Mobile Applications for Diabetes Self-Management: A Scoping Review of Functionalities, Usability, and Accessibility in Apps Available in Portuguese-Speaking Contexts K. M. S. Santos, M. S. G. Lima, M. C. S. C. Nanque, G. B. Santos, E. Fittipaldi, J. Fernandes. *Gerontechnology* 25(s)

Purpose Diabetes mellitus (DM) represents one of the fastest-growing chronic conditions worldwide and disproportionately affects older adults [1]. As populations age, long-term DM management increasingly relies on tools that can support self-care, reduce complications, and promote autonomy. Within the field of gerontechnology, mobile health (mHealth) technologies represent a promising yet underexplored avenue to support autonomy, self-care, and functional independence in aging populations [2]. However, the rapid expansion of diabetes apps has led to substantial variability in their quality, usability, and alignment with users' needs—particularly among older adults, who may face barriers related to accessibility, digital literacy, and multimorbidity [3]. This scoping review aimed to map and critically characterize mobile applications available in Portuguese-language app stores for diabetes self-management, with a specific focus on their functionalities, usability, and accessibility features relevant to older adults, as well as their alignment with gerontechnology-oriented principles of inclusive and age-friendly design. **Method** This review followed the Joanna Briggs Institute (JBI) methodological guidance for scoping reviews [4]. Using the PCC framework—Population (people with diabetes), Concept (mobile apps for self-management), and Context (apps available in the Google Play Store and Apple App Store)—we searched both platforms between December 2024 and September 2025. Terms related to "health," "diabetes mellitus," and "self-management" were used. Apps were screened independently by two reviewers, with a third consulted for disagreements. Inclusion criteria comprised apps in Portuguese with functionalities explicitly supporting diabetes self-management. Exclusion criteria included apps in other languages, paid access, recipe-only apps, games, apps targeting professionals, or those requiring prior account registration. Data extraction focused on features relevant to gerontechnology and age-friendly digital design, including domains of clinical and behavioral functionality (monitoring, medication management, communication, education and decision support, and nutrition), as well as usability and accessibility characteristics such as navigation simplicity, readability, and compatibility with assistive technologies. This analytical framework enabled the identification of strengths and gaps in the alignment of diabetes apps with the needs of aging populations. **Results and Discussion** A total of 373 apps were identified, of which 81 met the eligibility criteria and were fully analyzed . Demographic and clinical data collection features were common: 75% requested name and surname, 68.8% weight, 56.2% sex, and 50% height and birthdate. Clinical monitoring concentrated mainly on glycemia (75%), medication use (56.2%), and diabetes type (37.5%). The most prevalent functionalities included communication features (97.5%), educational content (93.7%), reminders for medication (87.5%), and decision-support tools (85%). Integration with monitoring devices (65%) and pedometers (67.5%) was also frequent, suggesting a trend toward multimodal tracking. In contrast, features related to usability and accessibility for older adults were less consistently implemented. Only 53.7% of the apps included accessibility-oriented elements such as adjustable text size, simplified navigation, or compatibility with screen readers. This imbalance highlights a critical gap between the availability of advanced self-management functionalities and the incorporation of age-friendly design principles, potentially limiting effective use by older adults and individuals with sensory, cognitive, or functional impairments.

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