



¹ Intersectoral Forum to Fight NCDs in Brazil (ForumDCNTs), Brazil

² Faculty of Public Health, University of São Paulo (FSP-USP), Brazil

³ School of Nursing, Federal University of Minas Gerais (EF-UFMG), Brazil

@MarkTUBarone

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Sleep disorders are an overlooked risk factor for non-communicable diseases

Ignoring sleep disorders will prevent countries from reaching the sustainable development goal to reduce premature mortality from non-communicable diseases by 2023, write **Mark Thomaz Ugliara Barone and colleagues**

Mark Thomaz Ugliara Barone,¹ Claudia Roberta de Castro Moreno,² Ana Carolina Micheletti Gomide Nogueira de Sá,³ Elton Junio Sady Prates,¹ Júlia Silveira¹

In recent years, multiple efforts have been dedicated to reducing premature mortality from non-communicable diseases (NCDs) by a third by 2030, as part of target 3.4 of the United Nations' sustainable development goals. The covid-19 pandemic has made achieving this target seem unlikely for many countries, but the NCD Countdown 2030 group recently argued that, with more strategic funding, this target can still be achieved even by low and middle income countries.¹ We support the group's recommendations, but are concerned that a key group of risk factors for NCDs is still being overlooked: sleep disorders.

Sleep disorders such as sleep apnoea, insomnia, and short sleep duration have long been identified as risk factors for the development and exacerbation of NCDs and mental disorders,^{2,3,4} yet they are often ignored in discussions about achieving sustainable development goal 3.4. The World Health Organization (WHO)'s NCD Best Buys, for example, aims to prevent premature mortality from NCDs by encouraging the use of interventions that reduce tobacco consumption, unhealthy eating, physical inactivity, and alcohol consumption.⁵ There's no doubt that these well known risk factors for NCDs must be tackled, but sleep disorders are another risk factor that shouldn't be overlooked. A recent expansion of the WHO's NCD Best Buys list released earlier this year again failed to mention sleep disorders.⁶ Specialists are aware of their effects, but many policy and decision makers, as well as healthcare professionals and the public, don't recognise that they're risk factors.

Effects of sleep disorders

Sleep problems are a global epidemic. One international survey from 2008 estimated that the prevalence of sleeping problems was 56% in the United States, 31% in western Europe, and 23% in Japan.⁷ Another study published in 2012 found striking regional variation across Ghana, Tanzania, South Africa, India, Bangladesh, Vietnam, Indonesia, and Kenya, but an overall prevalence of 16.6% of severe to extreme sleep problems.⁸ Specific sleep disorders such as sleep apnoea affect more than 936 million people worldwide; insomnia has been found to affect up to 30% of adults.^{9,10} Despite this, it's estimated that only around one third to one half of people with sleep disorders seek help,^{7,11} perhaps rooted in a lack of awareness about the importance of treating sleep problems.¹²

In the past two decades, our understanding of the associations between sleep disorders and NCDs has grown.²⁻⁴ Researchers found that people with chronic insomnia lasting more than eight years had a 21% higher risk of hypertension and 51% increased risk of type 2 diabetes.^{13,14} Moderate to severe sleep apnoea is associated with a 63% greater risk of type 2 diabetes and 30% higher risk of hypertension.^{15,16} One systematic review found that the risk of developing type 2 diabetes associated with sleep disorders was comparable to traditional risk factors.³

Short sleep duration impairs people's quality of life and health.^{2,17} It increases people's risk of type 2 diabetes, hypertension, cardiovascular diseases, coronary heart diseases, obesity, and strokes.^{17,18} The reversal of sleep and wake times, common in shift and night work, can also increase the risk of NCDs and their exacerbation. Misalignment between the sleep-wake cycle and circadian timing system caused by this type of work schedule has been identified as a risk factor for breast, prostate, and colorectal cancer.^{2,19}

Despite their negative consequences, sleep disorders are often underdiagnosed and undertreated, increasing their burden.^{20,21} One study, for example, found that untreated severe sleep apnoea was associated with a 3.8 times higher risk of all cause mortality and 5.2 times higher risk of cardiovascular mortality.²¹

Spotlighting sleep disorders

Countries should prevent, diagnose, and treat sleep disorders in a timely and appropriate way to help reach sustainable development goal 3.4 by the rapidly approaching deadline of 2030. But this can only be achieved through comprehensive education of policy and decision makers, healthcare professionals, and citizens.

Healthcare professionals, particularly students of medicine, nursing, dentistry, physiotherapy, and psychology, must be educated about the signs and symptoms of the most prevalent sleep disorders, as well as basic screening methods and treatments. These efforts should be supported by equipping health facilities with the necessary tools for diagnosing sleep apnoea and providing continuous positive airway pressure machines and medications for those who require them. Diagnosis and treatment should be coordinated through well structured care pathways that follow best practice guidelines and

bridge the gap between primary and specialist care, while factoring in comorbidities such as obesity, diabetes, and depression.

The signs, symptoms, and preventive strategies for sleep disorders, including sleep hygiene behaviours, should be common knowledge among the general population. As is the case with vaccination information in many countries, sleep disorders should be included in the curriculum of primary and secondary schools. Media campaigns, sponsored by governments and in partnership with medical and civil society organisations, would help to raise public awareness, particularly on World Sleep Day.

For all these changes to occur, decision makers and policy makers must recognise the importance of sleep and its disorders. Relevant global and multilateral organisations should lead the way in making sleep part of our arsenal of tools to tackle NCDs. Policy briefs and guidelines from the NCD Alliance, International Diabetes Federation, World Heart Federation, and World Obesity Federation, among others, would go some way to highlighting the relationship between sleep disorders and NCDs. Finally, recommendations on sleep disorders from WHO, and its inclusion among the NCD Best Buys, could mean that sleep is finally leveraged as a way to reach the sustainable development goal target to reduce premature mortality from NCDs.

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