ABSTRACT

The 20th century and the beginning of the 21st century have seen a dramatic change in the burden of illness from acute infectious disease to chronic noncommunicable disease (NCD), and today NCDs are the largest cause of death in people of working age. NCDs also account for over 60% of global mortality especially in the less wealthy nations. The reduction in acute and infectious disease is a reflection of the effectiveness of mainstream biomedical systems, but these are proving increasingly expensive and ineffective in dealing with the health crisis caused by NCDs. This paper will posit that an alternative model of healthcare, that of Integrative Medicine, presents as a relatively cost-effective and efficacious model for nation-states in the Pacific Island Region to adopt in dealing with their health issues. Drawing on examples from across the world, the argument will be made that adoption of an integrative medicine model will have both direct and indirect savings in healthcare costs as well as lead to improved performance and productivity in the workforce. Finally, the paper will look at some of the critical issues relating to the adoption of such a model and their implications for small island nations.
INTRODUCTION

Modern systems of treatment and management of disease are largely built around the science of medical biology or biomedicine that uses principles of positivism and reductionism to conceptualise notions of health and illness and approaches to treatment and management of disease (Sarafino, 2008). The widespread use of biomedicine across the world has led to remarkable successes in terms of curtailing the prevalence and impacts of communicable diseases (Friedman & Adler, 2007). Biomedicine works largely from a cause/effect and pathogen/disease paradigm of single causal agents, and this has been very appropriate in terms of dealing with infectious disease. In Australia, for example, mortality rates from infectious diseases dropped from 180 deaths per 1000 in 1921 to about 8 deaths per 1000 in 1996, a triumph of the advances in biomedicine and public health (Duckett, 2004). Among most of the countries of the Pacific Island Region, these impacts of the biomedical model can be seen in significant drops in the mortality rates due to communicable diseases over the last few decades (WHO, 2013a). As Libster (2001) describes it, the impacts of biomedicine are nothing short of miraculous.

However, while biomedicine has been very successful in dealing with acute infectious forms of disease, it has not been so successful dealing with chronic, often stress related, degenerative diseases, which are often a product of personal attitudes and lifestyle choices (Clark, 2000). The latter, referred to as chronic diseases or as Noncommunicable Diseases (NCDs), are increasingly becoming the primary cause of death globally with 63% of the estimated 57 million deaths in 2008 being caused by NCDs (Gulland, 2013). These include those caused by cardiovascular disease (17.3 million), cancers (7.6 million), respiratory disease (4.2 million) and diabetes (1.3 million), all of which share risk factors of tobacco use, physical inactivity, the harmful use of alcohol and unhealthy diets (Beaglehole, et al., 2011; WHO, 2013a).

This paper excavates some of the key aspects of the biomedical model, especially in the context of countries in the Pacific Island Region and the management of NCDs. It then looks at alternative models of health that function under the overarching umbrella of Complementary and Alternative Medicine Systems (CAMS), identifies some of the trends in their use, and highlights some of the applications, such as with relation to the management of NCDs. Finally, the argument is made that both CAM approaches and biomedical approaches have benefits that can be greatly increased if they work synergistically with each other. The model of Integrative Medicine is discussed as a model of bringing these different systems together, and some of the implications of the adoption of such a system in the Pacific Island Countries are delineated in the conclusion.

A clarification that needs to be made at this point is that the author is of the view that the more traditional terms of ‘Global North and South’ or ‘Developed and less-developed’ are either geographically inaccurate or represent an ‘aspirational’ view that is inaccurate. As such the terms Majority World (of countries with less income per capita, where the majority of the world lives, such as the countries of the Pacific Island Region), and Minority World (of countries with high income per capita, where the minority of the world live) will be used through the rest of the paper.
BACKGROUND

The impacts of NCDs are visible in countries of both the Minority and Majority World, and over 90% of premature deaths (before the age of 60) due to NCDs occur in the Majority World (Lenoir-Wijnkoop, et al., 2013). The impacts of NCDs on years of life for selected countries from the Majority and Minority World are delineated in the chart below. As part of the Majority World, statistics from two countries from the Pacific Island Region (PIR), are presented, as this region is the focus of this paper, and two countries from the Minority World are also drawn on, Australia as a Minority World country from the region and the United States as arguably the largest economy in the world.

This chart points to the increasing impacts of NCDs in the Pacific Island Region where they cause 63% of all deaths as against 19% caused by communicable diseases. Fiji, for example, has been quite successful in dealing with communicable diseases with only around 23% deaths caused by them as against 67% caused by NCDs. Papua New Guinea, on the other hand, continues to struggle with communicable diseases still causing 62% of all deaths. In both the countries of the Minority World, Australia and the United States, NCDs are clearly the largest causes of death. However, the problem is not restricted to the volume of the problem, as NCDs often lead to death that is slow and painful and preceded by long periods of disability which impacts on the quality of life of the person as well as increasing the expenditures on health (Beaglehole, et al., 2011)
This trend is also exacerbated as the world’s populations continue to rise, as they have in the past, from 2.5 billion in 1950 to 6.9 billion in 2012, and in the Pacific Island Region the populations of Fiji, Papua New Guinea, New Caledonia, Solomon Islands and Vanuatu have grown from around 2.2 million to around 8.73 million in the same period (UN, 2012). This trend of continuing population growth brings more pressures on the health budgets of countries in the Majority World, the limitations of which can be seen in the following table in relation to the same four countries examined in the first table:

**Table 2: Health expenditures of selected countries (2011)**

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>FIJI</th>
<th>PNG</th>
<th>AUSTRALIA</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>GNP per Capita</td>
<td>4610</td>
<td>2570</td>
<td>38110</td>
<td>48820</td>
</tr>
<tr>
<td>Total expenditure on Health as % of GDP (2011)</td>
<td>3.8</td>
<td>4.3</td>
<td>9</td>
<td>17.9</td>
</tr>
</tbody>
</table>

(WHO, 2013b, 2013c, 2013d, 2013e)

As can be seen, the GNP per capita in the two selected PIR nations is very limited compared to the two countries of the Minority World, and the proportion of that invested in health is also far less compared to that of Australia and more dramatically, the United States. The implication is that the countries in the Pacific Island Region cannot afford to follow health approaches adopted by the richer nations and need to develop more effective and cost-efficient ways of dealing with NCDs.

The impacts of NCDs are also closely linked to poverty, both as a cause and as an effect. Poorer people are much more likely to develop NCDs than those from wealthier backgrounds, because of limited access to health services and increased exposure to risk factors (WHO, 2011). Furthermore, health-care costs can adversely impact families and when combined with lost income from those affected by NCDs, can drive poor families deeper into poverty (Beaglehole, et al., 2011). Alwan and MacLean (2009) also point out that 5-15% of total disposable income from some of the poorest households of the Majority World is spent on tobacco, one of the risk factors of NCDs, and that 15-25% of household income is spent on treatment of diabetes. They raise these issues at the macro level, quoting statistics of an estimated US$ 84 billion of lost economic production as a result of heart disease, stroke and diabetes (if left unaddressed) in 23 countries of the Majority World, and an estimated diabetes-related cost of between 2-4% of GDP in most countries of the Majority World. The World Health Organisation also stresses the enormous burden of health costs as the cumulative economic losses to low and middle-income countries, just from the four most prevalent NCDs, are estimated to surpass US$ 7 trillion over the period 2011-2025, an average of US$ 500 billion a year (WHO, 2013a).

Clearly NCDs are a very significant and immediate problem for countries across the world, but particularly for countries from the Majority World such as the nations in the Pacific Island Region. The World Health Organisation (2013) states that the spread of NCDs is driven by forces such as the globalisation of unhealthy lifestyles that leads to raised risk factors such as increased...
blood pressure, blood glucose and obesity. Globally, leading risk factors for mortality include raised blood pressure (responsible for 13% of deaths globally), tobacco use (9%), raised blood glucose (6%) and overweight and obesity (3%) (WHO, 2011). The critical aspect of many of these risk factors is that they are preventable through behaviour modification approaches and where already present can be managed through a combination of biomedical approaches and behaviour modification. There is significant evidence to show that the promotion of community-based interventions that target NCD risk factors are effective as well as cost efficient particularly in countries of the Majority World (Alwan & MacLean, 2009). Some effective population-based interventions include those targeting tobacco use, alcohol use, and unhealthy diet and physical inactivity while at the individual level, screening, immunisation and multi-drug therapy have been found effective (Habib & Saha, 2010; WHO, 2013f).

The World Health Organisation promotes a Package of Essential Noncommunicable Disease Interventions (PEN) in the Pacific as evidence-based and cost-effective. The interventions involved in PEN range from strengthening primary health care through training and resourcing, counselling services for reduction of alcohol and tobacco use, fitness clubs to increase physical activity, vegetable gardens to improve local diets and peer group support (WHO, 2013f). All of these are positive efforts towards dealing with the endemic issues of NCDs. However, there are further possible avenues of intervention that will be discussed in the next sections.

**COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM) SYSTEMS**

Across the world, there are a plurality of medical systems that include traditional and indigenous medical systems as well as others that have moved across from country to country, such as acupuncture and homeopathy (WHO, 2005). Countries of the Minority World used to consider the work of many of the approaches other than biomedicine as legitimate and authoritative until the beginning of the twentieth century, and the Flexner report of 1910, which led to the delegitimisation and marginalisation of all non-biomedical approaches (Steuter, 2002; WHCCAMP, 2002). For most of the twentieth century, these approaches remained marginalised but began experiencing resurgence over the last few decades (Bodeker, 2007), very much in tandem with the increasing impact of NCDs in those countries. In fact, it can be argued that the helplessness of biomedicine to deal with the impacts of NCDs is the reason for the increasing popularity of CAM approaches in countries of the Minority World (WHCCAMP, 2002; Baer, 2007).

As against this, medical systems other than biomedicine have continued to play a significant role in many countries of the Majority World such as India where, for example, popular medical systems include those of Ayurveda, Yoga, Naturopathy, Unani, Siddha and Homeopathy, all of which are regulated through a specialised government department (AYUSH, 2010). Generally, CAM approaches may be described as the:

> broad domain of healing resources that encompasses all health care systems, modalities, and practices and their accompanying theories and beliefs other than those intrinsic to the politically dominant health care of a particular society or culture in a given historic period. CAM includes all such practices and ideas self-defined by their users as preventing or treating illness or promoting health and well-being. Boundaries
within CAM and between the CAM domain and the domain of the dominant system are not always sharp or fixed.

(Medical Council of New Zealand, 2011,1)

The National Centre for Complementary and Alternative Medicine in the United States, a government agency that explores CAMs in the context of science, rigorous research, training and information dissemination, has developed a widely used classification that organises CAMs into five major groups with some overlap, as presented in this table.

Table 3: Complementary and Alternative Medicine Approaches

<table>
<thead>
<tr>
<th>Major Domains of each CAM</th>
<th>Examples under each domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Medical Systems/Alternative Health Care Systems: These cut across more than one of the other groups</td>
<td>Traditional Chinese Medicine; Ayurveda; Homeopathy; Naturopathy; Chiropractic; Native American Medicine.</td>
</tr>
<tr>
<td>Mind-Body Medicine, taking a holistic approach to health that explores the connection between the mind, body and spirit.</td>
<td>Yoga; Meditation; Music therapy; Dance therapy; Hypnosis; Prayer and Mental Healing.</td>
</tr>
<tr>
<td>Biologically based Practices: use substances found in nature such as herbs, foods vitamins and other natural substances.</td>
<td>Herbal therapies; special diets such as macrobiotics; Orthomolecular medicine such as megavitamin therapy; Individual biological therapies such as shark cartilage or bee pollen.</td>
</tr>
<tr>
<td>Manipulative and body-based practices</td>
<td>Massage; Feldenkrais; Alexander Technique.</td>
</tr>
<tr>
<td>Energy Medicine: Biofield therapies intended to influence energy fields of the body</td>
<td>Qigong; Reiki; Therapeutic touch.</td>
</tr>
<tr>
<td>Energy Medicine: Bioelectromagnetic-based therapies using verifiable electromagnetic fields.</td>
<td>Magnet therapy</td>
</tr>
</tbody>
</table>

(WHCCAMP, 2002; NCCAM, 2010)

In addition to the examples cited in this table, there are numerous traditional medicine systems that are part of the medical plurality in each country and could form part of the intensive efforts to prevent and manage NCDs. Fiji, has both the traditional systems of the indigenous Fijians and the Indo-Fijians, and indigenous medical systems are present in most if not all the Pacific Island Region Nations (WHO, 2001). All of these provide opportunities for governments in the Pacific
Island Region in terms of developing effective systems that can complement biomedical systems.

CAM has been increasingly incorporated as part of mainstream approaches across the world. The United States Surgeon-General’s Task Force on Pain Management has identified the need to incorporate CAM approaches with biomedical approaches and increasing acceptance has been supported by a number of scholarly journals that are instrumental in building the scientific evidence base of the use of CAM approaches (Peters, et al., 2002; PMTF, 2010). Further, CAM approaches are increasingly being regulated by government bodies such as the Office of Complementary Medicine within the Therapeutic Drugs Administration in Australia (TGA, 2010), the Department of AYUSH that regulates Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy in India, the National Office of TM/CAM in South Africa, the National Institute of Traditional Medicine in Peru, the Islamic Medicine centre in Kuwait, and the Department of Traditional Medicine in Bulgaria (WHO, 2005).

Research into CAM also emphasises their increasing acceptability among biomedical practitioners, with one report revealing that over 80% of general practitioners surveyed have referred patients for complementary therapy, and another confirming that over 90% of family physicians find CAM approaches legitimate (Clark, 2000; Cohen, et al., 2006). The Australian Medical Association acknowledges the effectiveness of CAMs and recognises that evidence-based aspects of Complementary Medicine are part of the repertoire of patient care (AMA, 2002).

CAM approaches are widely used in most countries of the world and the data from some of these approaches is presented as follows:

Table 4: Utilization of CAM in selected countries

<table>
<thead>
<tr>
<th>Country</th>
<th>% Utilization of CAMs¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>48</td>
</tr>
<tr>
<td>Canada</td>
<td>70</td>
</tr>
<tr>
<td>Chile</td>
<td>71</td>
</tr>
<tr>
<td>China</td>
<td>40</td>
</tr>
<tr>
<td>Colombia</td>
<td>40</td>
</tr>
<tr>
<td>Denmark</td>
<td>33</td>
</tr>
<tr>
<td>France</td>
<td>49</td>
</tr>
<tr>
<td>Germany</td>
<td>75</td>
</tr>
<tr>
<td>Israel*</td>
<td>9.8</td>
</tr>
<tr>
<td>Pakistan**</td>
<td>58</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>47</td>
</tr>
<tr>
<td>United States</td>
<td>62/36²</td>
</tr>
</tbody>
</table>

¹The survey years in each country varies from 1994 to 2002 depending on the source of the data
²62% included prayer for health reasons: 36% when prayer was excluded
(Bodeker, 2007,6) * (Shuval & Mizrachi, 2004) ** (Shaikh, et al., 2009)
Table 4 reinforces the fact that medical plurality is a way of life in most countries. Traditional medicine, in particular, continues to be very popular in rural areas of the Pacific Island Region, as reported in the ‘Legal Status of Traditional Medicine and Complementary/Alternative Medicine: A Worldwide Review’ (WHO, 2001). This report states that around 60-80% of the population in Fiji use traditional medicine. It also points to a survey ongoing at the time of 2000 practising providers of traditional medicine to suggest that many people in Fiji continue to use traditional medicine, but hesitate to call it that because traditional medicine has been associated with witchcraft. In Kiribati, traditional medicine continues to be popular despite being outlawed (as lacking scientific evidence) since the 1940s. The same report suggests that traditional medicine is widely practised in PNG and is encouraged by non-governmental organisations as a sensible and cost-effective option in the face of rising costs of modern healthcare systems. This continuing popularity of traditional medicine in the PIR nations can be seen as a strength that can be drawn on in terms of dealing with the issues of NCDs.

CAM approaches that include traditional medicine just discussed, clearly present another avenue for the prevention and management of NCDs. As an example, yoga, as a CAM approach, has considerable evidence to show its effectiveness in dealing with NCDs. A meta-review of the literature on yoga research till 2006 concluded that yoga is effective in the support of cardiovascular health and can play a key role in musculoskeletal health and cancer care (Penman, et al., 2008). Yang (2007) conducted a systematic review of 32 articles published between 1980 and 2007 and reported that yoga interventions are generally effective in reducing body weight, blood pressure, glucose level and high cholesterol, which are the four leading risk factors of NCDs. There is an increasing body of evidence that is reported in scientific journals, including a number of journals focussing specifically on complementary and alternative medicine, to show that CAMs can provide a viable add-on in the prevention and management of NCDs.

CAM methods tend to differ from biomedical ones in their approach to health and these differences can be very important in making a plurality of medical approaches more effective. CAM practitioners do not generally work from a cause-effect or pathogen-illness paradigm, and tend to take a more holistic approach incorporating the body, the psychosocial, the environmental and the sociocultural aspects (Libster, 2001). This holistic approach is likely to be very useful to provide support, care and healing for those with NCDs, even where the causes cannot be pinpointed. Furthermore, this lack of focus on illness also means that CAM practitioners tend to give more attention to nurturing their patient’s health and are proactive in addressing lifestyle factors. CAM approaches such as Yoga and Tai Chi focus on five areas of health enhancement including a) stress management; b) spirituality and meaning issues; c) dietary and nutrition counselling; d) exercise and fitness; and e) addiction or habit management (Jonas & Levin, 1999). This multi-pronged approach is very much in line with PEN approaches discussed earlier, and is likely to be a good fit if adopted widely to deal with the issues of NCDs.

The Ornish Lifestyle Heart Programme is a good example of CAMs utilised to deal with cardiovascular conditions. It involves the traditional yogic low-fat vegetarian diets and physical yoga practices as well as meditative practices and other supports such as those of the peer group. This programme has been very effective in providing management of cardiac issues at a fraction
of the cost of traditional interventions (Pelletier, et al., 2010). CAMs can provide a relatively low-cost manner of responding to the needs of consumer demand as well as the growing problems associated with NCDs (Baer, 2007). Cost savings can also be seen in the use of traditional medicine, for example, according to Fiji’s Biodiversity Strategy and Action Plan, the average household uses US$ 200 worth of medicinal plants every year. If this were to be replaced by biomedicine, the cost to the nation would be around US$ 75 million annually (WHO, 2001).

As populations in many countries rise and the populations are increasingly ageing, CAMs can provide an effective and cost efficient way to reduce stress and suffering associated with NCDs. However, presently, biomedical approaches continue to maintain a predominant position in terms of health systems (Ernst, 2002). For CAM approaches to function effectively in tandem with biomedical approaches, a number of issues will have to be considered. Some of these are raised in the next section in the discussion of the adoption of an Integrative Medicine approach.

### INTEGRATIVE MEDICINE AS A WAY FORWARD

The predominance of biomedicine raises issues of power sharing among practitioners of different health systems when it comes to their working together. Further, other issues include the different paradigms followed by different health systems, which can lead to an inability to communicate across these systems and attendant clashes (Gaydos, 2001). They also include the need for establishment of ethical and safety standards across different systems as well as the need to ensure the patient’s right to choose the modality (Peters, Chaitow et al., 2002). The paradigm of *Integrative Medicine*, as one that brings together the different modalities and enables them to work effectively together, is one that has been espoused by many scholars and is gradually finding acceptance among practitioners (Libster, 2001; Ventegodt, et al., 2007; Lemley, 2010). Integrative Medicine is also known as Integrated Medicine or Integrative Healthcare and refers to the blending of conventional approaches with CAM approaches and lifestyle approaches in a holistic way (AIMA, 2009). It can be viewed as:

> [S]panning the biases of disciplines and cultures, taking a systems approach to the treatment of the patient as well as the physical disorder. It stresses prevention, self-care and establishing healing partnerships. Practitioners in every field are beginning to integrate allopathic (biomedical), behavioural medicine and alternative practices into their treatment protocols.

*(Libster, 2001, 36)*

Integrative Medicine draws on an evolving set of principles to enable health practitioners to work effectively in collaboration with each other as well as with the patient. These principles are particularly useful as they address those issues that could prove detrimental to the different modalities working together and provide a framework for collaborative work. The first of these is *Partnership*, which focuses on teamwork and power-sharing between practitioners of different modalities as well as patients and researchers. This involves a mutual respect of diverse healthcare traditions and an ability to reflect honestly on one’s own particular discipline while learning to appreciate the views and methods of others who see the world differently (Peters, et al., 2002)
The second principle is that of Patient-Centeredness, where the patient remains in a position of leadership of the process and the health professionals act as consultants and guides (PMTF, 2010). This principle addresses many of the issues of power imbalances in the patient/practitioner relationship that have formed a critique of the biomedical systems in the past, while also helping to develop the relationship between practitioners and allowing the choice of modalities to rest with the user. A related principle focuses on the Use of Self, and involves self-care, self-responsibility and self-awareness. The user of the healthcare system is encouraged to take responsibility for their own health and to be proactive in terms of addressing their own needs. This involves an emphasis on health promotion, self-care and early intervention for maintaining and promoting health (Sierpina, 2001; PMTF, 2010) and makes a close fit with much of what has already been the focus of NCD interventions encouraged by WHO.

**Wholeness** in healthcare delivery is another principle central to Integrative Medicine. This principle considers all the factors that influence health and disease including mind, body, spirit, community and environment, and points to the care of the whole person instead of the usual dualistic prisms like those of mind/body (Lemley, 2010). In the process, this principle addresses many issues such as the differences around the ways that cultures view health and illness and provides a more inclusive environment for values and beliefs.

In line with the scientific framework that modern society is built on, Integrative Medicine espouses the principle of Evidence of safety and efficacy and several experts have pointed to the need for ‘high quality’ scientific research and evidence to help identify safe and effective CAM approaches (Sierpina, 2001; WHCCAMP, 2002; Lemley, 2010). While this principle is a useful one, it is also subject to a number of issues that need to be addressed if the evidence base is to be broadened and strengthened, such as the impact of the pharmaceutical industry on research funding, acceptance of research into these areas by university departments, statisticians, large databases and full time research staff, as well as the forms of evidence that are given priority over others, where research into CAM approaches does not fit neatly into the research models espoused by biomedicine (Gaydos, 2001; Peters, et al., 2002).

While these are immediate issues, they point to the need for policies that encourage government investment in the development of an evidence base for CAMs, not only on profit or cost saving motives, but based on the needs of their citizens. In the process they are likely to emerge with enormous cost savings as discussed earlier, as well as providing their citizens with choices in an integrative healthcare system. The principles of Integrative Medicine can help guide advocacy for policy change as well as the formation of structures such as integrative medicine clinics that provide a new form of holistic health care (Peters, et al., 2002). In the context of the Minority World, Andrews and Boon (2005) suggest that structural integration is happening at several levels. At one level, patients are integrating CAM modalities and biomedicine towards managing their own health. At another level, medical practitioners are incorporating CAMs into their own practices either providing the service through a CAM practitioner or retraining themselves to become dual practitioners. And finally, there is the emergence of the integrative clinic, where conventional and CAM practitioners work together in partnership, as a real representation of integration in clinical practice. The reality is that CAMS are part of the lived reality of most
people across the world, despite the formalised systems of exclusion that have been central to biomedicine. Integrative Medicine provides a very useful framework on which to build the strengths of biomedicine as well as CAM approaches to develop a more inclusive form of health care.

**IMPLICATIONS AND CHALLENGES FOR THE PACIFIC ISLAND REGION**

NCDs continue to present a growing challenge to the health systems of countries across the world. They pose particular challenges to countries of the Pacific Island Region that cannot afford to make the same level of investment in cost-intensive health systems as those developed in the Minority World (WHO, 2013). As discussed earlier, NCDs impact on individuals, families and communities in countries such as those in the Pacific Island Region, exacerbating the effects of poverty and as well as causing poverty, while at the same time increasing the burden of health costs on these countries that can ill afford those costs (Beaglehole, et al., 2011; WHO, 2013a).

Integrative Medicine approaches that bring together Biomedicine and Complementary and Alternative Medicine Systems present a great opportunity for dealing with the overwhelming impacts of NCDs, in the form of cost effective solutions that have wide-spread acceptability among local populations already, especially in the Pacific Island Region. They can shift the burden of management of disease from the professional practitioner and allow the individual consumer to take up some of the responsibility for the management of their health issues themselves. While some of this kind of work is already underway in the form of the PEN interventions promoted by WHO in the Pacific Region (WHO, 2013f), the development of an effective integrative medicine paradigm that incorporates many stand-alone interventions into a holistic structure would help towards long-term and cost-effective sustainability of the interventions. This approach would be especially effective at reducing many of the risk factors associated with NCD-related mortality such as raised blood pressure, tobacco use, raised blood glucose and obesity, all of which are preventable through behavior modification approaches (Habib & Saha, 2010; WHO, 2013a).

The existence of traditional health systems in most countries in the PIR, such as the traditional healers in Fiji and PNG, is a major resource available to these countries (WHO, 2001). Besides the expertise provided by these traditional health practitioners, the access to traditional medicines that they provide can be an effective and cost effective method towards the management of NCDs. Further, they also provide opportunities for health based economic enterprise, especially those built around the growing organic and sustainability industries.

Countries in the Pacific Island Region can also draw on a range of complementary approaches from across Asia to strengthen their Integrative Medicine systems. Movement-based approaches such as Yoga and Qi Gong/Tai Chi are widely practiced modalities, with a significant evidence base in terms of effectiveness in working with NCDs (Penman, et al., 2008; Yang, 2007). Furthermore, these approaches could find culturally easy acceptance with particular communities within the Pacific Island Nations and are relatively low-cost in terms of dissemination. Other complementary healing systems from Asia such as Ayurveda and Acupuncture also provide opportunities to build into integrative health systems that allow Biomedicine to work in tandem with other approaches.
The principles of Integrative Medicine allow for the adoption of a range of approaches and partnerships that can work towards dealing with the issues of NCDs in the Pacific Island Region in an effective and cost-efficient manner. The challenge for the countries in this region is to develop policies and legislation that will enable integrative health approaches to be adopted on the ground and will provide oversight of different kind of health systems and practitioners. While integrative health systems have not been fully incorporated in any one country, there are effective policies, legislation and structures in countries like India and China that can provide the basis for developing effective systems in the Pacific Island Nations. It would require considerable political will to overcome the inertia of dependence on the biomedical model, but would provide extraordinary benefits in the long term, both in terms of the health of the citizens of that country, as well as in terms of cost savings and improved productivity within those Pacific Island Countries that adopt such an Integrative Medicine Approach.
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