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Original Article

The STTEP: A Model for Musculoskeletal Health Care in Marginalized Communities

Dein R. Vindigni, Ph.D.,[1] Barbara I. Polus, Ph.D.,[1] Gay Edgecombe, Ph.D.,[2] Michael Howard, M.B.A.,[3] Joan van Rotterdam, B.Sc., Grad Dip.(Chiro), M.Med.Sci.(clinical epidemiology),[4] Felicity Redpath, B.Appl.Sc., B.C.Sc.,[5] and Elma Ellen[6]

Abstract

Background and objectives: This article introduces the STTEP (Sustainable Training, Treatment, Employment Program) Model. The Model has been in operation since 1995. It provides a useful conceptual framework for policy makers, practitioners, and educators. The Model evolved from work carried out by chiropractors, myotherapists, and related health workers in poor communities through the charitable organization Hands On Health Australia. The STTEP Model grew from a recognition that poor communities mostly rely on heavy, repetitive physical labor for work. For these communities, there is little opportunity to access suitable and affordable health care requiring them to frequently live with the pain and disability associated with highly prevalent musculoskeletal conditions in their communities. The STTEP Model includes myotherapy and musculoskeletal health promotion for uncomplicated musculoskeletal conditions.

Conclusions: The Model also supports training for community members and collaborates with community leaders to promote employment opportunities for graduates. The Model embraces an ethos of cultural sensitivity, corporate responsibility, and sustainability. Project Hope (Hands On Philippines Education), a program in the Philippines, is used to illustrate the Model in action.

Introduction

This article describes the evolution of a Sustainable Training, Treatment, Employment Program (STTEP) Model for health workers trained in myotherapy (advanced massage therapy) within a public health context (see Box 1 for a former student's experience with the STTEP). The knowledge and experience gained through the implementation of the STTEP Model may be useful for people involved in the development of policy and practice for primary health care services. [1]

The STTEP evolved from a voluntary health organization, Hands On Health Australia (HOHA). This charity, established in 1987, embraces an ethos of community volunteers promoting sustainable health and well-being. Through HOHA, a range of practitioners, mostly in complementary medicine and tactile therapies, offer their services to communities in need. Myotherapy is the assessment and treatment of muscle pain and related conditions including sporting or occupational injuries and injury prevention. Self-help strategies for patients also assist in their recovery process and the prevention of further injuries. Patient management and practice management principles are an equally important aspect of working as a myotherapist.[2]

Pivotal to sustainability of the STTEP Model is the establishment of accredited training programs or an affiliation with existing accredited training institutes that are linked to ongoing employment opportunities. In 1995, the World Health Organization (WHO) developed "Guidelines on the basic training and safety in chiropractic," which also made recommendations for delivering musculoskeletal care through the training of primary care workers.[3] The training arm of the STTEP is consistent with WHO recommendations for implementing training programs of this kind.

The training component of the STTEP has three levels of entry. Level 1 has been designed primarily for people who

[1]Division of Chiropractic, RMIT University, Melbourne, Victoria, Australia.
[2]Division of Nursing and Midwifery, RMIT University, Melbourne, Victoria, Australia.
[3]Actuary in private practice, Melbourne, Victoria, Australia.
[4]University of Newcastle, Newcastle, New South Wales, Australia.
[5]Chiropractor in private practice, Hong Kong.
[6]Pastoral worker, Bagong Barrio, Manila, Philippines.

Box 1. A STTEP in the Philippines: A Myotherapy Graduate's Story

Maria has not held a paying job since graduating from high school. She has completed the Level 1 Introduction to Myotherapy and was successful in obtaining a paid position as a myotherapist. She sat an exam with the Department of Health and became a registered myotherapist. She plans to enroll in the Level 2 Myotherapy Program being offered in 2008 or 2009. She continues to offer voluntary services to her local community in keeping with the ethos of the STTEP Model.

STTEP, Sustainable Training, Treatment, Employment Program.

do not have any formal prerequisites for an accredited myotherapy course including anatomy and physiology and/or a background in the allied health professions. It may include traditional healers and high-school graduates. Levels 2 and 3 entry require a number of additional prerequisites including anatomy and physiology.

This article traces the development of a grass-roots myotherapy program that was first established in 1995 to address the substantial burden of musculoskeletal illness experienced by Filipino people living in poverty. It also touches on the theoretical framework that underpins the program and the genesis of the STTEP Model. It concludes by suggesting that there is considerable potential to adapt and adopt the STTEP model in other communities as a public health approach for treating the high burden of uncomplicated musculoskeletal acute and chronic conditions. This model could also be incorporated into primary health care centers, hospitals (acute, rehabilitation, and long term), and private spas and/or holistic health centers.

The Problem

In developing countries, there are few if any health services freely available or easily accessible for families living in poverty. Those services that are available may not be situated in all geographical areas nor linked to an affordable transport system. In addition, people living in poverty have minimal options for full-time employment. This is compounded by the limited education opportunities because they may not have the entry prerequisites to study as health professionals in tertiary institutions. Health worker and barefoot doctor programs have, over the years, attempted to address some of these basic needs.[4,5] Dispensing medications has been a major part of these health workers' roles, rather than the relief and treatment of painful and disabling conditions through tactile therapies. Massage has nonetheless been traditionally used by many cultural groups, and is being increasingly recognized as a valuable adjunct to Western medicine for the treatment of musculoskeletal conditions. There is a growing appreciation for the effectiveness and cost-effectiveness of tactile therapies in delivering simple and safe musculoskeletal care.[6]

Some anecdotal evidence also suggests that public health programs that incorporate traditional methods of healing help to affirm the cultural heritage of the community and empower community members. With the rise of complementary and alternative medicine worldwide and in some cases the lack of regulation and standards, there is, however, a parallel need to formally re-introduce such practices in a regulated manner linked to national governing authorities such as health departments.[7,8]

Many people living in poverty such as the Philippines rely on heavy, repetitive physical labor for employment. This includes occupations such as farmers and factory workers that can also involve children and the elderly as workers. In these communities, there is usually minimal access to affordable and culturally suitable health care for pain relief. In third world countries such as the Philippines, access to public hospitals, pathology tests, radiographs, and drugs is also expensive. This problem is compounded by the reality that these communities traditionally care for large families with little or no access to welfare. Thus, if they become ill or disabled because of a musculoskeletal or other condition, the provision of affordable health care assumes priority. Even for the minority in developing countries that can afford mainstream health services including pharmaceuticals and/or surgical interventions, these modalities are not necessarily the treatment of choice.[7]

It is common for people from poorer socioeconomic backgrounds to endure pain and disability and incur further financial, physical, and personal hardship due to their limited ability to work, sustain their family's daily needs, and to pay for much-needed health services. The need for effective and affordable care in poorer communities is compounded by a lack of accessible and suitably trained tactile therapists as well as economic and sociocultural barriers.[7]

There is a growing recognition of the substantial burden of illness imposed by these musculoskeletal conditions in disadvantaged communities throughout the world.[7] Conditions affecting the bones, muscles, and joints are the most notorious and common causes of severe, long-term pain and disability globally, especially among marginalized communities, impacting substantially on health-related quality of life and imposing escalating economic costs internationally.[7] The WHO continues to urge individuals, governments, and nongovernment organizations to collaborate on innovative models of sustainable health care that address these concerns at governmental, philanthropic, and grass-root levels.[7]

Evolution of the STTEP Model

In 1995, an Australian volunteer (Redpath) traveled to the Philippines as part of HOHA in response to a call from people living in the Bagong Barrio squatter settlement in Manila to help manage the painful and disabling conditions experienced in this community.

HOHA is a registered charity that provides voluntary health services and clinical training for health workers where health care is not readily accessible. It was established in 1987 to empower communities that are socially and financially disadvantaged. Clinics have been established in Australia and New Zealand, and are currently being developed in the Asia Pacific region.

Redpath, a chiropractor and lecturer in soft tissue therapy at RMIT University, spent 18 months based in Bagong Barrio, treating and training people living in the Barrio, other squatter settlements, and poor provincial areas. The training was an intensive introduction to myotherapy for resident health workers, Hilots (traditional Filipino healers), and others with no formal tertiary education in the assessment and treatment of the common musculoskeletal conditions experienced by people living in poverty. Redpath was assisted by a pastoral worker, Ellen, who coordinated the Hands On Health program in the Philippines. Ellen's primary role included recruiting prospective students and overseeing the administration of the myotherapy training in the Hands On Health clinic built earlier by Brunswick Rotary, Australia in the early 1990s. The clinic was, and continues to be, auspiced by the Birhen Lourdes Catholic Parish in Bagong Barrio.

Redpath's course, coupled with the ongoing voluntary care that myotherapy students and graduates provided to the poor, became the forerunner of Project HOPE (Hands On Philippines Education). On completing the training in myotherapy, the first and second groups of graduates sat accreditation examinations with the Philippines Department of Health (DOH) in order to practice as massage therapists under Filipino legislation. Their expertise in both theoretical and practical aspects of the diagnosis and management of uncomplicated musculoskeletal conditions achieved acclaim within the DOH and the community. In 1997, 12 of the graduates were employed by Intercare, a multidisciplinary health clinic operating in Makati, the commercial center of Manila. From 1995 to 1996, approximately 50 students were trained by Redpath. Over three-quarters of these graduates continue to be employed in programs throughout the Philippines and other countries. For many, it represents the first well-paid occupation in their lives and an opportunity to break the cycle of poverty by finding gainful employment to support themselves and their families. The program may also contribute to the well-being of their community through ongoing voluntary outreach projects that address painful, disabling musculoskeletal conditions that limit people's ability to work. This is a focus of a Participatory action research project that commenced in 2007.

This history sets the context and framework for the STTEP Model, which aims to achieve the training and employment of health workers, free or low-cost treatment of patients (to alleviate pain and disability, promote quality of life), and the sustainability of both treatment and training. The widespread acceptance of the work seeded by Redpath in 1995 and subsequently adopted by the first group of graduates was the catalyst for the training of 10 additional groups of myotherapy graduates. Many are currently in full-time employment, a small number in part-time employment, and the remaining graduates to date utilize their skills and knowledge to care for their family and community in a voluntary capacity. In excess of 20,000 patients have been treated by graduates of Redpath's program (Elma Alla, personal communication, 2006). A Participatory action research team is now working with the community to begin a trial of a range of pain, disability and quality of life measures in order to analyze client outcomes and ensure that the STTEP is sensitive and responsive to the community's needs. See Box 1 for a myotherapy graduate's story.

Project HOPE

Project HOPE (Hands On Philippines Education) was initiated by Hands-On-Health Australia (HOHA). Some assistance was provided as part of a joint project by the non-government, nonprofit entities, Myotherapy For Life (MFL), incorporated in the Philippines and established in 2006.

The project began implementing HOHA's STTEP Model in 2007 with the initial phase of the program designed to run over 3 years. The STTEP encompasses training and employment of health workers, free or low-cost treatment of patients to alleviate pain and disability and to promote their quality of life, and sustainability of both treatment and training. During 2007–2008 Project HOPE devoted time to the training of additional lecturers. The year 2008 was used to consolidate the program, and 2009 will be used for modest expansion of the program. Objectives for the first 3 years include the training and accreditation of an anticipated 100 health workers, with some 15,000 patient treatments.

There are three levels of training conducted over a 3-year period. In the preliminary phase (years 1 and 2), high-school graduates participate in an introductory massage therapy course (level 1). MFL is currently conducting level 1 training programs. An intermediate massage therapy course (level 2) is aimed at college graduates, preferably with some form of medical-related training, and this forms the core business of Project HOPE. In the third year, advanced training (level 3) will commence for graduates of level 2 with sufficient knowledge and clinical experience.

All training encompasses practical experience, with each intake of up to 15 students and two lecturers/clinical supervisors visiting a squatter settlement or low socioeconomic rural area in the province.

A theoretical framework for the STTEP Model

The employment successes experienced by the pioneering graduates and the ethos of giving back to their community through regular outreach contributed to both the formation and the maturation of the STTEP model. It is envisaged that myotherapy graduates will become valued members of the primary health care team.[1] This multidisciplinary collaboration is consistent with health promotion principles as described in the Ottawa Charter.

The Ottawa Charter. The Ottawa Charter defines health promotion as "the process of enabling people to increase

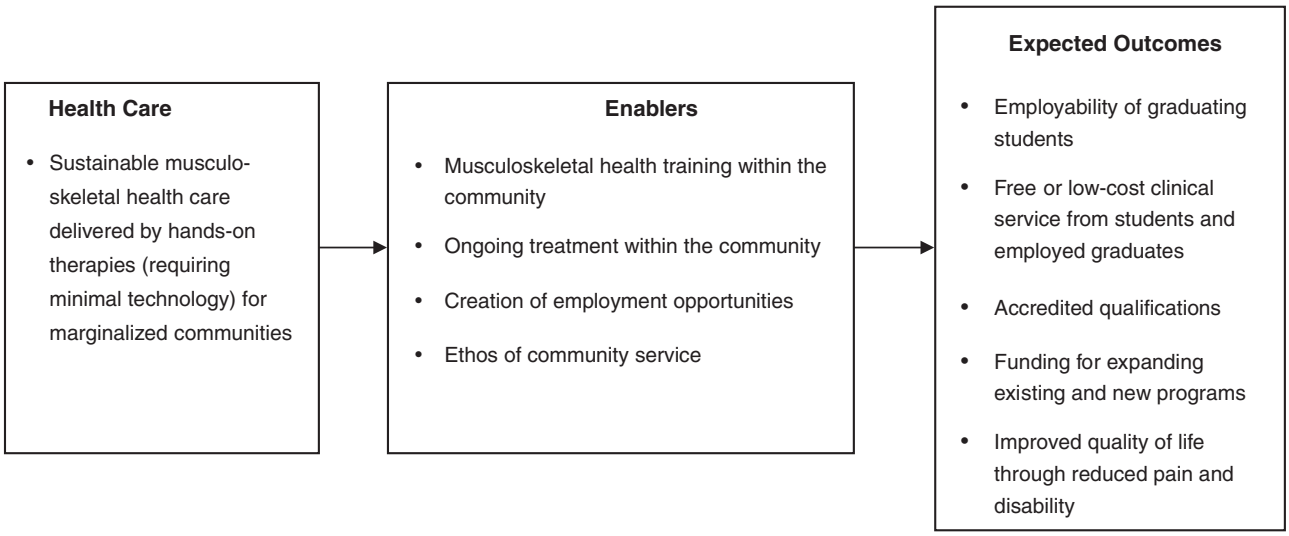

FIG. 1. Sustainable Training, Treatment, Employment Program Model.

control over, and to improve, their health."[9] It emphasizes the importance of intersectorial collaboration and community participation in achieving equitable health outcomes. In this Charter, members of the community are encouraged to become active participants in decisions that impact on their own health.[9,10] Intersectorial collaboration in the evolving STTEP model continues to be one of its distinguishing features.

In addition to these features, the STTEP model also embraces some of the key priorities for socioeconomic development identified in the Jakarta Declaration on Health Promotion auspiced by the WHO.[10] These include the following.

1. Promoting social responsibility for health;
2. Consolidating and expanding partnerships for health;
3. Increasing community capacity and empowering the individual; and
4. Strengthening community action so that communities have control of their own initiatives and activities and have ready access to information, learning opportunities, and funding support.

The WHO[3] recommendations recognize the pivotal role that primary health workers (PHWs) play in the delivery of health care to people living in poverty. These recommendations are supported by an increasing body of evidence that demonstrates effective community health interventions carried out by PHWs.[3,11] The current evaluation of the STEPP Model has clearly identified the key contribution played by PHWs through the provision of direct services to the poor.

PHWs are well placed to understand both the sociocultural barriers and the facilitators to promoting the health of their communities. There is also some evidence that PHWs can provide effective and affordable management of uncomplicated conditions, especially for poorer communities.[12,13]

PHWs in the Philippines have historically played an important role in community-based health promotion–based initiatives such as early child development and early integration programs and are ideally placed and suited to promoting health within their communities.[14] The STTEP Model also utilizes PHWs in achieving improved musculoskeletal health outcomes. These health workers are members of the local community, trained as myotherapists to deliver musculoskeletal care and health promotion.

Beyond the provision of tactile therapies delivered on-site in the community, PHWs play a key role in helping their communities to address the modifiable risk factors associated with musculoskeletal conditions and comorbidities including type 2 diabetes and heart disease. Addressing risk factors common to the individual's musculoskeletal and general health status such as obesity, physical inactivity, and smoking can create a synergy for health promotion.[15] In addition, because of the intimate understanding of the communities that they serve, PHWs assist families to adjust and cope with the challenges and stresses experienced by those enduring chronic, debilitating pain syndromes.

The potential of programs such as Project HOPE stems from their small, local beginnings and an ethos of ongoing community service, inclusiveness, and collaboration involving the community in every stage of the journey including the development, implementation, and evaluation of programs.[8] The outcomes of the STTEP Model will be described in subsequent reports.

The STTEP (Sustainable Training, Treatment, and Employment Program) Model

The STTEP Model is the culmination of voluntary work spanning 2 decades. In this model, there is an emphasis on ensuring the sustainability of training, treatment, and employment opportunities. Figure 1 illustrates the key elements in the STTEP Model. These elements are: Governing Principle, Enablers, and Expected Outcomes.

Governing principle. The Governing Principle of the STTEP model is the provision of sustainable health care delivered by hands-on therapies (requiring minimal technology) to address the musculoskeletal conditions affecting marginalized communities.

Enablers. Enabling Principles describe the methods used to help realize the Governing Principle and in the STTEP

Model include the following: Musculoskeletal health training within the community; ongoing treatment within the community; and creation of employment opportunities and an ethos of ongoing community service in marginalized communities.

1. *Musculoskeletal health training within the community.* Project HOPE is informed by continued development and refinement of the myotherapy curriculum according to WHO guidelines.[3,16] These guidelines recognize the critical role that local health care workers play in delivering culturally sensitive musculoskeletal care to improve the quality of life of marginalized communities.[3] Apart from managing uncomplicated, musculoskeletal conditions, this curriculum may include addressing modifiable risk factors such as maintaining ideal weight and physical activity, injury prevention and, where possible, explores and integrates local traditional practices.

Consistent with the priority to engage with the community in a culturally sensitive and relevant context is the development and refinement of the training program and practice standards with the collaborative input of key stakeholders in the community. These include health workers, educators, other local health professionals, government agencies, welfare agencies, potential employers, and policy makers. Adopting a train-the-trainer approach also helps to empower the community by providing those graduates with the ability and aspiration to teach with the necessary skills, confidence, and qualifications to impart their knowledge. This approach equips the community with the personnel and the capacity to sustain the program in the longer term.[17]

2. *Ongoing treatment within the community.* In order to encourage sustainability of the treatment arm of the STTEP Model, community outreach programs instill an ethos where those trained continue to serve the poor and actively seek opportunities to establish further outreach clinics in other marginalised communities.

MFL, a Filipino not-for-profit organization, was established in 2006 in partnership with HOHA. These charitable organizations provide a charitable framework through which local volunteers—including those trained through Project HOPE—can continue to serve and empower the poor with their expertise as tactile therapists. MFL is responsible for conducting regular outreach programs in poor communities and forms the benevolent arm of Intercare, a multidisciplinary private health clinic that is a key employer of myotherapy graduates.

3. *Creation of employment opportunities.* The WHO recognizes poverty as a key social determinant of health and acknowledges the creation of employment as integral to breaking the cycle of poverty and ill-health.[1,18] Project HOPE has seeded and nurtured business initiatives to create employment opportunities for graduates both locally and abroad through multidisciplinary clinics such as Intercare and the burgeoning spa industry.[19] Beyond the direct provision of gainful employment for graduates, key employers also foster improvements in the quality of training and clinical practice in response to benchmarking and market testing.

4. *Ethos of community service.* Imparting and cultivating an ethos of community service throughout the program is a distinguishing feature of the STTEP model. This begins at the recruitment phase of the training program when new students are introduced to the founding philosophy of Project HOPE, which is to serve and empower marginalized communities. It is reinforced through students' participation in outreach programs, which form a compulsory requirement of the course. It is further endorsed and encouraged by HOHA and MFL volunteers who regularly donate their time to train and treat people living in poverty.

Expected outcomes. Successful health care organizations require clear goals to achieve improved health outcomes for their clients and/or community. Accordingly, the STTEP Model has identified several Expected Outcomes. These include the following: employability of graduating students and free or low-cost clinical service from students and employed graduates; and whether the intervention is making a change, in terms of pain and disability and patient self-report of their health status and well-being.

Another Expected Outcome is the attainment of qualifications that are accredited in the communities in which they are being delivered, and the final Expected Outcome is funding for expanding existing and new programs derived from personal and community donations (such as Rotary and Lions Service clubs) as well as corporate support to ensure their sustainability.

The Governing Principle, Enablers, and Expected Outcomes form the basis of the STTEP. The STTEP is delivered by skilled and qualified myotherapists who are responsible for helping to manage the widespread, disabling musculoskeletal conditions affecting marginalized communities.

Conclusions

The STTEP model evolved from a need to promote sustainable musculoskeletal health care in marginalized communities that endure a substantial burden of painful and disabling conditions. This high burden of illness is compounded by limited access to affordable and accessible health care services. The contemporary focus of the STTEP model is to provide the creation of ongoing employment opportunities to empower marginalized people.

The preliminary success of the work seeded in Bagong Barrio has been substantially expanded by the inclusion of a nationally accredited Australian qualification. The course now incorporates additional clinical hours and a greater diversity of core subjects. The aim is to prepare graduates for a variety of employment and vocational opportunities.

The STTEP Model provides information for policy makers, educators, and practitioners to consider when establishing similar programs with impoverished communities. Beyond its application in the Philippines through Project HOPE, the STTEP Model has the potential to be adapted by communities that are dependent on the effective, affordable, and sustainable management of musculoskeletal conditions.

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Disclosure Statement

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References

1. The World Health Report. Primary Health Care. Now More Than Ever. Geneva: WHO, 2008.
2. Myotherapy at RMIT University. Online document at: www.rmit.net.au/browse;ID=C6064 Accessed June 6, 2008.
3. World Health Organisation. WHO Guidelines on Basic Training and Safety in Chiropractic. Geneva: WHO, 2005.
4. Gong Y, Chao L. The role of barefoot doctors. Am J Public Health Suppl 1982;72:59–61.
5. Mitchell M, Hussey LM. The aboriginal health worker. Med J Aust 2006;184:529–630.
6. Vickers A, Zollman C. ABC of complementary medicine: Massage therapies. BMJ 1999;319:1254–1257.
7. BJDOnline Bone and Joint Decade musculoskeletal portal. Online document at: www.boneandjointdecade.org Accessed February 20, 2008.
8. Bodeker G. The increasing global use of traditional, complementary and alternative medicine. Oral presentation. 3rd International Congress on Complementary Medicine research, March, 2008. Sydney Convention Centre, Australia, 2008.
9. World Health Organization, Ottawa Charter, 1986. Online document at: www.who.int/hpr/NPH/docs/ottawa_charter_hp.pdf Accessed June 12, 2008.
10. World Health Organization. The Fourth International Conference of Health Promotion: WHO, Jakarta, 1997. Online document at: www.who.int/healthpromotion/conferences/previous/jakarta/en/ Accessed June 12, 2008.
11. Vindigni D, Perkins J. Identifying musculoskeletal conditions among rural indigenous peoples. Aust J Rural Health 2003;11:187–192.
12. Pacza T, Steele L, Tennant M. Dental Train-the-Trainer Program for Aboriginal Health Workers in the Kimberley Region. A Report Prepared by the School of Oral Health Sciences, The University of Western Australia, Nedlands, 2000.
13. Doyle MJ, Keeffe JE, Harper CA. Training Koori Health Workers for Effective Community-based Eye Care Services. Ninth National Health Promotion Conference People, Places and Programs. Darwin, 1997, May 18–20.
14. Armecin G, Behrman JR, Duazo P, et al. Early Childhood Development Through an Integrated Program: Evidence from the Philippines. Impact Evaluation Series No. 2. World Bank Policy Research Working Paper 3922, 2006.
15. Stacey K, Vindigni D, Stacey P. Chiropractic and health promotion an opportunity for synergy? Chiropract J Aust 2002;32:7–13.
16. Furlan AD, Imamura M, Dryden T, Irvin E. Massage for Low-Back Pain (Review). The Cochrane Collaboration. Hoboken, NJ: John Wiley & Sons, 2008.
17. Harvey D, Tsey K, Cadet-James Y, et al. An evaluation of tobacco brief intervention training in three indigenous health care settings in north Queensland. Aust NZ J Public Health 2002;26:426–431.
18. Smith JD. Australia's rural and remote health: A social perspective. Croydon, Australia: Tertiary Press, 2007.
19. Cohen M, Bodeker G. Understanding the Global Spa Industry. Oxford: Butterworth-Heinemann, 2009.

Address correspondence to:
Dein R. Vindigni, Ph.D.
Division of Chiropractic
RMIT University
Bundoora West Campus, VIC 3083
Melbourne, Victoria 3083
Australia

E-mail: dein@optusnet.com.au