

# Stroke patients and their caregivers: an interdependent relationship crucial for stroke care

## *Pacientes com acidente vascular cerebral e seus cuidadores: uma relação de interdependência para o atendimento pós-hospitalar*

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Neurological disorders have a considerable influence on a significant portion of the global population, with ~43% being affected.<sup>1</sup> This burden is particularly pronounced in low- and middle-income countries (LMICs). Among the top ten conditions that resulted in the greatest nervous system disability-adjusted life years in 2021, stroke was the primary contributor in most regions across the world.<sup>1</sup> Moreover, it is crucial to acknowledge that the coronavirus disease 2019 (COVID-19) pandemic has brought to light an increase in the worldwide prevalence of risk factors for cardiovascular disease, which has hindered the progress made in reducing the burden of stroke and cardiovascular diseases.<sup>2</sup>

Brazil, as one of the largest LMICs, has seen an epidemiological shift toward a higher prevalence of noncommunicable diseases among its aging population. Recent observations reveal substantial improvements in the management of acute stroke patients in the country.<sup>3</sup> Despite these achievements, there are still socioeconomic disparities that hinder the ongoing support for stroke patients in their communities, particularly in post-hospital care and rehabilitation.<sup>4,5</sup>

To maintain the advantages gained in stroke care during the acute phase of stroke and reduce the stress experienced by stroke patients in their everyday lives, it is important to consider the preferences of both patients and healthcare providers by providing equal access to well-staffed, high-quality facilities that offer clear communication and appropriate information after hospitalization. Therefore, it is important to understand the severity of the disability faced by stroke survivors.

The occurrence of disability five years after a stroke depends on the severity of the stroke. Approximately 25% of individuals with minor strokes will have disabilities.

Conversely, ~50% of those who have had moderate strokes will have a disability. Furthermore, for those who have experienced a severe stroke, ~80% will have a disability. Additionally, it is estimated that around half of the survivors will be disabled ~10 years after the stroke.<sup>6,7</sup>

These statistics highlight the need for a healthcare system that offers equivalent levels of care for stroke patients with the aim of providing the highest possible quality of care to enable stroke survivors to resume their daily activities. This issue is further compounded in LMICs, where socioeconomic factors can impact the healthcare support that patients receive.<sup>8</sup>

Caregivers play a critical role in connecting healthcare professionals with stroke patients after they are released from hospitals, particularly in countries with significant socioeconomic differences and restricted access to healthcare. As a result, caregivers often assume primary responsibility for managing the patient's condition once they have been discharged from hospitals in countries with limited resources for providing post-acute stroke care. This is particularly true for patients who require similar rehabilitation care after discharge from the hospital.

Caregivers frequently encounter various barriers and obligations when attempting to offer post-discharge care to stroke survivors, which often leads to high levels of stress and risk of burnout. The psychological aspects experienced by caregivers ultimately affect their ability to provide care. Studies have shown that elevated levels of caregiver stress can have a detrimental effect on the recovery and successful rehabilitation of stroke patients.<sup>9</sup> Additionally, the reduced functional capacity of stroke patients can serve as an indicator for caregivers who are at risk of bearing high levels of burden.<sup>10</sup> Therefore, it is essential to support caregivers to

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improve their well-being, which will ultimately benefit stroke survivors' health and quality of life.

Caregivers for stroke patients are primarily family members, with spouses and women being the most frequent.<sup>11</sup> These individuals are at a higher risk of experiencing burnout and tend to have a greater chance of developing cardiovascular diseases.<sup>12</sup> Female caregivers, in particular, may be at an increased risk due to the substantial caregiving burden they face with their sick spouses.<sup>13</sup> Studies have shown that female caregivers have a higher prevalence of unknown or uncontrolled vascular risk factors compared with stroke patients.<sup>14</sup>

The majority of caregivers are family members, who may have a genetic predisposition to develop primary conditions such as hypertension, diabetes, and obesity, putting them at risk of stroke.<sup>15</sup> Research by Marques-Romero and colleagues found a higher prevalence of traditional stroke-risk factors in a sample of caregivers of stroke patients. Furthermore, the increased risk in caregivers appears to be unrelated to the level of familial relationship with the patient under their care.<sup>16</sup>

Further research is required to gain a deeper understanding of stroke risk and its impact on both stroke survivors and their caregivers. It is crucial to assess the significance of stress and depressive symptoms as risk factors<sup>17</sup> because not only caregivers for stroke survivors are at a higher risk for cardiovascular disease, but also caregivers who provide support for individuals with other neurological conditions, such as dementia.<sup>18</sup>

LMICs are often characterized by additional confounding factors regarding stroke care, such as ethnic and socioeconomic disparities, limited access to education, and healthcare systems. These complexities may have had an impact on the findings of Marques-Romero and colleagues' research.<sup>16,19</sup>

The potential usefulness of the stroke riskometer application in helping caregivers and stroke patients make lifestyle modifications should be considered in the future to improve stroke-risk awareness among caregivers, ultimately benefiting stroke survivors.<sup>20</sup>

#### Authors' Contributions

ARM: conceptualization, analysis, writing, and editing; LRB: review.

#### Conflict of Interest

There is no conflict of interest to declare.

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