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Development and implementation of Models of Care for musculoskeletal conditions in middle-income and low-income Asian countries

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A B S T R A C T

This chapter discusses the challenges faced in the development and implementation of musculoskeletal (MSK) Models of Care (MoCs) in middle-income and low-income countries in Asia and outlines the components of an effective MoC for MSK conditions. Case studies of four such countries (The Philippines, Malaysia, Bangladesh and Myanmar) are presented, and their unique implementation issues are discussed. The success experienced in one high-income country (Singapore) is also described as a comparison. The Community Oriented Program for Control of Rheumatic Diseases (COPCORD) project and the role of Asia Pacific League of Associations for Rheumatology (APLAR), a professional body supporting MoC initiatives in this region, are also discussed. The experience and lessons learned from these case studies can provide useful information to guide the implementation of future MSK MoC initiatives in other middle-income and low-income countries.

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Introduction

Prevalence, burden and risk of musculoskeletal conditions in low- and middle-income countries

The Asia–Pacific region covers approximately one third of the world's geographical area (51.3 million square kilometres) and is home to 61% (4.2 billion) of the world's population [1,2]. It contains countries at different stages of economic development (Table 1) [3,4], which account for about 30% of the world's gross domestic product (GDP) [1,2]. It is also home to some of the poorest communities in the world. In line with the rest of the world, musculoskeletal (MSK) conditions contribute significantly to disease burden in Asia. They have a substantial impact on affected individuals in terms of reduced quality of life, work participation and finances; increased utilisation of healthcare resources and carer burden; and increased cost to the economy [5]. In the Global Burden of Disease (GBD) 2010 study, all MSK disorders combined accounted for 21.3% of total years lived with disability (YLDs) and 6.8% of disease burden as measured by disability-adjusted life years (DALYs) worldwide [6–12], to which middle- and low-income Asia–Pacific countries contributed 46% [13,14]. The burden in terms of DALYs attributable to MSK conditions in middle- and low-income Asia–Pacific countries increased by 60% from 40.5 million in 1990 to 64.9 million in 2010, largely due to population growth and ageing [6–11,14–16]. The most common MSK conditions were low back pain (LBP) and neck pain (NP). Although osteoporosis was not included in the study, low bone mineral density (BMD) was included as a risk factor for fractures, thereby representing a proportion of the global burden from falls [17]. In 2010, middle-to low-income Asia–Pacific countries accounted for 52.0%, 37.0% and 44.9% of worldwide deaths, YLDs and DALYs attributed to low BMD, respectively. In these countries, deaths attributable to low BMD more than doubled from 72,000 in 1990 to 161,000 in 2010. YLDs increased by 51.6% from 2,146,000 in 1990 to 3,253,000 in 2010 [12,14].

Increasing age and obesity are the common risk factors for MSK conditions [18]. Middle- and low-income countries have more rapidly ageing populations than high-income nations, and are the regions where the greatest increase in the ratio of older to younger people is likely to occur in the future. In most high-income countries, demographic change occurred gradually, following steady socio-economic growth over several decades [19]. However, in many middle-income, low-income and newly developed countries, this change is being compressed into two or three decades. It is predicted that by 2050, an estimated 3.53 billion people, 40 years or older, will be living in middle- and low-income countries worldwide compared with 645 million people in high-income countries [20]. Obesity is also expected to increase significantly in middle- and low-income countries over the next two decades [21]. In these countries, 80%–90% of the population are involved in physical labour, including factory work and farming [22]. Work activities in subsistence communities, such as collection of water and farming, increase the incidence of LBP [23,24]. In urban areas, where rapid industrial growth occurs, the prevalence of occupational MSK conditions is very common [25]. As a result of these factors, MSK conditions are likely to increase dramatically over the coming decades, and there is a potential for healthcare systems in middle- and low-income countries to be ill-prepared for this burden with its associated costs [5].

The role of MSK Models of Care in middle- and low-income countries

Healthcare systems in middle- and low-income countries need to develop forward-looking policies to deal with the projected increasing burden attributed to MSK conditions and other non-communicable diseases (NCDs) [5,26]. Hence, research to determine the most acceptable, effective and sustainable Models of Care (MoCs) to optimally prevent and manage MSK conditions in these countries is required. Specifically, while a large volume of evidence for effective prevention and management of MSK conditions is now available, derived largely from research in high-income economies and reflected in clinical practice guidelines and policies targeted towards high-income settings [27], strategies to translate this evidence into policy and practice in middle- and low-income settings remain sparse. Implementation research to address these issues is therefore urgently needed.

A MoC is an evidence-informed strategy, framework or pathway that outlines the optimal manner in which care for specific types or groups of conditions should be made available and delivered to

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