

# Ways in Which Health Promotion and Neurological Disorders Prevention is Achieved

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## Abstract

Neurological disorders are a significant and increasing public health problem. Many of them can be either prevented or treated at a relatively low cost. Resources for neurological disorders are grossly inadequate in most parts of the world. Significant inequalities in provision of neurological treatment and care exist between developing and developed countries. Stigma and discrimination against people with neurological disorders are ubiquitous and need to be eliminated through public education and global campaigns.

**Keywords:** Stigma; Public education; Grossly inadequate; Public health; Non-communicable diseases; Individual patients

## Introduction

Public health is defined as the science and practice of protecting and improving the health of the population through prevention, promotion, health education, and management of communicable and non-communicable diseases including neurological disorders. In other words, public health is viewed as a comprehensive approach concerned with the health of the community as a whole rather than with medical health care that deals primarily with treatment of individuals. The focus of public health interventions could be primary, secondary or tertiary prevention [1]. Dignity of people with neurological disorders needs to be preserved and their quality of life improved. Long-term treatment and care of patients with chronic neurological disorders and conditions should be incorporated into primary care. Public health aspects of neurological disorders should be incorporated into undergraduate and postgraduate teaching and training curricula in neurology [2]. Many distinctions can be made between the practice of public health and that of clinical neurology. Public health professionals approach neurology more broadly than neurologists by monitoring neurological disorders and related health concerns of entire communities and promoting healthy practices and behaviours among them to ensure that populations stay healthy [3]. Public health specialists focus on health and disease of entire populations rather than on individual patients, whereas neurologists usually treat one patient at a time for a specific neurological condition. These two approaches could be seen as being almost at the opposite ends of the health-care spectrum [4].

## Methodology

What this chapter aims to do is to help build bridges between these two approaches and serve as a useful guide to the chapter that follows on the public health aspects of specific neurological disorders. Public health is the science and art of disease prevention, prolonging life and promoting health and well-being through organized community effort for the sanitation of the environment, the control of communicable diseases, the organization of medical and nursing services for the early diagnosis and prevention of disease, the education of the individual in personal health and the development of the social machinery to ensure for everyone a standard of living adequate for the maintenance or improvement of health [5]. The goal of public health is to fulfil every society's ambition to create conditions in which all people can be healthy. Public health addresses the health of the population as a whole rather than the treatment of individuals as shown in (Figure 1). World Health Organisation defines health as a state of complete physical,

mental and social well-being and not merely the absence of disease or infirmity. Healthy people in healthy communities are the ultimate goal of all public health interventions, which are aimed at promoting physical and mental health and preventing disease, injury and disability. Public health is particularly concerned with threats to the overall health of the community. As interventions are aimed primarily at prevention, monitoring the health of the community through surveillance of cases assumes great importance as does the promotion of a healthy lifestyle and healthy behaviour [6]. In many cases, however, treating a disease can be vital to preventing it in other people, such as during an outbreak of a communicable disease. Another way of describing public health is collective action for sustained population-wide health improvement as shown in (Figure 2). This definition highlights the focus on actions and interventions that need collaborative actions, sustainability and the goals of public health. Since the 1980s, the focus of public health interventions has broadened towards population-level



Figure 1: Health and the treatment of individuals.

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**Figure 2:** Sustained wide health improvement.

issues such as inequity, poverty and education and has moved away from advocating for change in the behaviour of individuals [7]. The health of people is affected by many elements ranging from genetics to socioeconomic factors such as where they live, their income, education and social relationships. These are the social determinants of health, and they pervade every society in the world. Predictably, poor people have more health problems and worse health than the better-off sections of populations [8]. Today public health seeks to correct these inequalities by advocating policies and initiatives that aim to improve the health of populations in an equitable manner [9]. The extension of life expectancy and the ageing of populations globally are predicted to increase the prevalence of many non-communicable, chronic, progressive conditions including neurological disorders.

## Discussion

The increasing capacity of modern medicine to prevent death has also increased the frequency and severity of impairment attributable to neurological disorders. This has raised the issue of restoring or creating a life of acceptable quality for people who suffer from the sequelae of neurological disorders [10]. Public health plays an important role in both the developed and developing parts of the world through either the local health systems or the national and international nongovernmental organizations. Though all developed and most developing countries have their own government health agencies such as ministries or departments of health to respond to domestic health issues, a discrepancy exists between governments' public health initiatives and access to health care in the developed and developing world [11]. Many public health infrastructures are non-existent or are being formed in the developing world. Often, trained health workers lack the financial resources to provide even basic medical care and prevent disease. As a result, much of the morbidity and mortality in the developing world results from and contributes to extreme poverty. Though most governments recognize the importance of public health programmes in reducing disease and disability, public health generally receives much less government funding compared with other areas of medicine [12]. In recent years, large public health initiatives and vaccination programmes have made great progress in eradicating or reducing the incidence of a number of communicable diseases such as smallpox and poliomyelitis. One of the most important public health issues facing the world nowadays is HIV/AIDS. Tuberculosis is also re-emerging and is a major concern because of the rise of HIV/AIDS-related infections and the development of strains resistant to standard antibiotics [13]. As

the rate of communicable diseases in the developed world decreased throughout the 20th century, public health began to put more focus on chronic diseases such as cancer, heart disease and mental and neurological disorders. Much ill-health is preventable through simple, non-medical methods: for example, improving the quality of roads and enforcing regulations about speed and protective measures such as helmet use help to reduce disability as a result of head injuries. To increase the awareness of professionals and people in general about the public health aspects of neurological disorders, and to emphasize the need for the prevention of these disorders and the necessity to provide neurological care at all levels including primary health care, WHO launched a number of international public health projects including the Global Initiative on Neurology and Public Health [14]. The outcome of this large collaborative endeavour, which involved many health professionals from all parts the world, clearly indicated that there was a paucity of information about the prevalence and burden of neurological disorders and a lack of policies, programmes and resources for their treatment and management. In general, health statistics focus primarily on quantifying the health status of populations and suffer from several limitations that reduce their practical value to policy-makers. The statistical information is partial and fragmented and in many countries even the most basic data are not available. Further, the simple head count approach does not allow policy-makers to compare the relative cost effectiveness of different interventions, for example the treatment of conditions such as acute stroke versus the long-term care of patients with chronic disorders such as Parkinson's disease or multiple sclerosis. At a time when people's expectations of health services are growing and funds are constrained, such information is essential for the rational allocation of resources. Health promotion can be facilitated through a combination of efforts aimed at raising awareness, changing behaviours, and creating environments that support good health practices, healthy public policies and community development. Rehabilitation may mitigate the effects of disease and thereby prevent it from resulting in impaired social and occupational functioning; it is an important public health intervention that has long been neglected by decision-makers. Moreover, rehabilitation is an essential aspect of any public health strategy for chronic diseases, including a number of neurological disorders and conditions such as multiple sclerosis, Parkinson's disease and the consequences of stroke or traumatic brain injury. Prevention strategies and interventions designed to reduce or prevent a particular disease are of two types. In population or mass approaches, a whole population is asked to be involved in modifying their behaviour in some way. In targeted or high-risk approaches, only high-risk individuals are involved, which necessitates some form of screening to identify those who are at high risk. Thus, a preventive strategy focusing on high-risk individuals will deal only with the margin of the problem and will not have any impact on the considerable amount of disease occurring in the large proportion of people who are at moderate risk. With targeted approaches, efforts are concentrated on those who are most at risk of contracting a disease. This has two benefits: first, it avoids the waste of the mass approach and, second, people who are identified as being at high risk are more likely to comply with behaviour change. However, such an approach could increase the costs because of the need to identify the high-risk group of people most likely to benefit.

## Conclusion

Which prevention approach is the most cost effective in a particular setting will depend on the prevalence of high-risk people in the population and the cost of identifying them compared with the cost of intervention. Some areas of behavioural change benefit from active government intervention through legislation or financial incentives.

For example, road traffic safety is one area where government action can make a big difference in preventing traumatic brain injuries. This can be achieved through control and legislation on alcohol and drug use, better roads, speed control, better motor vehicle design, and requirements to use seatbelts and helmets.

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### Conflict of Interest

None

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