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Article

Promoting Cultural Sustainability in the Context of Public Health: A Thai Perspective

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Abstract: Over the last 4 decades, the concept of sustainable development has emerged in response to environmental and economic crises related to the consumption of non-renewable resources. The challenge of developing a sustainable economy has moved beyond the disciplines of economics, environmental and political science to include an ecological approach involving the public health community. The role of cultural values in defining and addressing the issue of sustainability from a public health perspective varies among nations and is dependent on multiple factors. This paper highlights the challenges related to sustainability and current health problems in Thailand. An innovative educational approach from Mahidol University, a leading public health institution, incorporates the principles of a sufficiency economy while integrating the school's mission of preserving and applying national and local culture and wisdom to sustain and improve quality of life.

Keywords: sustainability; sustainable development; public health; culture; Thailand

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1. Introduction

In the 1970's the concepts of "sustainability" and "sustainable development" emerged as a result of the tensions between economic development and environmental protection [1]. In 1972 the United Nation's Conference on the Human Environment addressed the apparent competing demands of economic growth and environmental security while acknowledging their interconnectedness [2]. A decade later, the World Commission on Environment and Development deliberated for several years to produce a report in 1987 entitled "Our Common Future" which framed sustainable development as "an urgent imperative on the global agenda." [3]. By 1992 the participants at the United Nations Conference on Environment and Development identified 27 principles related to the concerns and challenges for sustainable development that ultimately could serve as a foundation of international law [4].

Despite its ubiquitous use among a wide array of disciplines [1,5,6] the definition of the term sustainable development varies somewhat depending on the major theoretical and philosophical paradigms of the players involved [7-9]. Wheeler [1] identified 9 distinct themes among various definitions of sustainable development over the last two decades with four major distinct disciplinary perspectives among environmentalists, economists, equity advocates and spiritual writers/ethicists. In search of a common ground, Fullan suggested simply that sustainable development is "the capacity of a system to engage in the complexities of continuous improvement consistent with deep values of human purpose." ([10], p. ix). The former Secretary General of the United Nations, Kofi Annan, identified the key issues related to sustainable development in terms of a complex philosophical question to be answered: "Can the people now living on this planet improve their lives, not at the expense of future generations, but in a way from which their children and grandchildren will benefit?" ([11], p. 4). Regardless of the context and discipline, most definitions include the paramount concern at some level for the "three E's" which include the environment, the economy and equity [1]. Similarly, Blackburn [2] has succinctly summarized the essential meaning of sustainability as the "2 R"s'—resources (wise use and management thereof) and respect (for people and all living things).

1.1. Purpose of This Paper

While the concept of sustainability has been well described, few reports have operationalized it from a public health perspective. The objective of this manuscript is to explore this concept in the context of cultural, economic and public health challenges in Thailand. This article will also provide an example of how an educational program can integrate sustainable development using a unique, interdisciplinary public health approach.

1.2. Who Owns This Problem?

The two predominant disciplines at the discussion table of sustainability in the past 4 decades have included economists and ecologists/environmental scientists [6]. Recent debates in the literature suggest that some of the fundamental assumptions of both disciplines need to be questioned and reframed in a new "science of sustainability" [7,8,12]. Indeed the fusion of these two interdisciplinary perspectives within one scientific paradigm has been referred to as bioeconomics and/or ecological

economics, both of which are considered by some to be a sub-specialty within the field of economics [6]. Jennings defined the term political economy as "a structure of power and a form of large-scale social coordination." ([13], p. 77). With our very existence at a crossroads in large part due to "western values" that have led to poorly controlled consumption of natural limited resources with limited protection of the environment, Jennings and others have promoted the concept of a new sustainable ecological political economy as the most promising means of global survival [1,2,7,13]. Despite the emergence of this "new science" with its own theoretical perspectives and visionary goals, the question remains: How can we secure the political will and prepare future leaders with the skills needed to secure a sustainable future on the planet?

While overlaps exist within the priorities and methods of environmental/ecological science and public health, it has been suggested that public health researchers have been "slow to engage" in today's sustainability agenda [14]. The field of public health has traditionally been composed of interdisciplinary practitioners and researchers whose focus in the last half of the 20th century has been the exploration of risk factors on a individual level as well and sociocultural determinants of health from a population level individual [14,15]. Recent calls for public health leadership in health equity [16] and alternative conceptual frameworks [17,18] speak to the need for a comprehensive reform to address global concerns related to sustainability. The new paradigms suggest a focus on eliminating health disparities using innovative collaborative empowerment approaches and actions that first and foremost address the social and economic structures that impact health [18]. The public health interdisciplinary team needs to expand beyond the traditional players such as clinical practitioners and researchers from the fields of nursing, medicine, social work, environmental and behavioral science and nutrition. Indeed it is time for public health experts to learn the language of economists and ecologists who have been at the forefront of the discussion of an "integrated sustainable human development paradigm" [8].

While calls for enhanced interdisciplinary expertise to address the complexity of sustainable development are largely supported in the literature [1,2,5-7], the question of how to educate our future leaders continues to generate discussion. Orme and Dooris [19] propose that it is the role of higher education to take the lead in educating future leaders using a whole systems or ecological approach as opposed to a more narrow environmental approach. Using their experiences within the United Kingdom (UK), they advocate for educational opportunities across departments and research centers within a university setting incorporating different cultural and disciplinary perspectives. The UK government indeed has taken on the challenge of educating all of its citizens, including children, on the importance of sustainability which is outlined in the UK Government Sustainable Procurement Action Plan [20].

El Ansari and Stibbe [21] suggested a list of "bottom line" skills that are necessary to prepare individuals and societies to address the concept of sustainability in the current century. In their discussion of the cyclical nature of health and sustainability, they referred to the term "sustainable literacy" to capture the essentials components to educate *about* sustainability while at the same time learning to *be* effective change agents for sustainable development. They identified the need to consider complex social, economic, political, cultural, physical and ecological factors that are continuously changing. They highlighted the need for understanding collective action and being good citizens as well as traditional educational objectives of improving knowledge and skills related to

information technology, climate change, psychological and behavioral theories. They proposed that dealing with uncertainty and working cooperatively will be two prerequisites for those who will be challenged in the future to deal with the issues of health and sustainability [21].

1.3. The Clash of Culture and Sustainability in Developing Economies

With the aging of the world's population, along with the direct and indirect effects of urbanization, globalization and climate change, the health status of persons living in developing economies is disproportionately affected [22]. The need for a different paradigm for health promotion and sustainability in low and middle-income countries is required to avoid a situation where "politics and finance trump public health every time." ([23], p. 509). The World Bank lists 144 countries as "developing" nations, each with its own distinct levels of gross national income per capita, quality of life, level of industrialization and human development index [24]. While the poorest developing countries face enormous challenges related to substantial inequities in morbidity and mortality rates, so too these countries are constrained in the development of a sustainable economic model of health due to the unmet need of so many of the basic necessities for survival. Ironically, as gains have been made in some of the middle-income developing countries, the result has been the evolution of a two-tiered health system that must address the long standing problems of acute infectious diseases, malnutrition, and pollution, while also addressing the emerging health and social problems associated with living longer and chronic diseases.

In an editorial on the health concerns of the Asia-Pacific Region, Low [15] noted that public health efforts currently have reached a crossroads. Two current major approaches focus on acute infectious diseases and behavioral factors associated with morbidity and mortality. While he did not use the term "sustainability", he suggested that the research priorities need to expand to include the concepts of justice, equity, human security, environmental and social health factors and community development. He challenged public health researchers to collaborate with interdisciplinary professionals, policy makers and community advocates to improve quality of life and address current unmet needs. Yet the determination of a plan to address sustainability from multiple cultural and social global perspectives remains elusive. Blackburn suggested that cultural factors include "collective values, beliefs, attitudes, and behaviors of the target group" ([2], p. 261). He proposed that attention must be paid to language, accepted participatory norms (authoritarian *vs.* actively engaged participant group processes), legal *vs.* voluntary standard perceptions, target-related predispositions and time related issues. In effect, programs and policies that seek the objective of a sustainable and healthy economy and environment must be targeted to the economic, political, social and cultural context of the target population, whether it is at a tribal, urban, regional, country or continent level.

2. Public Health Achievements and Challenges in Thailand

Thailand is classified as a lower middle income developing country [24] located in the southeast Asian region. With approximately two thirds of its population of 67.3 million people living in rural areas, Thailand achieved dramatic success in economic growth over the last five decades. As a result, the poverty rate among the general population decreased from approximately 33% in 1975 to 10% thirty years later [25]. In addition, Thailand compares favorably to regional and global statistics in

terms of its life expectancy at birth, healthy life expectancy, selected immunization rates and the under age 5 mortality rate [26]. Following the recommendations of the World Health Organization, in 1991 Thailand implemented a primary care system to ensure access to quality primary health care for all Thai people [27]. This health care reform resulted in the creation of village and regional level "primary care units" within autonomous communities, a decentralized system with local governance and authority. Services can include acute and preventive care as well as surveillance of food, pharmaceuticals and selected communicable and non-communicable diseases [28]. Another area of recognition and success related to sustainability in Thailand has been the gains made by the biotechnology industry. Examples include the improvements in crop quality and output, drug and vaccine development and reduction of water-borne diseases in the fishing industry using advanced biotechnological methods [29].

Despite dramatic declines in poverty and notable achievements in core health indicators, Thailand faces significant challenges in terms of the impact of its recent economic growth and development. Some of the unintended consequences of the remarkable economic growth experienced in Thailand over the recent past several decades can be measured using the Index of Sustainable Economic Welfare (ISEW) which suggests that negative consequences, particularly in relation to pollution and environmental damage may outweigh the gains made from the economic indicators alone. An analysis by Clark and Islam [25] revealed numerous "negative" adjustments among selected sustainable economic welfare indices in Thailand from 1975–1999. These included commuting, urbanization, air, water and forest pollution, long term environmental damage and deforestation. Clearly these indices are not supportive of a sustainable and healthy economy in the long term.

In addition, Thailand faces ongoing public health challenges common to developing countries such as acute infectious diseases, including malaria, dengue fever, HIV/AIDS and diarrheal diseases [30,31] while at the same time needing to address the common chronic diseases and behavioral issues experienced in the developed nations, such as heart disease [32], diabetes [33,34], cancer [35], quality of life related to aging [36] and obesity [32]. The pattern of the top 10 causes of death for all ages in Thailand mirrors predominantly the picture of "developed" nations' diseases with chronic diseases among the major contributors to mortality. However, unlike developed countries, despite great strides in the treatment and access to care, Thailand's persistent leading cause of death is HIV/AIDS. In order of prevalence, the three leading causes of death in Thailand for all ages for chronic diseases includes: heart disease, cerebrovascular disease and diabetes [26]. While epidemiologic studies can track both infectious and emerging chronic disease patterns, the challenge remains to examine these trends from a cultural, economic, political and environmental perspective.

Despite government instability in the past decade, there has a strong commitment to health promotion and sustainability at the national level by the King and the royal family as evidenced by support of research and development in a wide arena of health issues. These include efforts to support alternative crops to replace opium, improvement in the quality of rice crops, the establishment of an environmental research center in Bangkok to examine alternative and renewal energy sources and the establishment of university public health research centers and programs such as the Thailand Center of Excellence for Life Sciences and the National Center for Genetic engineering and biotechnology [29,37]. The philosophy of a "sufficiency economy" (SE), supported and advanced by the King of Thailand, is a holistic concept of moderation that acknowledges interdependency between

people and nature. It calls for balanced and sustainable development with the assumption that the process of development is appropriate with social, cultural and natural conditions. The philosophy of SE was advocated to overcome the economic crisis that was brought about by unexpected changes related to rapid globalization. It can be applied at the family, community and national level. The current Tenth National Economic and Social Development Plan (covering 2007–2011) aims to achieve a "green and happy society" with a focus on the overall sustained well being of the people of Thailand [38].

Commitment to higher education as a vehicle to help resolve some of the unintended consequences of economic growth and globalization experienced in Thailand is an identified social goal whose path has been outlined in five suggested policies. These include allowing greater autonomy among universities, increased government research funding, development of science parks and other models of incubators for innovation, increased linkage with industries, and increased funding for post doctoral students and recent graduates [29].

3. A Thai Sustainable Public Health Educational Model

3.1. Overview of Public Health Program

The former King Bhumiphol established the first Thai public health university in 1948. Renamed Mahidol University in 1969 in honor of the present king's father, it has become a leader in public health education and research in Asia and the world. Its overall aim is to improve health outcomes and quality of life in developing countries and for all mankind. The mission includes public health education at all levels, collaboration in health research, provision of technical and health promotion services, and preservation of the national and local culture and wisdom. The concept of sustainable development is integrated into the curriculum with the acknowledgement that the growth and development of the country must respect natural resources, the environment and the culture. Efforts to improve public health are examined in economic, social, environmental, political and cultural contexts. This section describes a field training program that integrates the concept of sustainability in remote villages of Thailand.

3.2. Field Training: Models of Practice for Sustainability

The Public Health Program at Mahidol University provides education and training in various facets of public health service delivery, administration and research at the undergraduate, master's and doctoral level. Numerous training programs are available for Thai students as well as international students from developing and developed countries across the globe. One of their hallmark training programs involves students across all levels (undergraduate and graduate) from various disciplines—both within and outside the discipline of health. This field training in the northern province of Nakornrachasrima varies in terms of the time commitment depending on which program a student is enrolled in. For interdisciplinary graduate students and undergraduates from the college of public health or the medical college, the field training is a six week module. Students in the community health undergraduate program join the project for three weeks of on-site training. Students live on site during the training program in one of the participating villages. Student preparation

includes theoretical and concrete education related to sustainable development, public health, environmental resource protection, capacity team building, empowerment, leadership, principles of equity and human rights, communication and cultural values. Once in the field, the students identify health problems that are amenable to an intervention which they develop, implement and evaluate. The University typically supports members of the community who offer to rent or lease a part of their home or nearby property to the students.

In the spring of 2010 approximately 17 different teams consisting of 15 to 26 students and supervising faculty developed projects in separate villages. The faculty supervisors visited on site periodically and maintained ongoing communication with the team members. At the outset, each group identified a graduate student as the team leader. The first step of community engagement consisted of establishing a rapport with stakeholders in the community including local residents, other health providers (informal and formal), local industries and policy makers. Students identified a list of health problems based on an in-depth community health assessment and then prioritized programs that could continue on after they left the village. This section describes projects at three villages in various stages of development at the time of the site visits. Approximately four to six hundred people lived in each village and all were located in rural regions in northern Thailand.

Students at Field Site 1 identified chronic prevalent chronic diseases including heart disease, hypertension, and diabetes as major health concerns in their village. While heart disease, hypertension and diabetes are predominantly manifested in adults, the associated behaviors related to exercise, diet and stress start in childhood. Thus the students decided to target behavioral risks that impacted the local villager's health. The students designed a program of stress reduction and physical fitness for the community.

At the time of the Field Site 1 visit, the authors observed an evening health promotion demonstration. Approximately 150 villagers, including adults and children, came to participate in the event. The students had included the villagers in the planning and design of the program. An outdoor, open stage in the middle of the village was set up with microphones, colorful decorations and educational posters with small incentive prizes for participants at the end of the evening. Students demonstrated yoga as a means to relax and exercise. This session engaged the villagers to try out the various movements, including a forced laughter as a means of stress reduction which brought many smiles to the villagers. Several Thai village children also demonstrated Thai boxing as a fitness exercise, which they had learned from the students.

Field Site 2 students identified five health problems of concern in their village. These included hypertension, diabetes, diarrhea, dengue fever and dental caries. They had gathered data from local residents, local primary care unit health providers and informal healers, such as a monk in the village. At the time of the observation, they were still in the process of planning interventions to address these problems. The purpose of their site visit was to examine their findings to date and proposed interventions. Planned health promotion activities included fitness instruction such as dancing, nutrition education and hand washing demonstrations. They had identified interested health volunteers to continue their work after their field visit had terminated and were including them in the planning stage of activities. They also shared their insights into the local culture that they were learning from this immersion. They planned to develop interventions that acknowledged and respected the local social, cultural and economic factors.

Field Site 3 students also prioritized health problems with input from the community members. These included hypertension, obesity, unclean water, and inadequate waste disposal. In contrast to the other sites, they found access to the local primary care unit difficult which made health data collection problematic. So they developed a modified health risk appraisal form and were in the process of having the villagers fill out the survey with their guidance. They also planned to set up blood pressure and obesity screenings with an educational component planned for those at risk. They had designed colorful, easy to read, educational posters to display at the screenings. At the time of their site visit, the students estimated that they had engaged only 10–15% of the village population in the survey; they were strategizing how to increase the community's participation. They also were in the process of evaluating political and economic resources aimed at improving the community's water through old pipe replacement.

At each of the three site visits, students explored lessons learned to date and challenges ahead. Students expressed the advantage of learning while doing as opposed to learning from theoretical or book knowledge. Immersion in the field allowed them to observe local village customs, explore traditional values, be readily accessible, and develop trust. A challenge noted in all three villages was that the available stakeholders were primarily elderly caretakers and young children. It was difficult to engage the working population of adults as many toiled in the fields all day or lived and worked in the city during the week to provide for their extended families. Students at all sites were in the process of training members of the village so that potential positive outcomes from their projects could be sustained.

It was interesting to note that chronic disease and behavioral factors were targeted across all three sites, as opposed to more systematic environmental and economic problems such as access to clean water and waste disposal. However, although only one group identified the concern of water quality, students at all sites discussed the environmental, political, social and cultural impact on health in their assigned villages. Most of the students lived in urban settings themselves and had discovered the villagers often had different or conflicting cultural norms and values from their own. For example, in one village a local monk reportedly dispensed a cure for cancer which the students found disconcerting. Working in interdisciplinary teams helped them to confront problems from unique, holistic perspectives. They were learning to work cooperatively and deal with uncertainty, two prerequisites for grappling with the concept of sustainability as suggested El Ansari and Stibbe [21].

4. Discussion

Tackling the complex issue of sustainability presents a dilemma of crisis proportions for local villagers in developing countries as well as empowered stakeholders in developed countries. Public health researchers as well as ecologists, economists, and social and behavioral scientists need to come to the table with their unique skills. The World Bank notes that social development is the "glue" behind the concept of sustainability. The four main goals associated with social development identified include making societies more inclusive, cohesive, accountable and resilient [39]. To attain the goal of sustainability, the political will must be supportive and leadership in the field of education and research must address the fluid nature of the checks and balances associated with development in an ever changing world.

The example of Thailand is instructive in that it is a developing country that has achieved significant success in the reduction of poverty and improvement in many health indicators. Waring [7] proposed a synthetic or cultural evolutionary theory of human behavior to guide the science of sustainability. He identified four major themes within this revolutionary theoretical perspective: human evolution assumes that our adaptation included successful and maladaptive features; humans have a social rationality and are inherently rationale; culture evolves and is a never-ending process of adaptation; and adaptation is also affected by behaviors, beliefs, institutions, the physical environment and genetic influences. These esoteric philosophical assumptions need to be grounded in the real world. Researchers and educators from all concerned disciplines need to develop creative instructive methods to explore the profound implications of these philosophical tenets. It is essential to train ordinary citizens and future leaders to own the problem of sustainable development while working on the highly elusive goal of achieving sustainability in an ever changing and shrinking world.

The field training experience at the Mahidol University School of Public Health adheres to the Sufficiency Economy's concept of moderation as well as the principle that health care service providers should work with pride, honor and integrity [38]. Public health services provided to the village members follow best practices and standards of the various academic disciplines involved. The populations served neither expect nor desire that medical technology will solve all their problems. Working collaboratively with the students from interdisciplinary backgrounds for sustained periods allows community members and students to learn to respect each other and have pride in their own culture, traditions and professions.

5. Conclusions

In conclusion, an evolving ecological model which acknowledges behavioral, cultural, social and economic influences on the sustainability of a healthy environment is an urgent mandate which will entail expertise from a wide range of disciplinary perspectives. In the past, the public health community has focused on the physical environment but has not been adequately engaged in the economic aspects of sustainable development. Producing leaders to function in a web of uncertainty where the checks and balances of sustainable development are in constant flux is a priority at the global level. The interrelatedness of behaviors related to consumption, economic incentives, evolving methods of production, cultural values and environmental depletion and constraints are plainly visible across all socioeconomic indices and geographic locations on the planet. An in-depth innovative exercise in the field at Mahidol University in Thailand encourages students to become leaders in the backdrop of this urgent crisis of sustainability. It is a small step toward a realistic examination of the theoretical principles for the science of sustainability as suggested by those from the ecological economic persuasion.

The challenges cannot be harnessed or addressed through one lens however. Future collaborative educational and research efforts need to be shared in order to evaluate best practices to meet unique regional and country needs while focusing on the global implications of any sustainable development interventions. The program described was delivered in the context of a targeted group with its own social and cultural norms and environmental and health challenges. Indeed it was a program mission to not only promote public health education, research and service but also to do so while preserving the

local culture and wisdom. We have much to learn about integrating local culture and wisdom into our skill bag of necessary tools to promote sustainable development. Indeed theoretical assumptions of evolving theories on sustainability remind us that culture itself is an adaptive process and is itself in constant flux. The Rio Declaration [4] recognized the "integral and interdependent nature of the Earth, our home" while proclaiming 27 distinct principles to achieve the goal of sustainable development for human beings who are "entitled to a healthy and productive life in harmony with nature." The groundwork has been laid; it is time to move beyond theoretical propositions and take action.

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