

Meeting the Healthcare Challenges of the Future — Moving from Disease Care to Healthcare

a report by

Dr Sarina J Grosswald

Director, Continuing Medical Education, InforMED



Dr Sarina J Grosswald is Director of Continuing Medical Education for InforMED and is President of her own consulting firm SJ Grosswald & Associates. She has 25 years of experience in medical education. Before starting her firm in 1994, Dr Grosswald was Associate Director of Education for the American College of Obstetricians and Gynaecologists. Her work has also included positions with the National High Blood Pressure Education Program and the University of North Carolina School of Medicine. In the last few years, Dr Grosswald has been promoting education and policy development related to prevention of all types of medicine, particularly preventive medicine, in order to bring these issues to the forefront of the US's healthcare policies. Dr Grosswald has a doctorate degree in adult learning from George Washington University and a Master's degree in Instructional Design from the University of North Carolina, Chapel Hill.

Global Disease Burden

Until the 1960s, the most fatal diseases in the world, and those causing the greatest long-lasting disability among the world's population, were communicable diseases such as tuberculosis or smallpox. Over time, improvements in sanitation and water supplies brought a change in the impact of these diseases. By 1990, there was a transition from communicable to non-communicable diseases, with pneumonia carrying the highest disease burden followed by diarrhoeal diseases and diseases of the newborn.¹

By 2020, the World Health Organization (WHO) predicts that the conditions causing the greatest global disease burden will be heart disease, followed by severe depression, traffic accidents, stroke and chronic lung disease (see *Table 1*).¹ This demonstrates the greatest shift in the underlying causes of disease, from infectious diseases to neuropsychiatric conditions, that are increasing at a higher percentage than any other form of disease.

Underlying Cause

Two factors are highlighted with regard to the diseases expected to have the greatest impact on global health in the near future: they are predominately chronic and, most importantly, they are preventable. While, in the past, poverty has been a major factor associated with the prevalence of disease, current data indicates that social and economic development does not guarantee gains in national or global health. In the US today, chronic disease is prevalent in 40% of the population, with approximately 100 million Americans suffering from at least one chronic disorder.²

With more people living longer and the percentage of populations with chronic diseases increasing, this presents a great humanitarian burden, with quality of life compromised for a large percentage of populations. In addition, this will have a significant

impact on the continually rising healthcare costs. In the US, three-quarters of the healthcare costs are for patients with chronic disease, and the majority of these individuals are neither disabled, nor are they elderly.²

Conventional healthcare for chronic disease primarily addresses palliative care, with the added effort of limiting further illness. Such an approach, while an important measure in helping chronic disease patients, does not address the causes of these illnesses. In 70% to 90% of disease, a major contributing factor is stress. Stress is a factor in both causing disease and in exacerbating existing disease.

The world is experiencing an epidemic of stress, from overstretched, time-pressured lifestyles to war-torn environments with ever-present uncertainty and armed conflict. Individuals throughout the world are reacting physically and mentally to constant stress, tension and anxiety.

Of the top five diseases identified by the WHO as causing the greatest global disease burden by 2020, all have the underlying contributing factor of stress. There is a clear medical connection between stress, heart disease and stroke, as well as depression. However, even traffic accidents have a causative factor of stress. In the US, a situation referred to as 'road rage' has increasingly resulted in fatal accidents.

The effects of stress created in areas tormented by military and civilian conflict have not been widely studied. However, the recent terrorist attacks on the US, which have had a dramatic effect on the psychology of its citizens, provides an immediate and dramatic reflection of the consequence of such anxiety. In the month following the 11 September 2001 terrorist attacks in the US, the number of prescriptions for anti-anxiety medication increased over 20%.³ In addition, doctors are being inundated with calls from patients with diseases such as chronic pain and asthma reporting that their

1. C.J.L Murray and A D Lopez, eds. (1998), *The Global Burden of Disease Series*, Harvard University Press, Cambridge.
2. C Hoffman, D Rice and H Sung (1996), "Persons with chronic conditions: Their prevalence and costs", *The Journal of the American Medical Association (JAMA)*, 276(18): pp. 1,473-1,479.
3. S Okie, "Use of Anti-Anxiety Drugs Jumps", *US Washington Post*, 14 October 2001.

problems related to these conditions are worsening.⁴ Chronic diseases that were previously well managed and under control are being exacerbated intensely by the stress and anxiety created by the attacks.

Eliminating the Root Cause

Experts agree that these reactions leave no doubt about the strength of the mind-body connection. While, in some cultures, this has not only been well known, but well regarded, it is only recently that Western medicine has started to recognise the importance of the relationship between the mind and the body. With this shift in understanding, research in this area is increasing in order to investigate and substantiate approaches that work and likewise to distinguish between what works and what does not prove effective.

One mind-body approach that has over 40 years of research with over 600 published studies from research institutions worldwide is the transcendental meditation (TM) programme. TM is a technique for reducing stress and thereby improving health. It is a simple and natural mental technique for deeply relaxing the mind and body, balancing the physiology and strengthening the immune system.

A significant body of research documents the applications of TM for healthcare and, in particular, for managing stress-related disorders such as hypertension and other risk factors for cardiovascular disease. The hundreds of research studies on TM that are published in leading, peer-reviewed journals demonstrate the unique physiological changes that occur during the practice, as well as the effects that accrue over time (see Table 2). (Note: The research cited in this article is specific to the unique technique of TM and should not be generalised to generic forms of 'meditation'.)

Table 1: Global Disease Burden

1990	2020
1. Pneumonia	1. Heart Disease
2. Diarrhoeal Disease	2. Severe Depression
3. Disease of the Newborn	3. Traffic Accidents
4. Severe Depression	4. Stroke
5. Heart Disease	5. Chronic Lung Disease

Source: WHO and the World Bank Global Disease Burden Series, 1998.

Table 2: The Measured Physiologic Effects of the Transcendental Meditation Technique

- Decreased heart rate
- Reduced respiratory rate
- Reduced blood pressure
- Reduced cholesterol
- Lower cortisol levels

Supporting the concept that TM creates unique physiologic changes, electroencephalogram (EEG) results show TM produces a state significantly different from sleep, which can be referred to as 'wakeful alertness'. The mind is alert, while the body is deeply rested.⁵

Some of the most extensive research, including over US\$17 million of funding by the US National Institutes of Health (NIH), has demonstrated the beneficial effects of TM in preventing stress-related disease and reducing illness related to existing disease. Research has demonstrated its effectiveness in reducing hypertension^{6,7}, the risk of stroke⁸, cigarette smoking⁹ and mortality due to cardiovascular disease¹⁰. A recent landmark study showed that use of the TM technique can reduce the progression of heart disease, thus actually reversing the disease.¹¹

TM has proven to be a potent mind-body approach that can treat the most significant contributing factor associated with the diseases that are expected to create

4. A Goldstein, "Terrorism Tied to Jump in Pain Problems", Washington Post, 1 October 2001.

5. M C Dillbeck and D W Orme-Johnson (1987), "Physiological differences between Transcendental Meditation and rest", *American Psychologist*, 42: pp. 879–881.

6. R Schneider, F Stagers, C Alexander, et al. (1995), "A randomized controlled trial of stress reduction for hypertension in older African Americans", *Hypertension*, 26(5): pp. 820–827.

7. C N Alexander, R H Schneider, F Stagers, W Sheppard, B M Clayborne, M Rainforth, J Salerno, K Kondwani, S Smith, K G Walton and B Egon (1996), "Trial of stress reduction for hypertension in older African Americans II – Sex and risk subgroup analysis", *Hypertension*, 28: pp. 228–237.

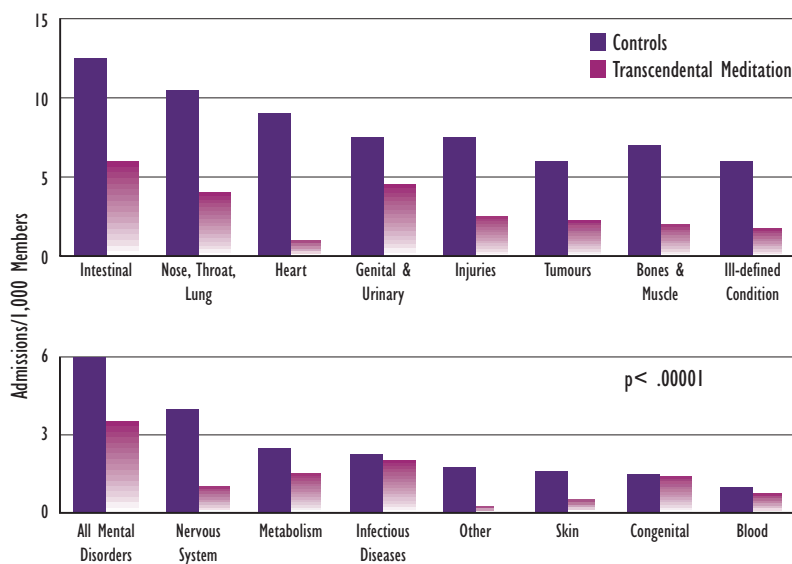
8. J Zamara, et al. (1996), "The usefulness of the Transcendental Meditation program in the treatment of patients with coronary artery disease", *American Journal of Cardiology*, 77: pp. 867–870.

9. C N Alexander, P Robinson and M Rainforth (1994), "Treating and preventing alcohol, nicotine and drug abuse through Transcendental Meditation: a review and statistical meta-analysis", *Alcoholism Treatment Quarterly*, 11: pp. 13–87.

10. R Schneider, C N Alexander and M Rainforth, et al., "Randomized controlled trials of effects of the Transcendental Meditation program on cancer, cardiovascular and all-cause mortality", *Proceeding of the Society for Behavioral Medicine Annual Meeting*, 3–6 March 1999, San Diego, CA.

11. A Castillo-Richmond, et al. (2000), "Effects of stress reduction on carotid atherosclerosis in hypertensive African Americans", *Stroke: Journal of the American Heart Association*, 31: pp. 568–573.

Figure 1: Reduction in Need for Healthcare Through the Use of the Transcendental Meditation Programme



Source: D W Orme-Johnson (1987), "Medical care utilization and the Transcendental Meditation program", *Psychosomatic Medicine*, 49: pp. 493–507.

the greatest global disease burden in the near future – stress. The use of this approach has the potential to greatly reduce human suffering and have an impact on the prevalence of the most predominant diseases.

As health improves, there is a corresponding decrease in healthcare costs. Research has shown that the use of the TM technique can reduce healthcare costs by more than 50%.^{12,13,14} The reduction in the presence of disease and the prevention of disease described as follows leads to marked reductions in healthcare costs.

Primary Prevention of Disease

A significant benefit of the TM technique is not only its ability to improve the course of diseases by reducing the underlying factor of stress, but the role it plays in primary prevention of disease. In evaluating the effects on overall health, research has examined healthcare utilisation of those practicing TM, as compared with norm and control groups. The results showed that the TM participants consistently had fewer than half the number of doctors' visits and days in hospital. In addition, the TM group showed relatively little increase in need for healthcare with

increasing age that is usually expected and in contrast to the trend seen in controls.¹⁵

Other studies show 60% to 70% lower rates of hospital admission for medical and surgical conditions in the TM group, with reductions in 17 disease categories (see Figure 1). Hospital admissions were 87% less for diseases of the heart and blood vessels, 55% less for tumours, 73% less for respiratory disorders, 87% less for neurological problems and 30% less for infections. There were 80% fewer hospital admissions and 55% fewer out-patient visits to the doctor. Those over 45 had 88% fewer hospital days than controls. Analysis by disease categories showed that hospital admission rates were 92% lower for immune, endocrine and metabolic disorders, 92% lower for cardiovascular disease, 92% lower for mental health and substance abuse and 94% lower for musculoskeletal disorders.¹⁶

Conclusion

Successes in reducing or eliminating certain devastating communicable diseases have demonstrated global health organisations' recognition and understanding of the role of prevention. Improvements in environmental conditions as well as introduction of immunisations have had dramatic effects on reducing and eliminating disease worldwide. However, projections for less than 20 years from now indicate a different cause of disease. Collective and individual stress is a major influencing factor in the conditions expected to have the greatest impact on the lives of populations worldwide.

While doctors and health agencies are familiar with the use of medicines to reduce and eliminate disease, focus must now move towards influencing the mind and consciousness of individuals and communities. A proven technique such as TM can have a dramatic effect on the health of the world. By managing collective and individual stress effectively – the underlying cause of the conditions expected to create greatest illness – and by actually preventing these diseases by the same approach, global care can accomplish its greatest purpose, moving from disease care to healthcare. ■

12. R E Herron, S L Hillis, J V Mandarino, D W Orme-Johnson and K G Walton (1996), "Reducing medical costs: the impact of Transcendental Meditation on government payments to physicians in Quebec", *American Journal of Health Promotion*, 10: pp. 208–216.

13. R E Herron, R H Schneider, G V Mandarino, C N Alexander and K G Walton (1996), "Cost-effective hypertension management: comparison of drug therapies with an alternative program", *American Journal of Managed Care*, 2: pp. 427–437.

14. R E Herron and S L Hillis (2000), "The impact of the Transcendental Meditation program on government payments to physicians in Quebec: an update", *American Journal of Health Promotion*, 14(5): pp. 284–291.

15. D W Orme-Johnson (1987), "Medical care utilization and the Transcendental Meditation program", *Psychosomatic Medicine*, 49: pp. 493–507.

16. D W Orme-Johnson and R E Herron (1997), "An innovative approach to reducing medical care utilization and expenditures", *American Journal of Managed Care*, 3: pp. 135–144.