinese herbs referred to any form or preparation of herbs including, but not limited to raw herbs, tablets, pills, powders, herbal soups, herbal teas, inhalation mists, tinctures, ointments, or gels. Cooking herbs were excluded. The use of dietary supplements was also assessed, as some Chinese herbs are commercially packaged and sold as dietary supplements. The unit of analysis for Chinese herbal use was "Are you

currently using any form of Chinese herbs." The dichotomous response options were "yes" or "no."

Health promoting behaviors. Health promoting behaviors, conceptualized to influence Chinese herbal use, were assessed using the Health Promotion Lifestyle Profile II (HPLP II) (Berger & Walker, 1997). The HPLP II consists of 52 items on six health-promoting lifestyle dimensions: spiritual growth, interpersonal relationships, nutrition, physical activity, health responsibility, and stress management. Each subscale consists of 8 to 9 items. Its summated behavior-rating scale uses a 4-point ordinal response format to measure the frequency of health promoting behaviors: (0) never, (1) sometimes, (2) often, or (3) routinely. Scoring yields a total score as well as an individual score on the six dimensions. Higher scores indicate more frequent participation in health promoting lifestyle behaviors.

Content validity of the HPLP II was evaluated for congruence by nursing faculty familiar with the health promotion literature (Walker, Sechrist, & Pender, 1987). The psychometric properties of the tool are adequate and have been documented for a community sample of 712 adults, aged 18 to 92 years (Walker & Hill-Polerecky, 1995). Cronbach's alpha coefficient for internal consistency reliability was reported as $r = .94$ for the total scale and between $r = .79$ and $r = .87$ for the subscales. The 3-week test-retest stability coefficient for the total scale was $r = .89$. Construct validity was examined with traditional factor analysis employing principal axis extraction followed by oblique rotation, which yielded a six-factor solution at levels of .43 or greater and a nuisance factor with no significant loadings.

The Chinese-language version of the HPLP II has been shown also to be reliable and valid (Chan, Chun, Takeuchi, & Chen, 2000; Huang & Chiou, 1996). Cronbach's alpha coefficient for internal consistency of the total scale was adequate at $r = .93$, with reliability coefficients ranging from $r = .74$ to $r = .92$ for the subscales. The test-retest reliability coefficient for the total scale was $r = .84$ and ranged between $r = .68$ and $r = .86$ for the subscales. For this study, Cronbach's alpha coefficient for internal consistency of the Chinese-language version of the HPLP II was adequate at $r = .93$, with reliability coefficients ranging from $r = .69$ to $r = .85$ (see Table 3).

Sociodemographics. Specific sociodemographic data were assessed to obtain individual characteristics and experiences (personal factors) presumed to influence Chinese herbal use. The measure was developed by the investigator. Personal characteristics included age, education, marital status, country of birth, years in the US, years of education in the US, English proficiency, employment status, total annual household income, health care insurance, and language preference. These sociodemographic variables have been shown to be potential confounders in studies with ethnic-minority populations. In addition, participants were asked if they had a personal physician and used prescription and over-the-counter medications.

Acculturation. Acculturation was conceptualized as a personal factor that could influence Chinese herbal use; it was assessed using the Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA) (Suinn et al., 1987). The SL-ASIA was developed to measure acculturation in Asian-American populations, and was designed to evaluate cognitive, attitudinal, and behavioral content for use in psychological interventions for Asians. The SL-ASIA consists of 21 items regarding language (4 items), identity (4

items), friendship choice (4 items), behaviors including food preferences (5 items), geographic history (3 items), and attitude (1 item). The scale utilizes a 1- to 5-point scale format. Acculturation scores range from 1.00 (low acculturation) to 5.00 (high acculturation) with 5.00 reflective of assimilation or Western identification, 1.00 reflective of Asian identification, and 3.00 descriptive of a "bicultural" individual. For the purpose of comparison in this study, acculturation level was divided into two discrete categories based on the study's sample mean of 2.17: low acculturation (0.00 to 1.99) and high acculturation (2.00 to 5.00).

Suinn et al (1997) used three criteria to validate the scale: generational level, length of residence in the US, and the question "how would you rate yourself." Analysis of variance was significant for each criterion used. Reliability was calculated using Cronbach's alpha internal consistency coefficient, which yielded an acceptable reliability of $r = .88$ for the total scale. Construct validity was determined by factor analysis. The SL-ASIA has been translated into Chinese. No psychometric testing or validation of the quality of translation has been done on the Chinese version of the scale (R. Suinn, personal communication). For this study, Cronbach's alpha coefficient for internal consistency of the Chinese-language version of the SL-ASIA was adequate at $r = .92$.

Traditional Chinese health belief. As a measure of a sociocultural personal factor that could influence Chinese herbal use, participants were asked if they believed that some health problems could not be treated by Western medicine. The dichotomous response options were "yes" or "no." This question was a proxy measure of whether a participant held traditional Chinese health beliefs.

Perceived health. In this study, perceived health was conceptualized as a perceived benefit, which was presumed to influence Chinese herbal use; it was assessed using the perceived health item of the 36-item Medical Outcome Study Short Form Health Survey (MOS SF-36) (Ware & Sherbourne, 1992). The item is "In general, would you say your health is" (1) excellent, (2) very good, (3) good, (4) fair, or (5) poor. A score can range from 1 to 5, with a lower score indicating better perceived health. For the purpose of comparison in this study, perceived health status was divided into two discrete categories: "excellent/very good" health and "good/fair/poor" health.

The MOS SF-36 is a widely used measure that represents a person's overall well-being or satisfaction with life and has been shown to have a strong relationship to overall health and ability to function (Ware & Sherbourne, 1992). It has been translated into different languages, including Chinese (Ren & Chang, 1998), and it is the most widely used instrument for measuring perceived health in ethnic minorities and immigrants (Ware & Sherbourne, 1995). Cronbach's alpha for internal consistency and test-retest reliability coefficients of both the Chinese (Ren, Amick, Zhou, & Gandek, 1988) and English (McHorney, Ware, Lu, & Sherbourne, 1994) versions have exceeded the minimum standard of $r = .70$.

Side effects from Chinese herbal use. In this study, experienced side effects from Chinese herbal use was conceptualized as a perceived barrier to Chinese herbal use. It was assessed by asking participants if they had experienced side effects from Chinese herbs. The dichotomous response options were "yes" or "no." In addition, the women were asked to describe their side effect experience.

Procedure

All of the study materials including the questionnaires, recruitment letter, and informed consent information sheet were independently translated and back-translated from English to Chinese to ensure semantic equivalence by two Chinese-born, Chinese-English bilingual and bicultural translators. One translator was certified as bilingual in both English and Chinese by the Santa Clara County Department of Public Health, and the other translator was an English teacher for students whose first language is other than English. One translator translated the study materials from English to Chinese, and the other translator translated the study materials from Chinese back to English. The two versions were compared and discussed for resolving discrepancies. Using two independent translators is recommended by Brislin (1986). The use of two independent translators helps to prevent bias and preference of use or choice for a particular term, expression, or phrase. All of the study materials were pretested and were formatted with English and Chinese translations side-by-side.

Data were collected at one point in time. Any person who contacted the researcher as a result of recruitment efforts were screened for eligibility, given details about the study, and informed of her rights as a research participant. If the participant agreed voluntarily to participate in the study, a packet that was mailed to the participant included an invitation letter, informed consent information sheet, the self-administered questionnaires, and a self-addressed, stamped envelope to return the completed questionnaires. A $5 dollar bill was mailed to the each participant upon the receipt of a completed survey questionnaire. No follow-up was done; it was assumed that if the questionnaires were not returned, the participant was not interested in participating in the study.

Data Analysis

Summary descriptive statistics were computed for sociodemographic characteristics, characteristics of Chinese herbal use, health promoting behaviors, perceived health, and acculturation. Depending on the level of data, chi-square and/or independent student's *t*-test analyses were computed for mean score response differences between herbal use and sociodemographic characteristics, health promoting behaviors, acculturation, and perceived health. Logistic regression analysis was used to explore the determinants of Chinese herbal use. Predictor variables were entered concurrently. The overall level of significance, $p \leq .05$, two-tailed, was adjusted as appropriate using a Bonferroni correction to control for the experiment-wise error (Type I) rate associated with multiple pairwise comparisons (Munro & Page, 1993). Data were entered and analyses were computed using SPSS Version 13 statistical software.

Findings

Chinese Herbal Use

Ninety percent of the childbearing-age Chinese American women reported that they had used Chinese herbs at some point in their lives. Response differences for current use of Chinese herbs were not statistically significant for perceived health, but were statistically significant across certain sociodemographic characteristics (see Table 1). In comparison to non-herbal users, current herbal users reported on average less years of education in the US ($t(35) = 3.11$; $M = 3.25$, $SD = 4.51$ vs. $M = 7.68$, $SD = 7.09$; *95% CI*: 1.54-7.32) and less years in the US ($t(46) = 3.60$); $M = 7.00$, $SD = 5.06$ vs. $M = 12.22$, $SD = 7.95$; *95% CI*: 2.31-8.14); they had lower acculturation scores ($t(77) = 4.593$; $M = 1.85$, $SD = 0.26$ vs. $M = 2.25$, $SD = 0.60$; *95% CI*: 0.23-0.58); and a greater

proportion of them were not fluent in English ($X^2(1, N=99) = 7.199$; 70% vs. 36.7%;), had a personal physician ($X^2(1, N=99) = 4.612$; 94.7% vs. 71.3%), and used dietary supplements ($X^2(1, N=93) = 5.930$; 90.5% vs. 62.5%).

Twenty-two percent ($n = 21$) of the childbearing-age Chinese American women reported that they were using Chinese herbs at the time of data collection. (See Table 2 for the current Chinese herbal users' characteristics). Of the 21 current Chinese herbal users, 15 reported using one Chinese herb and 6 used two or more Chinese herbs at the same time. Sixty-five percent of these current herbal users had been using Chinese herbs for less than 1 year and 15% had been using Chinese herbs for more than 10 years.

Among the different forms of Chinese herbal preparation, herbal tonics, which are cooked from raw herbs, were the most common form of herbal preparation used by current herbal users (57.1%). Other frequently used Chinese herbal preparations were Chinese herbal soup (33.3%), Chinese herbal tonic stew or herbal cuisine (28.6%), and Chinese herbal tea (23.8%). Two-thirds of the current Chinese herbal users started taking Chinese herbs because of a recommendation by a family member or friend, and two-thirds of them obtained Chinese herbs from a Chinese herbal shop.

Seventy-one percent of the current herbal users took Chinese herbs for an enhanced sense of well-being, 28.6% of them took Chinese herbs for prevention of disease, and 23.8% of them reported that they took Chinese herbs for treatment of symptoms, such as pain. Approximately 95% of the current herbal users denied experiencing side effects from Chinese herbs; 81% did not inform their Western health care provider about their use of Chinese herbs; all of them denied being treated for health problems by a Western health care provider; and 71.4% believed that some health problems, such as circulatory

and menstrual conditions, cannot be treated by Western medicine. About 91% of these women were not taking prescriptive medications and 71% of them were not taking over-the-counter medications, although 91% of the 21 current herbal users were taking dietary supplements.

Health Promoting Behaviors

See Table 3 for summary statistics and reliability scores for the HPLP II. Total scores on the HPLP II ranged from 1.60 to 3.60 (M = 2.64, SD = 0.35). The subscale mean score was 2.44 (SD = 0.49) for health responsibility, 2.18 (SD = 0.51) for physical activity, 2.71 (SD = 0.43) for nutrition, 2.97 (SD = .45) for spiritual growth, 2.94 (SD = 0.44) for interpersonal relationships, and 2.54 (SD = 0.43) for stress management.

There were no statistically significant differences for frequency of overall health promotion behavior or specific health promoting lifestyle behaviors between herbal users and non-herbal users. The one exception was for the nutrition subscale ($t(101) = -1.931$, p = .05). Herbal users reported a higher frequency of positive nutrition health behavior than did non-herbal users (M = 2.87, SD = 0.29 vs. M = 2.67, SD = 0.46; *95% CI*: -0.41-0.01).

There were statistically significant acculturation and perceived health differences for certain health promoting lifestyle behaviors. In comparison to women (n=45) who were categorized as "low acculturation," the 58 women who were categorized as "high acculturation" had higher health promoting mean scores for overall health promotion, physical activity, and interpersonal relationships (see Table 4). Women (n = 53) who reported "excellent/very good" health had higher health promoting mean scores for the total HPLP, spiritual growth, interpersonal relationships, and stress management as compared to women (n = 50) who reported "good/fair/poor" health (see Table 5).

Determinants of Chinese Herbal Use

Logistic regression was conducted to explore the determinants of Chinese herbal use, the outcome variable; it was coded 0 for the non-current herbal users and 1 for the 21 current herbal users. The variables selected for the model are based on the researcher's conceptualization of Chinese herbal use within Pender's Health Promotion Model, described previously in this paper. Demographic characteristics, such as age, education, marital status, total annual income, and health insurance, were not statistically significant as confounders, and thus not included in the model. Acculturation served as a proxy for years in the US, years of education in the US, language preference, and English proficiency. The belief that some problems cannot be treated by Western medicine (sociocultural personal factor); the conceptual benefit, perceived health and the conceptual barrier, experienced side effects from Chinese herbs (behavior-specific cognitions and affect); and health promoting lifestyle behaviors were not statistically significant determinants of Chinese herbal use. However, the personal factor, acculturation and the health promoting lifestyle behavior, nutrition, were statistically significant determinants of Chinese herbal use (see Table 6). Childbearing-age Chinese American women who were current herbal users were eight times more likely to report a higher frequency of positive nutrition health behavior and were 11 times less likely to be acculturated as compared to non-current herbal users.

Discussion

Findings from national surveys indicate that there is an upward trend of the use of CAT, in particular herbal use, as a health promoting practice. This upward trend appears to be more prevalent among women, ethnic minorities, and younger persons, although the

exact estimates are unknown because of the small representation of these groups in national studies (Foote et al., 2003; Mackenzie et al., 2003; Yu et al., 2004). This study was designed to describe health promoting behaviors and its influence on Chinese herbal use among childbearing-age Chinese American women, within the conceptual context of the Health Promotion Model (Pender et al., 2006).

In general, a majority of the childbearing-age Chinese American women engaged routinely in health promoting lifestyle behaviors. Women (n=53) who reported excellent or very good health reported significantly more positive spiritual growth and much better interpersonal relationships and stress management in comparison to women (n=50) who reported good, fair or poor health. This finding is consistent with a study by Ma (1999b), which found that perceived health was positively associated with health promoting lifestyle behaviors in Chinese Americans. In the current study, childbearing-age Chinese women who were more acculturated were significantly more likely to report more frequent participation in health promotion lifestyle behaviors, overall, but, especially for physical activity and interpersonal relationships. The association between level of acculturation and perceive health has been documented in the literature among the general population of Asian Americans (Ma et al., 2004; Mooteri et al., 2004; Song et al., 2004), however, the relationship between acculturation and health promoting behaviors remains unclear and warrants further investigation among the Asian American populations. In general, perceived health did not differ between herbal users and non-herbal users, for a majority of the women were relatively healthy. This finding is in contrast to Ma's study (1999a), which found that only 42% of Chinese participants who used Chinese herbs reported excellent or very good health.

A majority of the women had used at least one kind of Chinese herb at some point in their lives; more than one-fifth of them were currently using at least one kind of Chinese herb; and those women who were current herbal users had been using herbs for at least 1 year and started using herbs based on the recommendation of a family member or friend, who referred them to a Chinese herbal shop. Most often, access to Chinese herbal shops is obtained through a lay referral network that consists of friends and relatives (Kelner & Wellman, 1997). In this study, the proportions of herbs ever used and herbs currently used are much higher as compared to other studies that have described herbal use in Chinese Americans. The prevalence rates of herbal use among Chinese Americans in the US and Canada are estimated to range from 46% to 84% (Ka, 1998). Findings of one small study indicated that 75% of Chinese American women used Chinese herbal teas to promote general health on a daily basis (Ma, 1999b). In a large study conducted in San Francisco, Chinese herbal use prevalence rates ranged from 35% to 54% among Chinese Americans, and the two major reasons for Chinese herbal use were to promote general health on a daily basis and to treat minor health conditions (Jang et al., 1998).

Consistent with other studies, the 21 women who were current users of Chinese herbs were less acculturated, used more dietary supplements, and were more likely to routinely engage in positive health promoting nutrition behavior compared to women who were non-current users of Chinese herbs. Foote and colleagues (2003) reported that Asian American women were more likely to use dietary supplements as a type of CAT than are other Americans. Acculturation has been shown to be positively associated with physical health in ethnic-minorities (Otero-Sabogal, Sabogal, Perez-Stable, & Hiatt, 1995), and

acculturation has been shown to be an important predictor of both lifestyle health behaviors and mental well-being in Chinese Americans (Ying & Miller, 1992).

Congruent with Chinese cultural beliefs, which focus on disease prevention by achieving and maintaining the balance of inner forces via yin and yang, and findings from other studies, current herbal users in this study primarily used Chinese herbs for an enhanced sense of well-being. In this study, the most common form of Chinese herbal preparation was herbal tonics cooked from raw herbs. In comparison to other types of CAT, Chinese herbs are the most commonly prescribed therapeutic regimen by traditional Chinese health practitioners (Chen, 1996; Ma, 1999a; Wong, Yu, Liu, & Lloyd, 1997; Wong, Jue, Lam, Yeung, & Cham-Wah, 1998). The consumption of herbal tonics is an integral part of the Chinese diet and most Chinese learn and practice herbal cuisine preparation from their parents (Lee, Lee, & Stewart, 1996).

A majority of the women currently using herbs denied experiencing side effects from the Chinese herbs believed that some health problems cannot be treated by Western medicine and denied being treated for health problems by a Western health care provider. Although they had a Western health care provider, they did not inform this individual about their use of Chinese herbs and they were not taking prescriptive or over-the-counter medications. These findings are consistent with other studies where it was reported that persons who used CAT did not inform their health care provider about their CAT use (Eisenberg, et al., 1998). Currently, all Chinese herbs are classified as dietary supplements, not as medicine (Elvin-Lewis, 2001). Adulterations and contamination in commercially prepared and raw forms of Chinese herbs have been reported (Ernst, 1998, 2004; Huang, Wen, & Hsiao, 1997; Ko, 1998), and thus, the safety and quality assurance

for the impurity of Chinese herbs warrant careful examination, as well as the possibilities of drug-herb interactions and side effects (Fugh-Berman & Ernst, 2001).

Low acculturation and nutrition-related health promoting lifestyle practices appear to be major determinants of herbal use in this particular sample of women. Acculturation, especially lack of English proficiency, can be a major barrier to immigrants accessing the U.S. health care system. Jang and colleagues (1998) found that Chinese Americans who were less acculturated were significantly less likely to have health insurance, had limited or no access to health services, and underutilized health services. Health care providers should encourage open discussion to explore herbal use and other traditional health practices when treating Chinese Americans so that they will feel more comfortable disclosing such information.

In conclusion, the use of Chinese herbs is not merely driven by illness or limited to a disease state, but also for health promotion and enhancement of a sense of well-being and quality of life. Although the study is limited by a small sample, its reliance on self-report at one point in time, recall bias, and convenience sampling, the study findings provide some evidence for existing anecdotal reports and case studies of herbal use as a health promoting practice. Another potential study limitation includes an underestimation of herbal use because of the desirability to be accepted as American. Yet, many Chinese immigrants and American-born second generation Chinese continue to use Chinese therapies, which are not limited to Chinese herbs. Generalization of the study findings are limited to mostly insured, college-educated, high-income childbearing-age Chinese American women. Most of these limitations are the result of the selection criteria.

Despite these limitations, this study is one of the few studies that explored herbal use in a population that has been studied relatively little. The findings warrant further exploration of short-term and long-term herbal use and other types of CAT as health promoting practices among women and ethnic minorities across the lifespan, using large samples so that the determinants of herbal use can be more fully elucidated. Most of the national CAT surveys were conducted over the telephone in the English language, and very small proportions of ethnic minorities, immigrants, and women were included in the sample (Foote et al., 2003; Eisenberg et al., 1998; Kelly et al., 2005; Mackenzie et al., 2003; Tindle et al., 2005). Further study will add to the body of knowledge of the health care practices of Chinese Americans, and hopefully, help to improve their health outcomes.

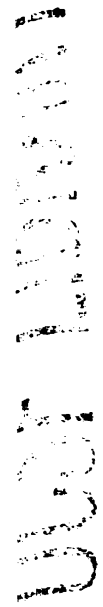

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Table 1

Sociodemographic Profile (N = 103)

Characteristic	*n*	%	*M*	*SD*	*Current Herbal User* *n (%)*
Age (Years)			31.98	4.73	
21-25	11	11.6			2 (9.5)
26-30	22	23.2			8 (38.1)
31-35	36	37.9			6 (28.6)
36-40	26	27.4			5 (23.8)
Education					
Less than high school	3	3.0			1 (5.0)
High school	29	28.7			7 (35.0)
College graduate	69	68.3			12 (60.0)
Marital Status					
Married/Partnered	64	62.7			15 (75.0)
Never married/Unpartnered	38	37.3			5 (25.0)
Country of Origin					
Taiwan	52	52.5			10 (52.6)
China	25	25.3			6 (31.3)
Hong Kong	11	11.1			2 (10.5)
United States	8	8.1			1 (5.3)
Other	3	3.0			0 (0.0)
Years of Education in US**			6.82	6.87	
Years in the US**			11.14	7.72	
English Proficiency**					
Fluent	56	56.6			6 (30.0)
Not Fluent	43	43.4			14 (70.0)
Acculturation***			2.17	0.57	
Total Annual Income					
Less than $10,000	12	14.3			2 (11.1)

Characteristic	*n*	%	*M*	*SD*	*Current Herbal User* *n (%)*
$10,000-$19,999	16	19.0			1 (5.6)
$20,000-$34,999	8	9.5			2 (11.1)
$35,000-$49,999	7	8.3			3 (16.7)
$50,000-$74,999	7	8.3			3 (16.7)
$75,000 or more	34	40.5			7 (38.9)
Health Insurance					
Yes	89	89.0			19 (95.0)
No	11	11.0			1 (5.0)
Perceived Health					
Excellent/Very Good	50	48.5			14 (66.7)
Good/Fair/Poor	53	51.5			7 (33.3)
Have a Personal Physician*					
Yes	69	76.7			18 (94.7)
No	21	23.3			1 (5.3)
Prescription Drug Use					
Yes	15	16.7			2 (9.5)
No	75	83.3			19 (90.5)
Use Over-the-Counter Medications					
Yes	15	18.3			3 (14.3)
No	67	81.7			15 (71.4)
Use Dietary Supplements**					
Yes	63	69.2			19 (90.5)
No	28	30.8			2 (9.5)

Note. Percentages are adjusted for missing cases.

*$p \leq .05$.

**$p \leq .01$.

***$p \leq .0001$.

Table 2

Current Chinese Herbal Users' Characteristics (n = 21)

Characteristic	*f*	%
Forms or Preparations		
Herbal tonics cooked from raw herbs	12	57.1
Chinese herbal soup	7	33.3
Chinese herbal tonic stew/herbal cuisine	6	28.6
Chinese herbal tea	5	23.8
Pills	3	14.3
Powder	3	14.3
Adhesive tape	2	9.5
Gel	1	4.8
How Did You Come to Take Chinese Herbs		
Recommended by friend/family	14	66.7
Prescribed by an acupuncturist	5	23.8
Recommended by an herbalist	3	14.3
Where Do You Obtain Chinese Herbs		
Chinese herbal shop	14	66.7
Order from homeland	6	28.6
Acupuncturist office	4	19.0
Supermarket	3	14.3
Reasons for Using Chinese Herbs		
Enhanced sense of well-being	15	71.4
Prevention of disease	6	28.6
Treatment of symptoms (eg., pain, itching)	5	23.8
Experienced Side Effects From Chinese Herbs		
No	20	95.2
Yes	1	4.8

Characteristic	*f*	%
Informed Western Health Care Provider of Chinese Herbal Use		
No	17	81.0
Yes	4	19.0
Being Treated For Health Problems By Western Health Care Provider		
No	21	100.0
Yes	0	0.0
Believe Some Health Problems Cannot Be Treated By Western Medicine		
Yes	15	71.4
No	6	28.6
Taking Prescriptive Medications		
No	19	90.5
Yes	2	9.5
Taking Over-the-Counter Medications		
No	15	71.4
Yes	3	14.3
Taking Dietary Supplements		
Yes	19	90.5
No	2	9.5

Table 3

Summary Statistics and Internal Consistency for the Health Promotion Lifestyle Profile II

Variable	*n*	*Range*	[a]*M*	*SD*	*r*[b]
Overall Health Promotion	103	1.60-3.60	2.64	0.35	.93
Health responsibility	103	1.33-4.25	2.44	0.49	.78
Physical activity	103	1.00-3.75	2.18	0.51	.81
Nutrition	103	1.11-3.67	2.71	0.43	.69
Spiritual growth	103	2.00-4.00	2.98	0.45	.85
Interpersonal relations	103	1.89-4.00	2.94	0.44	.78
Stress management	103	1.57-3.86	2.57	0.43	.73

Note. [a]Higher mean score indicates more frequent participation in health promoting lifestyle behaviors. [b]Cronbach's alpha internal consistency reliability coefficient.

Table 4

Summary Statistics of Health Promoting Behaviors by Acculturation Level (N = 103)

	Low Acculturation (n = 45)		High Acculturation (n = 58)			
Variable	[a]*M*	*SD*	*M*	*SD*	*df*	*t*
Overall Health Promotion	2.57	0.27	2.70	0.38	100	-2.06*
Health responsibility	2.40	0.44	2.46	0.52	101	-0.61
Physical activity	2.03	0.44	2.30	0.53	101	-2.76**
Nutrition	2.70	0.39	2.72	0.47	101	-0.32
Spiritual growth	2.91	0.38	3.02	0.50	101	-1.15
Interpersonal relations	2.80	0.38	3.04	0.46	101	-2.83**
Stress management	2.47	0.36	2.60	0.48	101	-1.55

Note. [a]Higher mean score indicates more frequent participation in health promoting lifestyle behaviors.

*$p \leq .05$.

**$p \leq .01$.

Table 5

Summary Statistics of Health Promoting Behaviors by Perceived Health (N = 103)

	Excellent/ Very Good (n = 53)		Good/Fair/Poor (n = 50)			
Variable	[a]*M*	*SD*	*M*	*SD*	*df*	*t*
Overall Health Promotion	2.71	0.38	2.58	0.30	101	-1.91*
Health responsibility	2.45	0.53	2.42	0.45	101	-0.33
Physical activity	2.22	0.61	2.12	0.40	101	-0.63
Nutrition	2.72	0.46	2.69	0.41	101	-0.31
Spiritual growth	3.08	0.45	2.87	0.44	101	-2.46**
Interpersonal relations	3.05	0.45	2.83	0.41	101	-2.50**
Stress management	2.65	0.48	2.43	0.36	101	-2.66**

Note. [a]Higher mean score indicates more frequent participation in health promoting lifestyle behaviors.

*$p \leq .05$.

**$p \leq .01$.

Table 6

Logistic Regression Analysis of the Determinants of Chinese Herbal Use among Childbearing-Age Chinese American Women (N = 103)

Determinant	Odds Ratio	95% Confidence Intervals	*p*
Personal Factors			
Acculturation	10.96	1.54-77.88	.017
Belief that some problems cannot be treated by Western medicine	1.64	0.46-5.84	.444
Perceived Benefit			
Perceived health	1.08	0.46-2.50	.867
Perceived Barrier			
Experienced side effects from Chinese herbal use	1.01	0.08-13.09	.995
Health Promoting Behaviors			
Health responsibility	0.35	0.06-2.04	.244
Physical activity	3.05	0.56-16.56	.196
Nutrition	7.82	1.15-53.11	.035
Spiritual growth	2.28	0.27-19.48	.450
Interpersonal relationships	0.32	0.04-2.43	.272
Stress management	0.45	0.05-4.43	.495

Note. Model: $X^2(10, N=88) = 21.57, p = .01$.

Chapter IV

Perimenstrual Symptoms and Chinese Herbal Use Among Childbearing-Age Chinese American Women

by M. Wey, C. M. Waters, C. J. Portillo, & K. A. Lee

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Abstract

Objective: The study purpose was to describe the frequency and severity of perimenstrual symptoms and the influence on Chinese herbal use among childbearing-age Chinese American women from a women's health perspective.

Design: The study design was cross-sectional and descriptive. Self-administered questionnaires were completed by 103 Chinese American women, aged 21 to 40 years. Follow-up data were collected prospectively on a subset of the women regarding their actual perimenstrual symptoms during menstruation.

Results: A majority of the women experienced minimal to mild severity of perimenstrual symptoms. Abdominal bloating, fatigue, and soreness of the breasts were the most prevalent and severe perimenstrual symptoms reported retrospectively and prospectively. Uterine cramps were more prevalent during their menstrual period only. More than 90% reported use of Chinese herbs in the past and 22% were current herbal users; and more than 70% had consumed Chinese herbs for the relief of perimenstrual symptoms, with about 55% to 95% reporting that they experienced perimenstrual symptom relief. Although there were no statistically significant perimenstrual symptoms differences between herbal and non-herbal users, women who reported a higher severity of sleep disturbance and emotional symptoms were more likely to use Chinese herbs.

Conclusion: Perimenstrual symptoms and the use of Chinese herbs for relief of perimenstrual symptoms are prevalent among childbearing-age Chinese American women. Few Chinese American women believe Western medicine can treat menstrual conditions and few side effects are reported.

Keywords: Chinese, Herbal Use, Perimenstrual, Women

Perimenstrual Symptoms and Chinese Herbal Use Among Childbearing-Age Chinese American Women

Perimenstrual symptoms can occur days after ovulation (premenstrual) through the first 1 to 3 days of menstruation, and can profoundly affect the lives of women, especially younger women (Mitchell, Woods, & Lentz, 1991). The most prominent perimenstrual symptoms reported by women in the United States (US) include physical symptoms, such as bloating, cramping, and skin changes, and psychoemotional symptoms, such as depression, anxiety, and rapid mood changes (Mitchell et al., 1991; Taylor, 1999). According to a landmark study conducted by the World Health Organization (WHO) (1981), perceived perimenstrual symptoms vary for women across cultures. Women from China and Taiwan were not included in this study, which included 10 countries, representing 14 cultures. Currently, data are still limited regarding the perimenstrual symptoms of Chinese women in China and America.

In the US, the most common treatment for physical perimenstrual symptoms is medical therapy to reduce the myometrical activity of the uterus, such as nonsteriodal anti-inflammatory drugs (NSAIDs) (Dawood, 1990). According to Dawood, the failure rate of NSAIDs is estimated to be 20% to 25%. For many women, this conventional treatment is not optimal, and thus, many women seek complementary and alternative therapies (CAT), such as herbal and dietary options, as opposed to conventional medicine for the alleviation of perimenstrual symptoms (Dog, 2001; Murphy, 2001). The use of Chinese herbs is a common practice among childbearing-age Chinese women for the enhancement of reproductive health, especially during the postpartum period, and in

treating a number of gynecological conditions, such as perimenstrual symptoms and menopause (Tien, 2004).

Background and Significance

Perimenstrual Symptoms

Dysmenorrhea or painful menstruation is the most frequently reported reason for absence from work among U.S. women (Lee & Rittenhouse, 1991); it has been associated directly or indirectly with an estimated annual loss of 600 million work hours and over two billon dollars (Dawood, 1990); and it has been found to negatively impact personal, family and social relationships (Mitchell et al., 1991; Taylor, 1999). A majority of women in the US experience a few symptoms associated with the menstrual cycle, however, it is estimated that perimenstrual symptoms affect at least 40% to 50% of women, and that 2% to 10% of women experience severe perimenstrual symptoms (Busch, Costa, Whitehead, & Heller 1988; Murphy, 2001). The WHO (1981) study, which did not include Chinese and Taiwanese women, found a significantly lower prevalence rate of perimenstrual symptoms in non-western cultures such as Indonesia (23% to 34%) and a higher prevalence rate of perimenstrual symptoms in western countries such as the United Kingdom (72% to 73%). Among Taiwanese college students, Jou (1994) found an 82% to 95% prevalence rate of perimenstrual symptoms using retrospective data and a 20% to 55% prevalence rate of perimenstrual symptoms using prospective data. The literature related to perimenstrual symptoms in Chinese women are dated and limited, and practically non-existent for Chinese American women.

Physical symptoms. A seminal study conducted with 133,410 Chinese women over 9 years old across 29 provinces in China found that the three most frequently reported

perimenstrual symptoms were abdominal pain (33%), backache (30%), and abdominal distention (22.8%) (Zhang, Sun, Hong, & Shi, 1984). Similar to this seminal study, Chang, Holroyd, and Chau (1995) reported that 92% (n = 66) of Chinese women in Hong Kong experienced fatigue, abdominal pain, water retention, and negative mood affect. Lu (2001) also found fatigue, followed by abdominal pain, to be the most reported perimenstrual symptom in 30 Taiwanese women. Among 1,789 young nurses and college students in Taiwan, fatigue followed by abdominal pain was the most prevalent and severe perimenstrual symptom, in data collected both retrospectively and prospectively (Jou, 1994). Tender breasts were reported as the most common symptom by retrospective data. In an earlier study of 1,414 junior-level health science college females in Taiwan, Chen (1983) reported that 84.7% of the students recalled they had experienced perimenstrual symptoms that included abdominal pain, backache, gastrointestinal discomfort, breast tenderness, headache, and dizziness.

Psychoemotional symptoms. Data regarding the psychoemotional effects of perimenstrual symptoms in Chinese and Chinese American women are also limited. In the Chinese culture, menstrual blood is associated with dirt and imbalance, therefore, it is common for Chinese women to have negative attitudes toward menstruation (Lu, 2001). The psychoemotional symptoms associated with the premenstrual and menstruation phases were documented in women living in an urban area of southeastern China (Yu Zhu, Li, Oakley, & Reame, 1996). Emotional symptoms were reported by 88% of the women and physical symptoms were reported by 79% of the women. Emotional symptoms included irritability and mood swings. The percentage of women who experienced severe mood swings and irritability ranged from 13% to 25%.

Chinese Herbal Use

Menstrual health is the central focus of the overall well-being of a woman in traditional Chinese cultural beliefs and practices. Dietary modifications and precautions are essential for promoting reproductive health and preventing illness in the future, for "good" menstrual health facilitates fertility and sets a positive stage for pregnancy during the childbearing years (Tien, 2004; Wu & Gao, 1999). The principles of traditional Chinese cultural beliefs and practices are used by Chinese women for dietary preparations and to identify foods that are improper during a menstrual period (Furth, 1986). In addition to avoiding cold foods, regular use of "support" foods, such as stewing medicinal Chinese herbs along with foods such as pork, poultry, fish, or seafood, is an integral part of a regular diet, and is a common practice among Chinese women.

Consuming "support" foods, such as an herbal formula is believed to be central to healthy menstruation and can correct a specific anomaly, such as menstrual irregularity or perimenstrual pain (Furth & Ch'en, 1992). The formula or the ingredients of Chinese herbs and foods are tailored accordingly depending on gender, health state, and season. Other studies outside of the Chinese literature report that dietary supplements, such as omega-3 fatty acid, vitamin B1, vitamin E, calcium, and magnesium, have been used to relieve or alleviate perimenstrual symptoms (Murphy, 2001). Herbs, such as black haw, wild yam, pulsatilla, black cohosh, fennel seed, partridgeberry and dong quai, have been used by some women for perimenstrual symptoms (Dog, 2001).

Consuming herbs and herbal tonics and adhering to special dietary practices to enhance reproductive health is a common practice among childbearing-age Chinese women, although the extent of its widespread use is documented rarely in the scientific

literature (Kotani et al., 1997; Matthey, Panasetis, & Bryanne, 2002). The literature is scant regarding the characteristics of perimenstrual symptoms and the "non-traditional" management of these symptoms in childbearing-age Chinese American women within their sociocultural context. The few studies that are published are dated and limited to a description of perimenstrual symptoms and the symptom management practices of women in Taiwan or China (Chang et al., 1995; Chen, 1983; Lu, 2001; Jou, 1994; Yu et al., 1996; Zhang et al., 1984). Thus, the purpose of the study was to describe the frequency and severity of perimenstrual symptoms and the influence on Chinese herbal use among childbearing-age Chinese American women.

Theoretical Framework

The women's health theoretical framework proposed by McBride and McBride (1981) was the contextual underpinning of this study. According to McBride and McBride, a woman's lived experience is anchored within the context of her bio-psycho-socio-cultural world. For childbearing-age Chinese American women, this context influences expectations about perimenstrual symptoms, reproductive health in general, as well as responses to and management of perimenstrual symptoms. According to McBride and McBride, perimenstrual symptoms, such as dysmenorrhea and premenstrual tension, have been consistently dismissed as "real" problems for women. They view women's health as being broader than just women's role in reproduction, and that to generalize beyond the population under scrutiny may be destructive to the appreciation of others' lived experiences. They give the example that the inclination to generalize from the perimenstrual symptoms of women in one context to women in all contexts ignores the diverse lived experiences of women. In essence, one has to take into consideration the

influences of sociocultural (ethnicity/race) and biological (menstrual cycle) factors on the symptom experience (type, frequency and severity of perimenstrual symptoms) and symptom response (Chinese herbal use) in order to appreciate women's health and their experiences (see Figure 1).

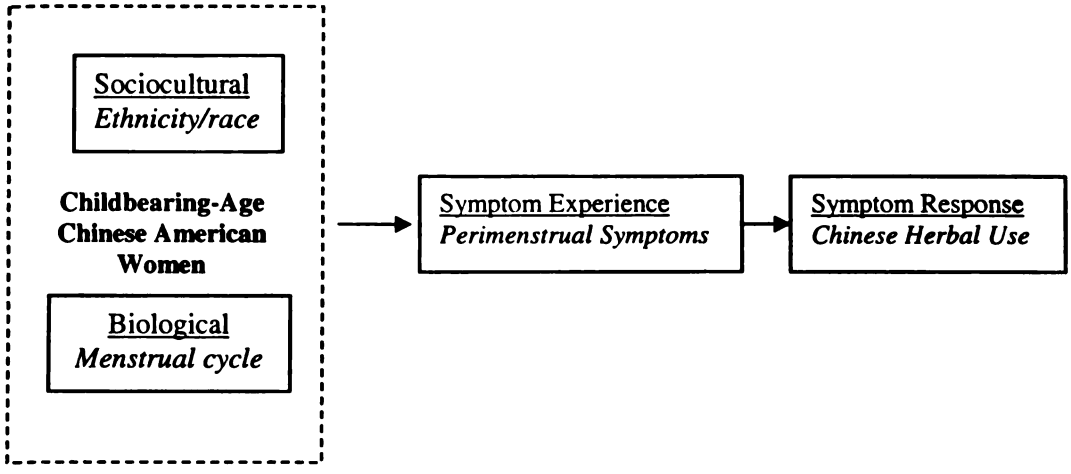

Figure 1. Conceptualization of Perimenstrual Symptoms and Chinese Herbal Use among Childbearing-Age Chinese American Women.

Methods

Design

The main design of the study was cross-sectional and descriptive. The design was used to retrospectively describe childbearing-age Chinese women's perimenstrual symptom experience and its influence on Chinese herbal use. In addition, perimenstrual symptoms data were collected prospectively on a subset of the women to compare recall of perimenstrual symptoms at baseline (retrospective) and their actual perimenstrual symptoms at follow-up during their menstruation (prospective). The study was approved by the University of California, San Francisco Committee on Human Research.

Setting

Recruitment occurred in San Francisco-Bay Area localities with a high density of Chinese Americans, using flyers, word-of-mouth, and advertisement in the bulletins and newsletters of primary and secondary schools that have a high concentration of Chinese children.

Sample

Of the 500 potential study participants who were contacted through informational sessions or by letters, only 380 women expressed interest in participating in the study. A total of 360 questionnaires were distributed; 122 questionnaires were returned, yielding a response rate of 34%. Of the 122 questionnaires, 19 of them were not used for data analysis due to incompleteness and/or ineligibility. Thus, 103 completed questionnaires were used for data analysis.

The convenience sample consisted of 103 non-institutionalized, non-pregnant, non-lactating childbearing-age women, who self-identified as Chinese American, and spoke either Chinese or English. Childbearing-age women were defined as females, 21 to 40 years. The mean age was 32.09 (SD = 4.67), with a range from 21 to 40 years old. A majority of the women were college graduates (68.3%), were employed at least part-time for wages (54.5%), reported a total annual household income of at least $35,000 (57.1%), had health insurance (89%), and had a primary care physician (75.8%). A majority of the women self-appraised their health as excellent/good (89.3%) and did not use prescription medications (83.3%) or over-the-counter medications (81.7%), although 69.2% of them reported the use of dietary supplements. Approximately 63% of the women were

married/partnered and 42% of them had children younger than 5 years old. A majority of the women were foreign-born (91.9%), and the countries of origin included Taiwan (52.5%), China (25.3%), Hong Kong (11.1%), United States (8.1%), and other Asian countries (3%). The average length of time in the US was 11.14 years (*SD* = 7.72). Of the 98% who reported to speak English (98%), 41.4% of the women spoke "some" English and 56.6% of them spoke fluent English.

Measures

Perimenstrual symptoms. Type, frequency and severity of perimenstrual symptoms was conceptualized as the symptom experience in this study. The Menstrual Symptom Severity List (MSSL) was modified to assess the severity of perimenstrual symptoms (Mitchell, et al., 1991; Woods, Lentz, Mitchell, Taylor, & Lee, 1986). It contains 50 items that incorporates physical, cognitive, behavioral, and mood symptoms from various perimenstrual symptom tools. Each perimenstrual symptom is rated on a five-point scale: 0 = not present, 1 = minimal, 2 = mild, 3 = moderate, or 4 = extreme. Scores range from 0 to 180. Higher scores indicate a higher degree of severity of perimenstrual symptoms. Frequency of symptom is also assessed. The MSSL has been shown to be a reliable and effective tool to assess perimenstrual symptoms of women in general (Woods, 1987) and of ethnically and racially diverse populations of women with an inclusion of Asian/Chinese women in the previous menstrual studies (Woods, et al., 1986; Lee, Taylor, Beyene, Green, & Guitierrez, 1994). Cronbach's alpha internal consistency reliability coefficient has been shown to be above .70, and factor analysis has revealed consistent factors across menstrual cycle phases (Taylor, 1999).

The MSSL measures women's experiences of perimenstrual symptoms rather than a syndrome or disease entity. Factor analysis of the perimenstrual symptoms categorized four symptom clusters including turmoil, fluid retention, somatic symptoms, and arousal symptoms in a previous study (Mitchell, Woods, & Lentz, 1999). In the current study, perimenstrual symptoms were categorized into six symptom clusters: (a) emotional turmoil, (b) fluid retention, (c) sleep disturbance, (d) pain, (e) energetic, and (f) fatigue. The emotional turmoil cluster includes anger, anxiety, hostility, tension, impatience, irritability, mood swings, nervousness, depression, loss of concentration, and tearful. The fluid retention cluster includes abdominal bloating, soreness of breast, edema of lower extremities, acne, and weight gain. Sleep disturbance included insomnia, wake up at night, and wake up early. The pain cluster includes backache, body ache, headache, joint pain, and cramps. The energetic cluster includes feelings of well being, feeling energetic, and increased sexual drive. The fatigue cluster includes fatigue, hard to focus, low appetite, loss of sexual drive, loss of interest in things, and weight loss. For this study, Cronbach's alpha internal consistency reliability coefficients for the perimenstrual symptom clusters ranged from .63 to .84 (see Table 3).

In addition, several investigator-developed items were added to the MSSL to obtain a reproductive profile. The items related to age of menarche, menstrual period interval in days, duration of menses in days, regularity of menses, prior pregnancy, and number of pregnancies, miscarriages and abortions.

Chinese herbal use. Chinese herbal use was conceptualized as the symptom response in this study. It was assessed using an investigator-developed tool, derived from a literature review of Chinese herbs and its use. The review included types and forms of

Chinese herbs, methods of preparation, dose, route, frequency and duration, sources of ingredients, reasons for herbal use, and perceived benefits and barriers of herbal use. For the purpose of this study, Chinese herbs referred to any form or preparation of herbs including, but not limited to raw herbs, tablets, pills, powders, herbal soups, herbal teas, inhalation mists, tinctures, ointments, or gels. Cooking herbs were excluded. The use of dietary supplements was also assessed, as some Chinese herbs are commercially packaged and sold as dietary supplements. The unit of analysis for Chinese herbal use was "Are you currently using any form of Chinese herbs." The dichotomous response options were "yes" or "no."

Procedure

All of the study materials (questionnaires, recruitment letter, and informed consent information sheet) were independently translated and back-translated from English to Chinese to ensure semantic equivalence by two Chinese-born, Chinese-English bilingual and bicultural translators. One translator was certified as bilingual in both English and Chinese by the Santa Clara County Department of Public Health, and the other translator was an English teacher for students whose first language is other than English. One translator translated the study materials from English to Chinese, and the other translator translated the study materials from Chinese back to English. The two versions were compared and discussed for resolving discrepancies. Using two independent translators is recommended by Brislin (1986). The use of two independent translators helps to prevent bias and preference of use or choice for a particular term, expression, or phrase. All of the study materials were pretested and were formatted with English and Chinese translations side-by-side.

Any person who contacted the researcher as a result of recruitment efforts were screened for eligibility, given details about the study, and informed of her rights as a research participant. If the participant agreed voluntarily to participate in the study, a packet that included an invitation letter, informed consent information sheet, the self-administered questionnaire booklet, and a self-addressed, stamped envelope to return the completed questionnaire booklet was mailed to the participant. Also in this packet, each participant was asked if she would agree to be contacted by telephone during their menstruation so that prospective data regarding perimenstrual symptoms could be collected. The date of the follow-up contact was determined by the date of the last menstrual period that the woman recorded in the questionnaire booklet. Of the 103 women, 49.5% (n = 51) agreed and were contacted by telephone. It was assumed that if the questionnaire booklet was not returned, the participant was not interested in participating in the study. Thus, no further contact was made. A $5 dollar bill was sent to each participant who had returned a completed questionnaire.

Data Analysis

Summary descriptive statistics were computed for frequency and severity of perimenstrual symptoms and characteristics of Chinese herbal use. The paired t statistic was computed to test for response differences between women's recall of their perimenstrual symptom experience at baseline (retrospective) and during menstruation at follow-up (prospective). Independent Student's t-test analyses were computed for the comparison of perimenstrual symptom clusters between current herbal users and non-current herbal users. Logistic regression analysis was used to explore which perimenstrual symptoms clusters were more likely to determine Chinese herbal use. Predictor variables

were entered concurrently. The overall level of significance, $p \leq .05$, two-tailed, was adjusted as appropriate using a Bonferroni correction to control for the experiment-wise error (Type I) rate associated with multiple pairwise comparisons (Munro & Page, 1993). Data were entered and analyses were computed using SPSS Version 13 statistical software.

Findings

Perimenstrual Symptoms

Table 1 has the reproductive profiles of the childbearing-age Chinese American women. The mean age of menarche was 12.8 years, the menstrual period interval was 31.0 days, and the duration of the menstrual period was 5.8 days. About 92% of the women reported having at least some menstrual period regularity; 53% (n = 55) of them had been pregnant at least once; 34% (n = 35) of them had experienced at least one miscarriage; and 29% (n = 30) of them had at least one abortion.

The type, frequency, and mean degree of severity of perimenstrual symptoms reported retrospectively at baseline (N = 103) and prospectively at follow-up during menstruation on a subset of women (n = 51) is illustrated in Table 2. Almost all of the women experienced one or more perimenstrual symptoms (99.0%, n = 102). Retrospectively, the top three most frequently reported perimenstrual symptoms were abdominal bloating, anxiety, and fatigue; and, the top three most severe perimenstrual symptoms reported were abdominal bloating, fatigue, and soreness of the breasts. Prospectively, the top three most frequently reported perimenstrual symptoms were abdominal bloating, soreness of the breasts, and fatigue; and, the top three most severe perimenstrual symptoms reported were abdominal bloating, fatigue, and soreness of the breasts and cramps.

Table 3 illustrates the total sample's (N = 103) mean scores, standard deviations, and internal consistency reliability coefficients for the retrospective (baseline) clusters of perimenstrual symptoms, as well as the defining symptoms for each cluster. Table 4 illustrates the response differences in the clusters of perimenstrual symptoms between baseline and follow-up for the subset of 51 women. There were statistically significant perimenstrual symptom cluster response differences for severity of emotional turmoil, feeling energetic and fatigue between baseline and follow-up; a higher degree of severity was reported at baseline. Perimenstrual symptom cluster responses for severity of fluid retention, sleep disturbances, and pain were similar at baseline and follow-up.

There was no statistically significant difference for severity of perimenstrual symptom clusters between childbearing-age Chinese women who practiced Chinese health beliefs and those who did not practice Chinese health beliefs. The one exception was for the pain symptom cluster ($t(101) = -3.04$, $p = .003$). Women who reported that they practiced Chinese health beliefs reported a higher severity of pain-related symptoms than women who reported that they did not practice Chinese health beliefs ($M = 1.03$, $SD = 0.80$ vs. $M = 0.59$, $SD = 0.57$; *95% CI*: -0.74-0.15).

Chinese Herbal Use

Ninety percent of the childbearing-age Chinese American women reported that they had used Chinese herbs at some point in their lives. Of these ever used Chinese herbal users, 75.5% (n = 71) had consumed Chinese herbs for the relief of perimenstrual symptoms and 50.6% (n = 39) reported that they experienced relief of perimenstrual symptoms as a result of taking Chinese herbs. There were no statistically significant

differences for severity of any of the perimenstrual symptom clusters between herbal users and non-herbal users.

Twenty-two percent (n = 21) of the childbearing-age Chinese women reported that they were using Chinese herbs at the time of data collection (see Table 5 for the current Chinese herbal users' characteristics). Of the current Chinese herbal users, 72% of the women reported using one Chinese herb and 28% of them used two or more Chinese herbs at the same time. Sixty-five percent of these current herbal users had been using Chinese herbs for less than 1 year and 15% of them had been using Chinese herbs for more than 10 years.

Among the different forms of Chinese herbal preparation, herbal tonics, which are cooked from raw herbs, were the most frequently reported form of herbal preparation used by current herbal users (57.1%). Other frequently used Chinese herbal preparations were Chinese herbal soup (33.3%), Chinese herbal tonic stew or herbal cuisine (28.6%), and Chinese herbal tea (23.8%). Two-thirds (14) of the 21 current Chinese herbal users started taking Chinese herbs because of a recommendation by a family member or friend, and two-thirds of them obtained Chinese herbs from a Chinese herbal shop.

Seventy-one percent of the current herbal users took Chinese herbs for an enhanced sense of well-being, 71.4% took Chinese herbs for the relief of perimenstrual symptoms, 28.6% took Chinese herbs for prevention of disease, and 23.8% reported that they took Chinese herbs for treatment of symptoms, such as pain and itching. Approximately 95% of the current herbal users reported that they experienced relief of perimenstrual symptoms as a result of using Chinese herbs; the same proportion denied experiencing

side effects from Chinese herbs; and 71.4% believed that menstrual conditions cannot be treated by Western medicine.

Perimenstrual Symptoms Determinants of Chinese Herbal Use

Logistic regression analysis was conducted to explore which perimenstrual symptom clusters are more likely to determine Chinese herbal use. Herbal use was coded 0 for non-current herbal users and 1 for current herbal users. Demographic characteristics, such as age, education, marital status, total annual income, health insurance, years in the US, years of education in the US, language preference, and English proficiency, as confounders were not statistically significant, and thus, they were not included in the model. Two of the six perimenstrual symptom clusters were statistically significant determinants of Chinese herbal use (see Table 6). Childbearing-age Chinese American women who were current herbal users were five times more likely to report a higher severity of sleep disturbance symptoms, and 20% more likely to report a higher severity of emotional turmoil symptoms as compared to non-current herbal users.

Discussion

This study, designed within the context of a women's health theoretical underpinning, described the perimenstrual symptom experience and its influence on Chinese herbal use as a symptom response among childbearing-age Chinese American women. Almost all of the women (99%) recalled perimenstrual symptoms. This study's prevalence rate is much higher than the prevalence rates (40% to 50%) reported in other studies of U.S. women (Busch et al., 1988; Murphy, 2001) and the prevalence rates (23% to 73%) reported in the WHO (1981) study of women representing 14 cultures and 10 countries, of which China and Taiwan were not included. In the current study, the proportion of women recalling

perimenstrual symptoms, however, is somewhat similar to the proportions reported by Jou (1994) in Taiwanese college students, where the proportions of perimenstrual symptoms ranged from 82% to 95%.

Retrospectively, abdominal bloating, anxiety, fatigue, anger, and being impatient were the five most frequently reported perimenstrual symptoms, whereas abdominal bloating, soreness of the breasts, fatigue, weight gain, and being impatient were the five most prevalent perimenstrual symptoms reported prospectively by women during the menstrual period. These reported perimenstrual symptoms are consistent with other U.S. (Mitchell et al., 1999; Taylor, 1999) and Chinese (Yu, 1996; Zhang et al., 1984) studies. The major dissimilarity is the perimenstrual symptom, cramping. Unlike other studies that reported cramping as one of the top most frequently reported perimenstrual symptom in U.S. women (Lee & Rittenshouse, 1991; Mitchell et al., 1999; Taylor, 1999) and Chinese women (Chang et al., 1995; Chen, 1983; Jou, 1994; Lu, 2001; Zhang et al., 1984), this was not the case in this study, either by recall at baseline or during menstruation at follow-up.

The reported severity of perimenstrual symptoms was minimal to mild at both baseline recall and at follow-up during menstruation. This finding is somewhat consistent with the reported prevalence rates of 2% to 10% of U.S. women who experience severe perimenstrual symptoms (Busch et al., 1988; Murphy, 2001), and 5% to 25% of Chinese women who experience severe perimenstrual symptoms (Jou, 1994; Yu et al., 1996). Retrospectively, a higher degree of symptom severity was primarily related to abdominal bloating, fatigue, and breast soreness. Prospectively, the same perimenstrual symptoms were reported with a higher degree of severity, with the addition of cramps.

When perimenstrual symptoms were categorized into clusters, a significant discrepancy between retrospective and prospective data recording of severity of certain perimenstrual symptoms reported by a subset of the women was evident, with a higher degree of severity being reported at baseline. These particular perimenstrual symptoms were in the emotional turmoil, energetic, and fatigue perimenstrual symptom clusters. Logue and Moos (1986) and McFarland et al (1989) documented this tendency to amplify symptom severity when a retrospective data collection method is used. This discrepancy is consistent with other studies of U.S. women. Woods et al. (1992) found that perimenstrual symptoms that were recorded retrospectively were recalled at a greater severity than those symptoms recorded prospectively. Similar recall bias was reported also by Yu et al (1996) in Chinese women.

One hypothesized use of Chinese herbs among childbearing Chinese American women is for the alleviation of perimenstrual symptoms (Furth & Ch'en, 1992; Kotani et al., 1997; Matthey et al., 2002; Tien, 2004; Wu & Gao, 1999). A majority of the women in this study had used at least one kind of Chinese herb at some point in their lives; more than one-fifth of them were currently using at least one kind of Chinese herb; and those women who were current herbal users had been using herbs for at least 1 year, mostly used herbal tonics cooked from raw herbs obtained from Chinese herbal shops, and started using herbs based on the recommendation of a family member or friend. Most of the 21 women who currently used Chinese herbs reported relief of perimenstrual symptoms without any side effects from the Chinese herbs, and believed that menstrual conditions cannot be treated by Western Medicine.

In this study, the proportions of herbs ever used and herbs currently used are higher than those reported in Chinese Americans in the US and Canada, estimated to be between 46% to 84% (Ka, 1998). Data related to herbal use for the alleviation of perimenstrual symptoms among Chinese American women are lacking. Findings of one small study indicated that 75% of Chinese American women used Chinese herbal teas to promote general health on a daily basis (Ma, 1999). There were no differences in perimenstrual symptom clusters between herbal users and those who were not herbal users, nor were there differences in perimenstrual symptom clusters, except for the pain symptoms cluster, between childbearing-age Chinese American women who practiced Chinese health beliefs and those who did not practice Chinese health beliefs. National U.S. survey studies indicate that there is an upward trend of herbal use and other forms of complementary and alternative therapies, and this upward trend appears to be more prevalent among middle-aged women and ethnic minorities (Eisenberg et al., 1998; Foote et al., 2003; Mackenzie et al., 2003; Yu et al., 2004).

Perimenstrual symptoms related to emotional turmoil and sleep disturbances appear to be major determinants of Chinese herbal use in this sample of childbearing-age Chinese American women. The benefits of Chinese herbs for the relief of sleep disturbance and emotional turmoil, however, are not clear. That is, whether the use of Chinese herbs helped women's sleep quality and emotional symptoms is not evident in the data. The psychoemotional symptoms related to perimenstrual symptoms has been studied little in Chinese American women. Lu (2001) described a negative Chinese cultural perspective of menstruation. Yet, there is documentation that up to one-quarter of Chinese women

experience severe mood swings and irritability associated with menstrual cycle (Yu et al., 1996).

In conclusion, perimenstrual symptoms and the use of Chinese herbs for relief of perimenstrual symptoms are prevalent among childbearing-age Chinese American women. This study is limited by a small, convenience sample and recall bias, however, prospective data collection of a subset of the sample was obtained. Another potential study limitation includes an underestimation of the frequency and severity of perimenstrual symptoms because of the negative connotation of menstruation in the Chinese culture (Lu, 2001). Generalization of the study finding is limited to mostly college-educated, high-income childbearing-age Chinese American women. Despite these limitations, this study was the first study that described the perimenstrual symptom experience and Chinese herbal use as a symptom response among childbearing-age Chinese American women from a women's health perspective. Inclusions of Chinese American women from different socioeconomic and cultural backgrounds in larger scale studies in the future will enhance a better understanding of the perimenstrual symptom experiences and cultural-related menstrual health practices among Chinese American women.

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Table 1

Reproductive Profile (N = 103)

Characteristic	*n*	%	*M*	*SD*
Age of Menarche (Years)			12.83	0.16
Menstrual Period Interval (Days)			31.01	7.23
Duration of Menses (Days)			5.76	1.57
Regularity of Menses				
Very regular	27	26.7		
Mostly regular	42	41.6		
Somewhat regular	24	23.8		
Very irregular	8	7.9		
Prior Pregnancy				
Yes	59	57.3		
No	43	41.7		
Number of Pregnancies			2.18	1.14
Number of Miscarriages	22	21.4		
Number of Abortions	16	15.5		

Note. Percentages are adjusted for missing cases.

Table 2

Retrospective (N = 103) and Prospective (N = 51) Reporting of the Most Frequent Types of Perimenstrual Symptoms and Their Mean Severity

	Retrospective (n = 93)	Frequency		Severity	
Perimenstrual Symptom		*f*	%	*M*	*SD*
Abdominal bloating		79	76.7	1.49	1.03
Anxiety		70	68.0	1.17	1.03
Fatigue		68	66.0	1.39	1.26
Anger		68	66.0	1.15	1.06
Impatient		67	65.0	1.01	0.99
Mood swings		66	64.1	1.25	1.20
Soreness of the breasts		63	61.2	1.29	1.30
Irritability		62	60.2	1.11	1.19
	Prospective (n = 40)				
Abdominal bloating		46	90.2	1.35	0.80
Soreness of the breasts		36	70.6	1.08	0.80
Fatigue		34	66.7	1.18	1.06
Weight gain		33	64.7	0.68	0.53
Impatient		31	60.8	0.65	0.62
Cramps		29	56.9	1.08	1.02
Backache		28	54.9	0.88	1.04
Body ache		27	52.9	0.65	0.83

Table 3

Defining Perimenstrual Symptom Clusters, Summary Statistics, and Internal Consistency of Clusters (N = 103)

Variable	*n*	*Range*	*M*[a]	*SD*	*r*[b]
Emotional turmoil (anger, anxiety, hostility, tension, impatience, irritability, mood swings, nervousness, depression, loss of concentration, and tearful)	103	0-3.00	0.82	0.76	.84
Fluid retention (abdominal bloating, soreness of breast, edema of lower extremities, acne, and weight gain)	103	0-3.00	0.90	0.68	.68
Sleep disturbance (insomnia, wake up at night, and wake up early)	103	0-2.33	0.41	0.62	.72
Pain (backache, body ache, headache, joint pain, and cramps)	103	0-3.60	0.80	0.74	.75
Energetic (feelings of well being, feeling energetic, and increased sexual drive)	103	0-2.33	0.43	0.58	.76
Fatigue (fatigue, hard to focus, low appetite, loss of sexual drive, loss of interest in things, and weight loss	103	0-2.67	0.56	0.57	.63

Note. [a]Higher score indicates more severity of perimenstrual symptoms. [b]Cronbach's alpha internal consistency reliability coefficient.

Table 4

Summary Statistics of Severity of Perimenstrual Symptom Clusters by Time (N = 51)

	Retrospective (Baseline)		Prospective (Follow-up)							
Variable	[a]*M*	*SD*	*M*	*SD*	*df*	*t*	*p*	*r*[b]	*Mean Difference*	*95% Confidence Intervals*
Emotional turmoil	0.90	0.78	0.31	0.20	50	6.08	.0005	.52**	0.59	0.40-0.79
Fluid retention	0.85	0.68	0.68	0.31	50	2.10	.041	.50**	0.17	0.01-0.34
Sleep disturbance	0.47	0.61	0.17	0.17	50	3.71	.001	.31*	0.30	0.14-0.46
Pain	0.79	0.80	0.59	0.23	50	2.38	.021	.66**	0.20	0.03-0.38
Energetic	0.44	0.60	0.04	0.20	50	5.18	.0005	.36**	0.41	0.25-0.56
Fatigue	0.60	0.60	0.27	0.24	50	4.32	.0005	.46**	0.33	0.18-0.48

Note. [a]Mean scores are based on a 0 (not present) to 4 (severe) point scale. [b]*r* is Pearson correlation.

*$p < .05$

**$p < .001$

Table 5

Current Chinese Herbal Users' Characteristics (n = 21)

Characteristic	*f*	%
Forms or Preparations		
Herbal tonics cooked from raw herbs	12	57.1
Chinese herbal soup	7	33.3
Chinese herbal tonic stew/herbal cuisine	6	28.6
Chinese herbal tea	5	23.8
Pills	3	14.3
Powder	3	14.3
Adhesive tape	2	9.5
Gel	1	4.8
How Did You Come to Take Chinese Herbs		
Recommended by friend/family	14	66.7
Prescribed by an acupuncturist	5	23.8
Recommended by an herbalist	3	14.3
Where Do You Obtain Chinese Herbs		
Chinese herbal shop	14	66.7
Order from homeland	6	28.6
Acupuncturist office	4	19.0
Supermarket	3	14.3
Reasons for Using Chinese Herbs		
Enhanced sense of well-being	15	71.4
Menstrual-related problems	15	71.4
Prevention of disease	6	28.6
Treatment of symptoms (eg., pain, itching)	5	23.8
Experienced Relief of Perimenstrual Symptoms after taking Chinese herbs		
Yes	19	95.0

Characteristic	*f*	%
No	2	5.0
Experienced Side Effects From Chinese Herbs	20	95.2
No	1	4.8
Yes		
Believe that Menstrual Conditions Cannot Be Treated		
By Western Medicine		
Yes	21	100.0
No	0	0.0

Table 6

Logistic Regression Analysis of Perimenstrual Symptom Determinants of Chinese Herbal Use among Childbearing-Age Chinese American Women (N = 103)

Determinant	Odds Ratio	95% Confidence Interval	*p*
Emotional turmoil	0.20	.05-.80	.022
Fluid retention	2.45	0.81-7.36	.112
Sleep disturbance	5.29	1.59-17.54	.007
Pain	2.54	0.87-7.45	.090
Energetic	0.49	0.14-1.66	.249
Fatigue	0.28	0.06-1.32	.106

Note. Model: $X^2(6, N=103) = 18.41, p = .005$.

Chapter V

Summary, Conclusions, Limitations, Implications, and Recommendations for Further Study

Summary

This dissertation described the influences of health promoting behaviors and the perimenstrual symptom experience on Chinese herbal use among childbearing-age Chinese American women from the theoretical perspectives of traditional Chinese culture and medicine, women's health, and health promotion.

Major findings indicate that over 90% of women reported past use of Chinese herbs, 22% were current herbal users, and 70% had consumed Chinese herbs for relief of perimenstrual symptoms, with 55% to 95% experiencing relief. Herbal tonics prepared from cooked raw Chinese herbs were the most common form of Chinese herbs. Current herbal users were significantly less acculturated, reported fewer years of education in the US, fewer years of living in the US, and had limited English proficiency. The primary reason for using Chinese herbs was for an enhanced sense of well-being. A majority of herbal users did not inform their Western health care provider of their herbal use and they believed that some health problems, such as perimenstrual symptoms, cannot be treated by Western medicine. Being less acculturated and engaging in nutrition-related health promoting behaviors were statistically significant determinants of Chinese herbal use.

Most women experienced mild to minimal severity of perimenstrual symptoms. Abdominal bloating, fatigue, and soreness of the breasts were the most prevalent and severe symptoms reported retrospectively and prospectively. Uterine cramps were more prevalent during the menstrual period only. Although there were no statistically

significant perimenstrual symptom differences between herbal and non-herbal users, women who reported a higher severity of sleep disturbance and emotional perimenstrual symptoms were more likely to use Chinese herbs.

Conclusions

Congruent with Chinese culture, which values health promotion and disease prevention, a majority of the women were relatively healthy and engaged routinely in health promoting behaviors. One such health promoting practice was the use of Chinese herbs for health promotion and relief of perimenstrual symptoms, especially among less acculturated Chinese American women who were health conscious about nutrition.

The findings of this dissertation study enhance the understanding of adherence to traditional health practices by childbearing-age Chinese American women for health promotion and disease prevention, specifically as these concepts relate to reproductive health. The study findings provide some evidence for existing anecdotal reports and case studies of herbal use as a health promoting practice. The study findings also strengthen the importance of culturally appropriate care for ethnic and immigrant populations. The important message to health care professionals is to respect the cultural health practices of their clients.

Limitations

This dissertation study is limited by a small sample, reliance on self-report at one point in time, recall bias, and convenience sampling; however, prospective data collection of a subset of the sample was obtained. Other potential study limitations include underestimation of herbal use because of the desirability to be accepted as American and underestimation of the frequency and severity of perimenstrual symptoms because of the

negative connotation of menstruation in the Chinese culture (Lu, 2001). Generalization of the study findings are limited to mostly insured, college-educated, high-income childbearing-age Chinese American women.

Most of these limitations are the result of the selection criteria. Despite these limitations, this study is one of the few studies that explored herbal use in a population that has been studied relatively little and is the first study that described the perimenstrual symptom experience and its influence on Chinese herbal use as a symptom response among childbearing-age Chinese American women from a women's health perspective.

Practical Implications

The use of Chinese herbs is not merely driven by illness or limited to a disease state (Pender, 1987), but also for health promotion and enhancement of a sense of well-being and quality of life (Yu et al., 2004). Incorporation of Traditional Chinese Medicine into the Health Promotion Model (Pender, Murdaugh, & Parsons, 2006) can help to explain the health promoting practices of Chinese Americans who adhere to Chinese culture, health beliefs and principles (Chen, 1996; Spector, 2000). The concepts of holism, health promotion and disease prevention are congruent with the nursing metaparadigm (Chinn & Kramer, 2003).

Each individual is unique, as no single formula will suit everyone. Therefore, a tailored caring and cultural understanding approach for practice and research should be employed, especially when the individual is an immigrant whose health practices may be completely different from Western health practices (Meleis, 1991). Many Americans of an ethnic minority background may not report their use of alternative and complementary

or traditional health practices if they fear these health practices will not be accepted by their Western health care practitioner (Cassidy, 1998a, 1998b; Eisenberg et al., 1998).

Health care providers should encourage open discussion to explore herbal use and other cultural health practices when treating Chinese Americans so that they will feel more comfortable disclosing such information. Therefore, it is essential for health care professionals to be respectful, non-judgmental and demonstrate cultural understanding when caring for clients of different cultural backgrounds, especially clients who are immigrants. At the same time since some complementary and alternative therapies pose danger, health education is imperative (Ernst, 1998, 2004).

Recommendations for Further Study

The findings of the dissertation study warrant further exploration of short-term and long-term herbal use and other types of complementary and alternative therapies as health promoting practices among women and ethnic minorities across the lifespan, using large samples so that the determinants of herbal use can be more fully elucidated. Most of the national complementary and alternative therapy surveys were conducted over the telephone in the English language, and very small proportions of ethnic minorities, immigrants, and women were included in the sample (Foote et al., 2003; Eisenberg et al., 1998; Kelly et al., 2005; Mackenzie et al., 2003; Tindle et al., 2005). Further study will add to the body of knowledge of the health care practices of Chinese Americans, and help to improve their health outcomes by enhancing understanding and communication between Chinese American clients and Western health care providers

Despite the rapid growth of Chinese Americans in the United States, studies regarding the use of Chinese herbs in Chinese American and immigrant women in relation to

menstrual health are still scant. In recent years, there have been more published literature about the use of Traditional Chinese Medicine, Chinese herbs and other complementary and alternative therapies in women during the perimenstrual period; however, most of such limited and dated studies were conducted in either China or Taiwan (Chang et al., 1995; Chen, 1983; Lu, 2001; Jou, 1994; Yu et al., 1996; Zhang et al., 1984).

Given the importance of menstrual health within the Traditional Chinese Medicine perspective and given that menstrual health is a taboo topic under the modesty of Chinese culture, it is essential for researchers to understand and have an appreciation of menstrual health within Chinese American women's sociocultural context. Theory is foundational to research; it provides a sound basis for the choice of methodology and an appropriate framework that helps the researcher with the study design (Chinn & Kramer, 2003). Whichever research design is chosen to study a particular cultural group, it must be mediated through an understanding of that cultural group to assure that the research is relevant and valid for the targeted cultural group (Meleis, 1991). A lack of understanding of the culture of the target population can create misunderstanding and result in invalid research findings.

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Appendix A

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO
CONSENT TO BE A RESEARCH SUBJECT

Relationship Between Herbal Usage and Perimenstrual Symptoms in Childbearing-Age Chinese American Women

A. PURPOSE AND BACKGROUND

Mercy Wey, R.N., M.S. and Catherine M. Waters, R.N., Ph.D. in the Department of Community Health Systems, School of Nursing are conducting a research study to assess your view of health, health practices, cultural orientation, use of herbs, and symptoms associated with your monthly menstrual cycle. You are being asked to participate in this study because you are an English- and/or Chinese-speaking Chinese woman who is between 21 and 40 years, not pregnant, not lactating, or menopausal.

B. PROCEDURES

If you agree to participate in the study, the following will occur:

1. You will receive a study packet that contains an invitation letter, 2 copies of this consent form, a questionnaire booklet, and a self-addressed stamped envelope.

2. You will sign one copy of the informed consent and keep the other copy for yourself.

3. You will complete the questionnaire booklet that asks questions about your view of health, health practices, cultural orientation, use of herbs, personal information, and symptoms associated with your monthly menstrual cycle.

4. You will return the completed questionnaire booklet in the enclosed self-addressed stamped envelope.

5. The time it takes to complete the questionnaire booklet will vary from person to person. The time estimated to complete the questionnaire booklet is from 30 to 60 minutes.

6. In addition, you will receive a phone call on the date you indicate of the expected date of your next menstrual period.

C. RISKS/DISCOMFORTS

1. Some of the questions may make you uncomfortable or upset, but you are free to decline to answer any questions without consequences.

Confidentiality: Participation in research will involve a loss of privacy; however, your records will be handled as confidentially as possible. Only Ms Wey and Dr. Waters will have access to your study records. No individual identities will be used in any reports or publications that may result from this study.

D. BENEFITS

There is no direct benefit to you from participating in this study. The information that you provide may help health professionals better understand the menstrual health, health practices, and herbal usage of childbearing-age Chinese American women.

E. COSTS

There will be no costs to you as a result of taking part in this study.

F. PAYMENT

After we receive your completed questionnaire booklet, you will receive $5.00 cash and a coupon for a free clinic visit to the University of East and West Clinic located in Sunnyvale, California, for a physical exam as well as discounts on certain herbal products at the clinic.

G. QUESTIONS

You have talked to Ms. Wey or Dr. Waters about this study and have had your questions answered. If you have further questions, you may call Ms. Wey at (408) 858-4510 or Dr. Waters at (415) 502-7995.

If you have any comments or concerns about participation in this study, you should first talk with Ms. Wey or Dr. Waters. If for some reason you do not wish to do this, you may contact the Committee on Human Research, which is concerned with the protection of volunteers in research projects. You may reach the committee office between 8:00 a.m. and 5:00 p.m., Monday through Friday, by calling (415) 476-1814, or by writing: Committee on Human Research, Box 0962, University of California, San Francisco, San Francisco, CA 94143.

H. CONSENT

You have been given a copy of this consent form to keep.

PARTICIPATION IN RESEARCH IS VOLUNTARY. You are free to decline to be in this study, or to withdraw from it at any point. Your decision as to whether or not to participate in this study will have no influence on your present or future medical care.

If you agree to participate in the study, you should sign below.

_____ _____

Date Signature of Study Participant

_____ _____

Date Signature of Person Obtaining Consent

加州大學舊金山分校參與研究同意書

華裔育齡女性使用中藥與經期不適之研究

A. 研究目的與背景〈**PURPOSE AND BACKGROUND**〉

加州大學舊金山分校護理學院社區健康系統學系之二名研究者 Mercy Wey(魏孟璽) R.N., M.S.與 Catherine M. Waters(華特司) R.N., Ph.D.正在研究您使用中藥來處理每月經期不適與您的健康觀、健康保健行爲和文化認同的相互關係。您被邀請參與此研究是因爲您符合該研究參與條件：能說中/英文、沒有懷孕、沒有哺乳及尚未停經的 18~35 歲華裔育齡女性。

B. 研究步驟〈**PROCEDURES**〉

若您同意參與此份研究，您將：

1. 會收到乙份信封，信封中有一封邀請函、二份同意書、一份研究問卷和一個貼了回郵的信封。
2. 簽署一份此研究參與同意書，請您留一份存檔。
3. 完成一份問卷，詢問有關您的健康觀、健康保健行爲、文化認同、中藥之使用、個人資料和您每月經期之不適症狀。
4. 使用內附信封寄回完成作答的問卷。
5. 作答的時間因人而異，大約在 30~60 分鐘左右。

C. 危險性/不適〈**RISKS/DISCOMFORTS**〉

1. 問卷中的某些問題可能會讓您感到不愉快，您可以跳過這些令您不悅的問題。

機密度：參與研究難免會讓您感到失去些許隱私，然而您的資料將會以機密文件來處理，只有 Ms Wey 和 Dr.Water 能閱覽您的問卷，您的個人資料亦不會用於此研究之結果報告。

D. 福利〈**BENEFITS**〉

參與此研究將不會給您任何直接利益，但您的參與將有助於健康研究人員了解華裔女性之經期保健、健康保健行爲和使用中藥之關係。

E. 費用〈**COSTS**〉

您不需付費來參與此研究。

F. 回饋〈**PAYMENT**〉

在我們收到您的完成問卷，您將會收到$5.00 美元與乙份由美國中西醫藥大學診所提供的免費診療優惠卷，在購買中藥同時可享有折扣。

G. 相關問題〈**QUESTIONS**〉

您已與 Ms.Wey 聯繫過有關參與此研究之相關事項。若您有其他問題，您可致電 Ms.Wey(408)858-4510(中/英文)或 Dr.Water(415)502-7995(英文)。

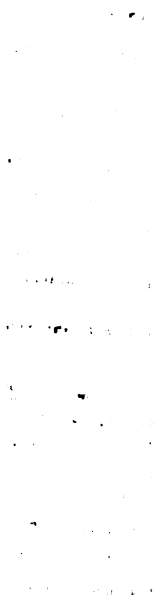
若您對此研究有任何問題或建議，您應直接先與 Ms.Wey 或 Dr.Water 先取得聯繫。若您因任何原因選擇不與這二人聯繫，您可直接致電或致函加州大學人類研究委員會〈Committee on Human Research〉。此委員會將全力保護志願參與研究者之權益。您可於每週一至週五、上午 8 點至下午 5 點來電(415)416-1814 與此委員會取得聯繫，或寄信至：Committee on Human Research, Box 0962, University of California, San Francisco, San Francisco, CA 94143.

H. 同意書〈**CONSENT**〉

您已取得乙份同意書存檔。

參與此研究純屬自願！您可於任何時候拒絕或終止參與此研究。是否參與此研究將不會影響您目前或未來之醫療照顧。

日　期	研究參與者簽名
日　期	取得同意書者簽名



Perimenstrual Symptoms and Herbal Usage among Childbearing Chinese American Women
華裔美國人之服用草/中藥情形

Date: _____ Time: _____

Purpose

These questions ask about your cultural background, level of acculturation, health status, lifestyles, and perimenstrual symptoms, which may be related to your behaviors of herbal usage and health practices. Your views will be very helpful to health care professionals who work with you and others to improve and maintain your health. It should take about 30 to 40 minutes to answer all of the questions. Please answer every question. If you are unsure about how to answer a question, please give the best answer you can. There are no right or wrong answers. It is **your** view that we need. If you have comments on any questions, the study, or your rights as a research participant, you can contact Dr. Waters, the person in charge of this study, at (415) 502-7995. You may also contact Mercy Wey at (408) 858-4510 or 377-7782. **This information will be kept strictly *confidential*.**

下列問題是爲了解有關您使用中藥與文化背景, 異國文化認同程度, 健康狀況和經期不適症狀之間的關係。您的了解與協助將對醫療人員在增進對您本身及他人健康上的了解有相當大的幫助。此問卷大約需要 30-40 分作完回答，請在指示下，回答每一個問題，此問卷並沒有標準答案，若您有問題請與我們聯絡，您可致電 Mercy Wey at 408) 858-4510; 377-7782 or Dr. Catherine Waters at (415) 502-7995 詢問有關於問卷相關問題,我們將對您的問卷絕對保密。

YOUR PERCEIVED HEALTH STATUS
您的健康狀態
(MOS-36, Ware, Kosinski, & Keller, 1994)

1. In general, would you say your health is (Circle One Number):
   總體來說，您怎樣評估您自己的健康狀態：
   1. Excellent 非常好
   2. Very good 很好
   3. Good 好
   4. Fair 還好
   5. Poor 不好

YOUR LIFESTYLE
您的生活方式
(HPLP II, Berger & Walker, 1997)

Instructions: The following items are statements about your **present** way of life or personal habits. Indicate the frequency with which you engage in each behavior.

說明：這部份問卷是關於你目前的生活方式或個人習慣的敘述。請依據你自己的情形圈選出最能代表你生活習慣的答案：

	(Circle One Number on Each Line) Never Sometimes Often Routinely 1 代表「從來沒有」 2 代表「偶爾如此」 3 代表「經常如此」 4 代表「都是如此」			
1. Discuss my problems and concerns with people close to me 與親近的人討論自己的問題及關心的事情。	1	2	3	4
2. Choose a diet low in fat, saturate fat, and cholesterol 食用富含纖維質的食物（如全穀類、天然的水果、蔬菜）。	1	2	3	4

3. Report any unusual signs or symptoms to a physician or other health professional. 當有任何不尋常的病徵或症狀出現時，會去看醫師	1	2	3	4
4. Follow a planned exercise program. 依循一個既定的運動計畫去實行	1	2	3	4
5. Get enough sleep. 有充足的睡眠	1	2	3	4
6. Feel I am growing and changing in positive ways 感覺自己往正面成長與改變中	1	2	3	4
7. Praise other people easily for their achievements 容易讚賞他人的成就	1	2	3	4
8. Limit use of sugars and food containing sugar (sweets) 限制使用糖或含糖的食物				
9. Read or watch TV programs about improving health 閱讀有關促進健康的文章或書籍	1	2	3	4
10. Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber) 每週激烈運動至少三次，每次持續 20-30 分鐘	1	2	3	4
11. Take some time for relaxation each day 每天花些時間放鬆自己	1	2	3	4
12. Believe that my life has purpose 確信我的生命是有目的的	1	2	3	4
13. Maintain meaningful and fulfilling relationships with others 維持有意義且深層的人際交往（非泛泛之交）	1	2	3	4
14. Eat 6-11 servings of bread, cereal, rice and pasta each day 每天吃 6-11 份的麵包、燕麥與麵食	1	2	3	4
15. Question health professionals in order to understand their instructions 向健康專業人員詢問如何好好照顧自己	1	2	3	4
16. Take part in light to moderate physical activity (such as sustained walking 30-40 minutes or more times a week) 經常作一些緩活的運動，如每週散步 30-40 分鐘	1	2	3	4
17. Accept those things in my life which I cannot change 會接受在生活中所不能改變的一些事實	1	2	3	4
18. Look forward to the future 對未來充滿期望	1	2	3	4
19. Spend time with close friends 花時間與親密的朋友相處	1	2	3	4
20. Eat 2-4 servings of fruit each day 每天吃 2-4 份的水果	1	2	3	4
21. Get a second opinion when I question my health care provider's advice 當不同意醫師的建議時，我會向他提出疑問或徵詢另一位醫師的看法	1	2	3	4

22. Take part in leisure-time (recreational) physical activities (such as swimming, dancing, bicycling). 從事休閒性的體能活動（如散步、游泳、足球、騎腳踏車）	1	2	3	4
23. Concentrate on pleasant thoughts at bedtime 就寢時，讓自己想些愉快的事物	1	2	3	4
24. Feel content and at peace with myself 對自己感覺幸福、滿足	1	2	3	4
25. Find it easy to show concern, love and warmth to others 很容易對他人表達關懷、愛及溫暖	1	2	3	4
26. Eat 3-5 servings of vegetables each day 每天吃 3-5 份的蔬菜	1	2	3	4
27. Discuss my health concerns with health professionals 與合格的專業人員討論關於自己健康保健方面的事情	1	2	3	4
28. Do stretching exercises at least 3 times per week 每週做伸展運動至少三次	1	2	3	4
29. Use specific methods to control my stress 採用某些方法來減輕自己所面臨的壓力	1	2	3	4
30. Work toward long-term goals in my life 朝生命中長遠的目標努力	1	2	3	4
31. Touch and am touched by people I care about 和我關心的人相互有身體的碰觸	1	2	3	4
32. Eat 2-3 servings of milk, yogurt or cheese each day 每天吃 2-3 份的牛奶、優格與乳酪	1	2	3	4
33. Inspect my body at least monthly for physical changes/danger signs. 每個月至少一次觀察自己的身體有無異狀或病徵	1	2	3	4
34. Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from destination and walking) 在日常的活動中盡量運動（如在午餐時間走走路，以爬樓梯來取代坐電梯，把車子停在較遠的地方在走道目的地）	1	2	3	4
35. Balance time between work and play 在工作與休閒的時間上取得平衡	1	2	3	4
36. Find each day interesting and challenging 發覺每天都是充滿樂趣及挑戰的	1	2	3	4
37. Find ways to meet my needs for intimacy 會找方法來滿足一些親密的行爲	1	2	3	4
38. Eat only 2-3 servings from the meat, poultry, fish, dried beans, eggs, and nuts group each day 每日只吃 2-3 份有關魚、肉、豆、蛋類等食物	1	2	3	4
39. Ask for information from health professionals about how to take good care of myself 請教專業人員如何照顧自己的健康	1	2	3	4

40. Check my pulse rate when exercising 運動時測量自己的脈搏	1	2	3	4
41. Practice relaxation or meditation for 15-20 minutes daily 每天花 15-20 分鐘鬆弛或靜坐冥想	1	2	3	4
42. Am aware of what is important to me in life 清楚什麼事情對我一生是重要的	1	2	3	4
43. Get support from a network of caring people 會從一些關懷的人群或團體中得到幫助	1	2	3	4
44. Read labels to identify nutrients, fats, and sodium content in packaged food 注意食品包裝上營養成份的標示	1	2	3	4
45. Attend educational programs on personal health care 參加有關個人健康保健方面的教育課程或活動	1	2	3	4
46. Reach my target heart rate when exercising 在運動時心跳速率達到預定的目標	1	2	3	4
47. Pace myself to prevent tiredness 知道讓自己避免太過勞累	1	2	3	4
48. Feel connected with some force greater than myself 知道冥冥中有些力量是遠超過自己的能力	1	2	3	4
49. Settle conflicts with others through discussion and compromise 會透過討論或妥協來處理一些與別人得衝突	1	2	3	4
50. Eat breakfast 常吃早餐	1	2	3	4
51. Seek guidance or counseling when necessary 當自己需要時會尋求別人指導或建議	1	2	3	4
52. Expose myself to new experiences and challenges 會嘗試一些新的經驗與挑戰	1	2	3	4

YOUR HISTORICAL BACKGROUND AND LEVEL OF ACCULTURATION
您的文化背景及異國文化認同程度 (Suinn et al., 1987)

Instructions: The following questions are for the purpose of collecting information about your historical background as well as more recent behaviors that may be related to your cultural identity. Choose the one answer which best describes you.
以下的問題是關於你的一些背景，和文化認同的資料，請你選擇一個最能恰當描述你的答案。

1. How do you identify yourself?
   你如何認同你自己？
   1. Oriental 東方人
   2. Asian 亞洲人
   3. Asian-American 亞裔美國人
   4. Chinese-American, Japanese-American, Korean-American, etc. 華裔美國人，日裔美國人，韓裔美國人等
   5. American 美國人

2. Which identification does (did) your mother use?
   你母親如何認同他自己？
   1. Oriental 東方人
   2. Asian 亞洲人
   3. Asian-American 亞裔美國人
   4. Chinese-American, Japanese-American, Korean-American, etc. 華裔美國人，日裔美國人，韓裔美國人等
   5. American 美國人

3. Which identification does (did) your father use?
   你父親如何認同他自己？
   1. Oriental 東方人
   2. Asian 亞洲人
   3. Asian-American 亞裔美國人
   4. Chinese-American, Japanese-American, Korean-American, etc. 華裔美國人，日裔美國人，韓裔美國人等
   5. American 美國人

4. What was the ethnic origin of the friends and peers you had, as a child up to age 6?
   六歲以前，你的朋友同儕是哪些種族的？
   1. Almost most exclusively Asians, Asian-Americans, Orientals 完全是亞洲人，亞裔美國人、東方人
   2. Mostly Asians, Asian-Americans, Orientals 大部分是亞洲人，亞裔美國人、東方人
   3. About equally Asian groups and Anglo groups 一半是亞洲人，一半是歐裔人
   4. Mostly Anglos, Blacks, Hispanics, or other non-Asian ethnic groups 大部分是歐裔人，黑人，拉丁人，或者是其他非洲人

5. Almost exclusively Anglos, Blacks, Hispanics, or other non-Asian ethnic groups 完全是歐裔人，黑人，拉丁人，或者是其他非洲人 What was the ethnic origin of the friends and peers you had, as a child from 6 to 18?
   從 6 歲到 18 歲，你的同儕是哪些種族的？
   1. Almost most exclusively Asians, Asian-Americans, Orientals 完全是亞洲人，亞裔美國人、東方人
   2. Mostly Asians, Asian-Americans, Orientals 大部分是亞洲人，亞裔美國人、東方人
   3. About equally Asian groups and Anglo groups 一半是亞洲人，一半是歐裔人
   4. Mostly Anglos, Blacks, Hispanics, or other non-Asian ethnic groups 大部分是歐裔人，黑人，拉丁人，或者是其他非洲人
   5. Almost exclusively Anglos, Blacks, Hispanics, or other non-Asian ethnic groups 完全是歐裔人，黑人，拉丁人，或者是其他非洲人

6. Whom do you now associates with in the community?
目前在你的環境中，你通常和哪些人聯絡？
   1. Almost most exclusively Asians, Asian-Americans, Orientals 完全是亞洲人，亞裔美國人、東方人
   2. Mostly Asians, Asian-Americans, Orientals 大部分是亞洲人，亞裔美國人、東方人
   3. About equally Asian groups and Anglo groups 一半是亞洲人，一半是歐裔人
   4. Mostly Anglos, Blacks, Hispanics, or other non-Asian ethnic groups 大部分是歐裔人，黑人，拉丁人，或者是其他非洲人
   5. Almost exclusively Anglos, Blacks, Hispanics, or other non-Asian ethnic groups 完全是歐裔人，黑人，拉丁人，或者是其他非洲人

7. If you could pick, whom would you prefer to associate with in the community?
如果你有選擇，你較喜歡與哪些人有聯繫？
   1. Almost most exclusively Asians, Asian-Americans, Orientals 完全是亞洲人，亞裔美國人、東方人
   2. Mostly Asians, Asian-Americans, Orientals 大部分是亞洲人，亞裔美國人、東方人
   3. About equally Asian groups and Anglo groups 一半是亞洲人，一半是歐裔人
   4. Mostly Anglos, Blacks, Hispanics, or other non-Asian ethnic groups 大部分是歐裔人，黑人，拉丁人，或者是其他非洲人
   5. Almost exclusively Anglos, Blacks, Hispanics, or other non-Asian ethnic groups 完全是歐裔人，黑人，拉丁人，或者是其他非洲人

8. What is your music preference?
你喜歡哪些音樂？
   1. Only Asian music (for example, Chinese, Japanese, Korean, Vietnamese, etc.) 只有亞洲音樂（譬如，中國，日本，韓國，越南等）
   2. Mostly Asian 大部分是亞洲音樂
   3. Equally Asian and English 亞洲與英文音樂各半
   4. Mostly English 大部分是英文音樂
   5. English only 只有英文音樂

9. What is your movie preference?
你喜歡哪種電影？
   1. Asian-language movies only 只有亞洲語言電影
   2. Asian-language movies mostly 大部分是亞洲語言電影
   3. Equally Asian/English English-language movies 亞洲語言與英文電影各半
   4. Mostly English-language movies only 大部分是英文電影
   5. English-language movies only 只有英文電影

10. What Generation are you? (Circle the generation that best applies to you):
你是第幾代居住美國的？
   1. 1st Generation= I was born in Asia or other country than US 第一代＝我出生於亞洲或其他地方
   2. 2nd Generation= I was born in US, either parent was born in Asia or country other than US 第二代＝我出生於美國，父親或母親出生於亞洲或其他地方
   3. 3rd Generation= I was born in US, both parents were born in US, and all grandparents born in Asia or country other than US 第三代＝我與雙親都出生於美國，祖父母都出生於亞洲或其他地方
   4. 4th Generation= I was born in US, both parents were born in US, and at least one grandparent born in Asia or country other than US and one grandparent born in US 第四代＝我與雙親都出生於美國，祖父母中有一人出生於亞洲或其他地方，另一人出生於美國
   5. 5th Generation= I was born in US, both parents were born in US, and all grandparents also were born in US 第五代＝我與雙親都出生於美國，祖父母也出生於美國
   6. Don't know what generation best fits since I lack some information 我不知道我是第幾代居民

11. Where were you raised?
你在哪裡長大？
    1. In Asia only 只在亞洲
    2. Mostly in Asia, some in US 大部分在亞洲，一些在美國
    3. Equally in Asia, and US 亞洲與美國各半
    4. Mostly in US, some in Asia 大部分在美國，一些在亞洲
    5. In US only 只在美國

12. What contact have you had in Asia?
你和亞洲有過怎樣的接觸？
    1. Raised one year or more in Asia 至少有一年在亞洲成長
    2. Lived for less than one year in Asia 在亞洲居住少於一年
    3. Occasional visits to Asia 偶而拜訪亞洲
    4. Occasional communication (letters, phone calls, etc) with people in Asia 偶而與在亞洲的人們聯絡（信件，電話等）
    5. No exposure or communications with people in Asia 沒有和在亞洲的人們有聯絡和接觸的經驗

13. What is your food preference at home?
在家裡你喜歡什麼樣的食物？
    1. Exclusively Asian food 完全是亞洲食物
    2. Mostly Asian food, some American 大部分是亞洲食物，一些美國食物
    3. About equally Asian and American 亞洲食物與美國食物各半
    4. Mostly American food 大部分是美國食物
    5. Exclusively American food 完全是美國食物

14. What is your food preference in restaurants?
在餐廳裡你喜歡哪種食物
    1. Exclusively Asian food 完全是亞洲食物
    2. Mostly Asian food, some American 大部分是亞洲食物，一些美國食物
    3. About equally Asian and American 亞洲食物與美國食物各半
    4. Mostly American food 大部分是美國食物
    5. Exclusively American food 完全是美國食物

15. Do you
你是否
    1. read only an Asian language 只讀亞洲語言
    2. read an Asian language better than English 讀亞洲語言比英文好
    3. read both Asian and English equally well 讀亞洲語言和英文一樣好
    4. read English better than an Asian language 讀英文比亞洲語言好
    5. read only English 只讀英文

16. Do you
你是否
    1. write only an Asian language 只寫亞洲語言
    2. write an Asian language better than English 寫亞洲語言比英文好
    3. write both Asian and English equally well 寫亞洲語言和英文一樣好
    4. write English better than an Asian language 寫英文比亞洲語言好
    5. write only English 只寫英文

17. If you consider yourself a member of the Asian group (oriental, Asian, Asian-American, Chinese-American, etc., whatever term you prefer), how much pride do you have in this group?
如果你認爲你是一個亞洲人（東方人、亞洲人，亞裔美國人、華裔美國人等，任何一種你喜歡的），你對自己的亞洲血統驕傲程度如何？
   1. Extremely proud 非常驕傲
   2. Moderately proud 中度驕傲
   3. Little pride 一些些驕傲
   4. No pride but not feel negative toward group 沒有驕傲也沒有負面的感覺
   5. No pride but do feel negative toward group 沒有驕傲但有負面的感覺

18. How would you rate yourself?
你如何評斷自己？
   1. Very Asian 非常亞洲的
   2. Mostly Asian 大部分亞洲的
   3. Bicultural 雙重文化的
   4. Mostly Westernized 大部分西化的
   5. Very Westernized 非常西化的

19. Do you participate in Asian occasions, holidays, traditions, etc.?
你參加亞洲的慶典節日等等嗎？
   1. Nearly all 幾乎全部
   2. Most of them 大部分
   3. Some of them 一些
   4. A few of them 少部分
   5. None at all 從來沒有

20. What language can you speak?
你會說什麼語言？
   1. Asian only (for example, Chinese, Japanese, Korean, Vietnamese, etc.) 只會亞洲語言（譬如中文、日文、韓文、越南話等）
   2. Mostly Asian, some English 大部分中文，一些英文
   3. Asian and English about equally well (bilingual) 中文和英文一樣好（雙語）
   4. Mostly English, some Asian 大部分英文，一些中文
   5. Only English 只有英文

21. What language do you prefer?
你喜歡用哪種語言？
   1. Asian only (for example, Chinese, Japanese, Korean, Vietnamese, etc.) 只有亞洲語言（譬如中文、日文、韓文、越南話等）
   2. Mostly Asian, some English 大部分中文，一些英文
   3. Asian and English about equally well (bilingual) 中文和英文一樣好（雙語）
   4. Mostly English, some Asian 大部分英文，一些中文
   5. Only English 只有英文

Menstrual and Reproductive History
月經及生育史

The following questions are about your menstrual and reproductive history. Please answer all questions. If you are unsure about the answer, please give the best answer you can.
下列問題是詢問有關您的月經及生育史,請儘可能回答所有問題。

1. When was the date of your last menstrual period? ____(month)/____(date)/_____(year)
   您上次月經是何時來的? ____ 月 ____ 日 _____ 年
2. At what age did you start having menstrual periods? _____years old
   您的初經是在幾歲來的?_____歲
3. Most women have menstrual periods every 28 to 35 days. Considering the last 6 months, how many days from the beginning of one period to the next? _____days
   大部分女性兩次月經間隔 28-35 日. 在過去六個月中,您的兩次月經間隔幾日?_____日
4. Most women have menstrual flow for 3 to 7 days. Considering the last 6 months, how many days does your period last? _____days
   大部分女性的經期持續 3-7 日, 在過去六個月中,您的月經來時持續幾日?_____日
5. When will you expect your next menstrual period? _____month, _____date, _____year
   您下次的經期? ____ 月 ____ 日 _____ 年
6. Considering the last 6 months, your consider your menstrual cycles
   在過去六個月中,您認爲您的經期
   a. Very regular
      非常規律
   b. Mostly regular
      大部分時間都算規律
   c. Somewhat regular
      尚算規律
   d. Very irregular
      很不規律
   e. No menstruation
      無月經
7. Have you been pregnant before? ____ No; _____Yes
   您是否曾經懷孕過?____否_____是
   If yes, how many pregnancies _____; how many miscarriages _____; how many abortions _____
   若是,懷孕次數_____;流產次數_____;人工流產次數_____
8. Have you been pregnant in the past 6 months? _____no; _____yes
   在過去六個月中,您是否曾經懷孕過?____否_____是
9. How old were you at the time of your first pregnancy? _____years old
   您初次懷孕的年齡?_____歲
10. How old were you at the time of your last pregnancy? _____ years old
    您最後一次懷孕的年齡?_____歲
11. Have you been breastfeeding in the past 6 months? _____no; _____yes.
    If yes, how long did you breastfeed? _____months, _____years.
    在過去六個月中, 您是否曾經哺乳過? _____否_____是
    您若曾經在過去六個月中哺乳過, 您持續哺乳_____月, _____年

The Menstrual Symptoms Severity List
月經不適症狀表

The following questions are about the severity of perimenstrual symptoms that you have experienced in the st menstrual cycles and any symptoms that you experienced in the last week. Please tell me the severity of each mptom that you have experienced last week. Rate it "not present" if you did not experience the symptoms. Rate "minimal" if the feeling was minor. Rate it "mild" if it only slightly interfered with your daily function. Rate it " oderate" if it noticeably interfered with your daily function. Rate "extreme" if this is the worst you have ever lt.

以下問題是有關您上次月經來時之症狀和過去一週中的不適症狀。請用以下症狀量表來評量您上週之不適應症狀之程度。若您未感受察覺以下症狀,請評量爲"無出現此症(0)";症狀甚爲不明顯,請評爲"輕微(1)";若症狀略影響您的生活作息,請評量爲"輕度(2)";若症狀明顯影響您的生活作息,請評量爲"中度(3)";若症狀是您所經歷最難過痛苦的一次,請評量爲"重度(4)" 。

What did your last menstrual period start? _____
您上次月經來時是?

)=not present; 1=minimal; 2=mild; 3=moderate; 4=severe
)= 無症狀 1=輕微 2=輕微 3=中度 4= 重度

	0	1	2	3	4
1. Abdominal bloating 腹脹					
2. Alcohol craving 嗜酒					
3. Anger 易怒					
4. Anxiety/worry 焦慮					
5. Backache or neckache 背痛或頸部酸痛					
6. Constipation 便秘					
7. Uterine or pelvic cramps 子宮收縮疼痛或骨盆疼痛					
8. Daytime sweat 日間盜汗					
9. Depression/felt sad or blue 憂慮,感到低潮					
10. Diarrhea					
11. Difficulty concentrating 腹瀉					
12. Difficulty falling asleep 無法入眠					
13. Dizziness 暈眩					
14. Eating more than usual 食量較平日增加					
15. Fatigue or tiredness 疲憊					
16. Feelings of well-being 感覺愉悅					
17. Felt energetic 覺得精力充沛					
18. Forgetfulness 健忘					
19. Generalized bodyache 全身痠痛					
20. Headache 頭痛					
21. Heart racing or pounding 心跳加速					
22. Hot flushes 感到燥熱					
23. Hostility 充滿敵意					

	0	1	2	3	4
24. Impatience 沒有耐性					
25. Increase sexual desire 性慾增加					
26. Indigestion/upset stomach 消化不良/胃部不適					
27. Irritability 易焦躁					
28. Joint pain or stiffness 關節痛,僵硬					
29. Loss of appetite 食慾不振					
30. Loss of sexual desire 失去性慾					
31. Nausea/upset stomach 噁心/胃部不適					
32. Nervousness 神經質					
33. Loss of interest in thing 對事物失去興趣					
34. Night sweat 夜間盜汗					
35. Numbness or tingling 麻木					
36. Mood swings 情緒變化明顯					
37. Out of control feelings 情緒失去控制					
38. Painful or tender breasts 乳房脹痛					
39. Panic feelings 感覺緊張					
40. Shortness of breath 呼吸困難					
41. Skin breakout/Acne 脫皮/長青春痘					
42. Swelling of hands or feet 手腳腫脹					
43. Tearfulness/Crying spells 易流淚/大哭					
44. Tension 神經緊繃					
45. Urinary frequency/leakage 頻尿/漏尿					
46. Vaginal dryness 陰道乾燥					
47. Waking up during the night 半夜醒來					
48. Waking up too early 過早睡醒					
49. Weight gain 體重增加					
50. Weight loss 體重下降					
51. Anything else 其他					

YOUR HERBAL USAGE
您使用中藥的情況

Instructions: The following questions refer to any form or preparation of Chinese herbs (not cooking herbs) including, but not limited to, raw herbs, tablets, pills, powder, herbal soups, herbal tea, inhalation mists, tinctures, ointments, gels, etc. that you take for strengthening of health and well being and/or treatment of illness such as perimenstrual symptoms.
以下問題是爲了解您使用中藥的情形，在此，中藥不限於只有生藥；其他如中藥粉、藥丸、藥粒、藥膏或藥水，所有你用來治療疾病或促進健康的中藥都含概在內。

1. Have you EVER taken any form of Chinese herbal medicines in the past?
   您是否曾經服用過中藥?

1. No 否 → (Go to the "Demographics" Section on Page 17) 直接跳至 17 頁
   1. Yes 是 → (Go to Next Question) 續回答下個問題

22. If yes, have you taken any form of Chinese herbs since your last menstrual cycle?
    自從上次月經來過後，您是否曾經服用中藥？
    0. No 否
    1. Yes是

23. Are you CURRENTLY taking any form of Chinese herbs?
    您現在是否正在服用中藥？
    0. No 否
    1. Yes是

24. Are you CURRENTLY taking Chinese herbs for a relief of perimenstrual symptoms?
    您現在是否正在服用中藥,來減輕不適症狀？
    0. No 否
    1. Yes 是

25. If you are currently taking Chinese herbs, how long have you been taking herbs? _____ (days, weeks, months, or years)
    您服用中藥多久了(天，週，月，年)？

26. How often do you take Chinese herbs?
    您多久服用一次中藥?
    _____ times per day 每天_____次
    _____ times per week 每週_____次
    _____ times per month 每月_____次
    _____ times per year 每年_____次

27. How many kinds of Chinese herbs are you **currently** taking?_____
    您現在一共服用__種中藥？

28. Other than for a relief of perimenstrual symptoms, why are you taking Chinese herbs?
您爲什麼服用中藥？
    1. Treatment of disease 治療疾病
    2. Treatment of symptoms (e.g., pain, itching, etc.) 治療症狀 (例如：疼痛，止癢)
    3. Prevention of disease 預防疾病
    4. Enhanced sense of well-being 促進健康
    5. Enhanced sexual life 促進性功能
    6. Prolonged life 長壽，延長壽命
    7. Other (please specify) _____
    其他(請列出) _____

29. Do you feel any relief of symptoms or illness, or an enhanced sense of well-being and quality of life from taking Chinese herbs?
在服用中藥後，你是否感到減輕症狀或疾病，或增進生活品質或愉悅感？
    0. No 否
    1. Yes 是

30. Have you experienced a relief of perimenstrual symptoms after taking herbs?
在服用中藥後,您的月經不適症狀是否有減輕?
    0. No 否
    1. Yes 是

31. What forms or preparations of Chinese herbs are you taking?
您服用的草/中藥是何種型態？
    1. Herbal tonics cooked from raw herbs 由中藥煎煮的藥汁
    2. Pills 藥丸
    3. Powder 藥粉
    4. Chinese herbal tea 草藥茶
    5. Chinese herbal soup 含中藥的湯
    6. Chinese herbal tonic stew/Chinese herbal cuisine 藥膳
    7. Inhalation mist 吸入性噴霧
    8. Ointment 藥膏
    9. Gel 藥膠
    10. Tincture 藥酊(劑)
    11. Adhesive tape 含中藥方的貼布
    12. Other (please specify) _____
    其他(請列出) _____

32. Do you prepare Chinese herbal stew tonics/Chinese herbal cuisine as part of your diet?
您是否服用藥膳的習慣？

    0. No 否
    1. Yes 是

33. If YES, how often do you prepare Chinese stew tonics/herbal cuisine, which incorporates Chinese herbal medicine and foods?
若您服用藥膳，多久服用一次？
    _____ times per day 一天_____次
    _____ times per week 一週_____次
    _____ times per month 一月_____次
    _____ times per year 一年_____次

34. Are you taking Chinese stew tonics/herbal cuisine for a relief of perimenstrual symptoms?
您是否在服用藥膳來減輕月經不適症狀?

1. No
2. Yes

35. How did you come to take Chinese herbs?
是誰建議您服用中藥？

1. Prescribed by a doctor 醫師指示
2. Recommended by an herbalist 中藥房建議
3. Recommended by friend/family 家人建議
4. Media: TV, newspaper, magazine 電視、報紙、雜誌
5. Found in store 在一般商店發現
6. Other (please specify) _____
   其他(請列出) _____

36. Where do you obtain the Chinese herbs that you are taking?
您服用的中藥是在何處講買？

1. Doctor's office 醫師診所
2. Chinese herbal shop 中藥店
3. Supermarket 超級市場
4. Order from homeland 自家鄉購買
5. Mail order 郵購
6. On-line order 上網購買
7. Other (please specify) _____
   其他(請列出) _____

37. Have ever experienced any side effects as a result of taking Chinese herbs?
您是否有因服用中藥而引起之副作用？

0. No 否
1. Yes (please describe these side effects) _____
   是 (請列出發生之副作用)

_____

38. Have you informed your Western medicine doctor or primary health care provider that you are taking Chinese herbs?
您是否已告知西醫師您在服用中藥？

0. No 否
1. Yes 是

39. Is your Western medicine doctor or primary health care provider treating you for health problems?
您的西醫師是否在治療您目前的健康問題？

0. No 否
1. Yes (please specify) _____
   是 (請描述)

_____

40. Do you have symptoms other than perimenstrual symptoms, such as chronic pain, poor circulation, that you believe cannot be treated by Western medicine?
你是否認爲西醫無根治以下如慢性疼痛，循環不良，月經問題？

0. No 否
1. Yes 是

41. Are you taking prescriptive medications?
您是否正在服用醫師指示的處方藥物？
0. No 否
1. Yes 是

42. How many kinds of prescriptive medications are you currently taking? _____
您目前一共服用_____種醫師指示的處方藥物？

43. Are you taking over-the-counter medications—medications that are not prescribed by your doctor or primary health care provider, such as Tylenol, Advil, etc.)?
您是否正在服用成藥－非由醫師指示開立之處方？例如：普拿疼
0. No 否
1. Yes 是

44. If YES, how often do you take over-the-counter medications?
您若正在服用成藥，你多久服用一次？
_____ times per day 一天_____次
_____ times per week 一週_____次
_____ times per month 一月_____次
_____ times per year 一年_____次_____

45. Are you taking dietary supplements, such as vitamins, minerals, pollen, shark fins, etc. that you do not count as herbs?
您是否正在服用營養健康食品？例如：維生素、礦物質、花粉、鯊魚翅
0. No 否
1. Yes 是

46. If YES, how often do you take dietary supplements?
若您在服用營養健康食品，多久服用一次？
_____ times per day 一天_____次
_____ times per week 一週_____次
_____ times per month 一月_____次
_____ times per year 一年_____次

47. What dietary supplements are you currently taking? _____
您在服用那些營養健康食品？
_____

48. Where do you obtain your dietary supplements?
您在何處購買營養健康食品？
1. Doctor's office 醫師診所
2. Herbal shop 草/中藥店
3. Supermarket 超級市場
4. Order from homeland 自家鄉購買
5. Mail order 郵購
6. On-line order 上網購買
7. Other (please specify) _____
其他(請列出) _____

49. How did you come to take dietary supplements?
是誰建議您服用營養健康食品？
    1. Prescribed by a doctor 醫師指示
    2. Recommended by an herbalist 中藥房建議
    3. Recommended by friend/family 家人建議
    4. Media: TV, newspaper, magazine 電視、報紙、雜誌
    5. Found in store 在一般商店發現
    6. Other (please specify) _____
    其他(請列出) _____

50. Have you informed your Western medicine doctor or primary health care provider that you are taking dietary supplements?
您是否已告知您的西醫師您在服用營養健康食品？
    0. No 否
    1. Yes 是

GO TO THE "DEMOGRAPHICS" SECTION ON PAGE 17

請回答第 17 頁之 "基本資料" 問題

TELL US ABOUT YOU
基本資料
(Demographics)

1. What is your date of birth (month, date, & year)?
   您的生日 (月，日，年) _____
2. What is the highest grade in school that you completed? 您的最高學歷
   1. No school 未上學
   2. Completed 6th grade or less 小學
   3. Junior high school (7th – 9th grade) 初中
   4. Partial high school (10th – 11th grade) 高中
   5. High school graduate 高中畢業
   6. Partial college training 大專
   7. Completed college (graduated) 大學畢業
   8. Graduate training (graduate degree) 研究所
3. Years of education in the US _____
   在美受教育之年數 _____
4. What is your marital status?
   婚姻狀況
   1. Married/partnered 已婚/有伴侶
   2. Widowed 寡/鰥
   3. Divorced 離婚
   4. Separated 分居
   5. Never married/unpartnered 未婚
5. Counting yourself, how many people live in your household?
   您家中共有幾人 (含您自己) _____ people (人)
6. Do you have children under 5 years old living in your household? 您家中是否有五歲以下之孩童？
   0. No 否
   1. Yes 是 If YES, how many? _____
      若有，幾位？_____
7. Are you currently employed outside the home?
   您現在有職業嗎？
   1. No, I am a student
      不、我是學生
   2. No, I am retired
      不、我退休了
   3. No, I am a homemaker
      不、我是家庭主婦
   4. No, I am looking for employment
      不、我在找工作
   5. No, I never have been employed
      不、我從未工作過
   6. No, I am unable to work
      不、我無法工作
   7. Yes, part-time or on-call
      有、半職或兼職
   8. Yes, full-time
      有全職
8. What kind of work have you done most of your working life? 您多半作何類型的工作？
   _____
9. Which of the following four statements describes your ability to get along on your income? 以下何項最能描述你現在的經濟狀況？
   1. I can't make ends meet
      我經常入不敷出
   2. I have just enough, no more
      我剛好夠用
   3. I have enough, with little extra sometimes
      我夠用並有些存款
   4. I always have money left over
      我常有多餘的錢
10. We are interested in whether you have to pay rent or make mortgage payments? 您的居住情況？
    1. I pay rent 我租屋
    2. I make mortgage payments 我付房貸
    3. I own my home outright and do **not** pay mortgage or rent 我有房子且已付清房貸
    4. Other 其他
       If other, explain _____
       請解說 _____
11. What is the total amount of your yearly **household** income? Please include money from jobs, net income from a business or farm, dividends, interest, net income from rent, social security, and any other money income.
    您的所有收入，包含薪水、利息、救濟金、房租及其他收入等等。
    1. Under $5,000
    2. $5,000 - $5,999
    3. $6,000 - $6,999
    4. $7,000 - $7,999
    5. $8,000 - $9,999
    6. $10,000 - $12,499
    7. $12,500 - $14,999
    8. $15,000 - $17,499
    9. $17,500 - $19,999
    10. $20,000 - $24,499
    11. $24,500 - $34,999
    12. $35,000 - $49,999
    13. $50,000 - $64,999
    14. $65,000 - $74,999
    15. $75,000 or more

12. What is your religious affiliation?
    您的宗教信仰？
    1. Baptist
    2. Catholic
    3. Buddhist
    4. Other (please specify) _____

15. What is your country of origin? _____
    您的祖國？
16. Number of years in the US? _____
    來美國多久了？
17. What year did you come to the US? _____
    您幾年來？
18. What is the language you mainly speak?
    您平時較習慣使用何種語言？

    _____

19. How is you command of the English language?
    您是否能說英文
    1. None 否
    2. Some 說一些
    3. Fluent 流利

20. Do you have health insurance?
    您是否有醫療保險？
    1. No 否
    2. Yes 是

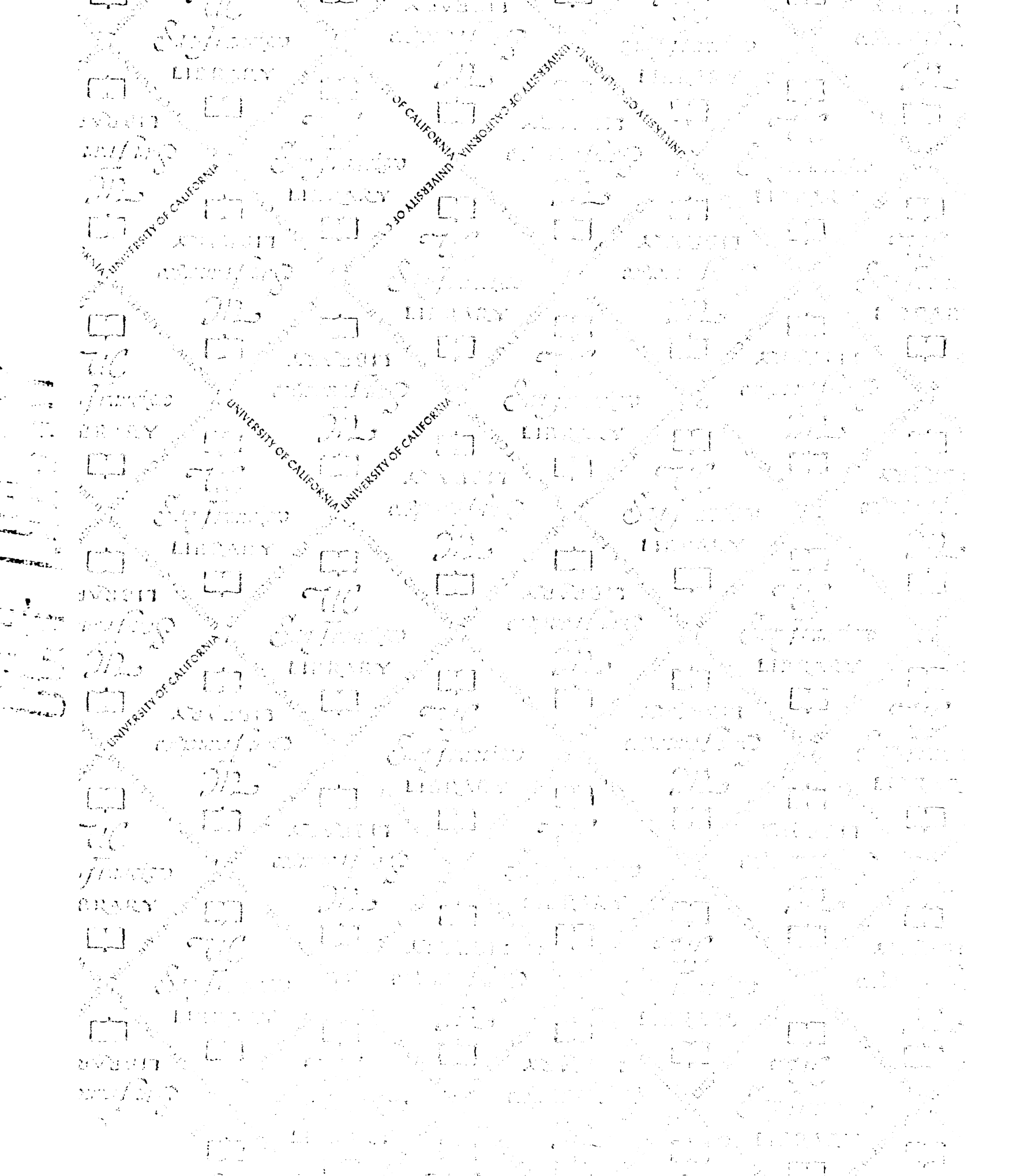
21. Do you have a family doctor or primary care provider?
    您有家庭醫師嗎？
    0. No 否
    1. Yes 是

22. What is your major means of transportation?
    您的主要交通工具？
    1. Car 私用車
    2. Bus 巴士/公車
    3. Bike 腳踏車
    4. Walking 走路

23. Are you able to drive a car?
    您是否能開車？

    0. No 否
    1. Yes 是

Thank You!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