Chapter 5
Addressing the Challenges to Accessibility and Research Gaps in Assistive Technology:
A Review of Contemporary Assistive Technology Solutions

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ABSTRACT

This paper will address the shortcomings of the research being done in the field of assistive technology and how the lack of access to such essential technology is an unfortunate general case as a result of a number of factors, including lack of funding and development, insufficient knowledge, poor economic means, and prevalent societal barriers. Education in this field also plays a major role in instilling in people an emphatic understanding of assistive technological solutions by giving them a scientific or rational backing, as opposed to the stereotype against them that impedes their active awareness efforts. With modern scientific and technological advancements, assistive technology has also progressed. Modern technology has developed new ways of addressing disabilities, both psychological and physical

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in nature, but access to them remains a distant affair altogether. Only developed countries have access to these advanced technologies, leaving low- and middle-income countries way behind.

1. INTRODUCTION

Assistive technology (AT) solutions refer to products or services that assist older people and those with disabilities to compensate for their functional difficulty or decline (Abdi, S. et al., 2021). The World Health Organization (WHO) defines assistive technology as an umbrella term covering the systems and services related to the delivery of assistive products and services. The devices developed under such technology assist people with debilitating mental health conditions and other non-communicable diseases and help them live a life of independence without having to rely on someone's aid, say a caregiver or relative. People with various disabilities utilize these technological solutions to function according to their needs, but their usage vastly depends on the nature of disabling conditions, the degree of acceptability by the user, and their adaptability to the technology. Acceptability refers to the differing perspectives of people towards these technologies according to societal standards, which are subject to variations, while adaptability is a reference to how a person understands, navigates, and gets used to the technology. These two are among the major challenges to accessibility to assistive technology, where accessibility also implies availability and awareness of such technologies as well as sufficient economic means. Although to meet these challenges to accessibility to assistive technology, various global and national assistance programs guided by the Sustainable Development Goals, besides charitable initiatives by NGOs, have been in practice for some years, their effectiveness is still far from being significant.

The last population census and National Sample Survey Organization estimates put the figure of disabled persons at about 21 million (around 2 percent of the population) at the beginning of the new millennium. However, the prevalence of disability is often underrecorded in low- and middle-iincome countries (Karki, J., et al., 2023). A World Bank report observed that this figure may be as high as about 55–90 million people (around 5-8 percent of the population). These estimates are on the rise due to population aging and the rapid spread of chronic diseases, as well as improvements in the methodologies used to measure disability. The WHO Global Report on AT (GReAT) observes that in some high-income countries, 90 percent of people have access to the AP they need; this comes down to only 3 percent in low-income countries. This huge gap includes a vast section of the vulnerable population, including people from rural areas, poorly educated individuals, and those who are socially and economically backward (Vasanthan, L., et al., 2023). These