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## INTRODUCTION

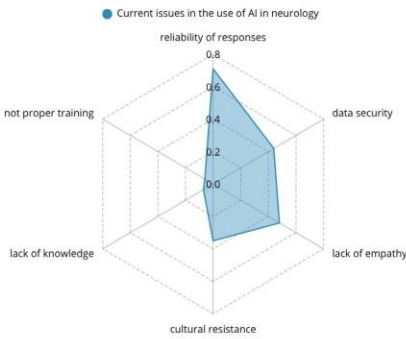
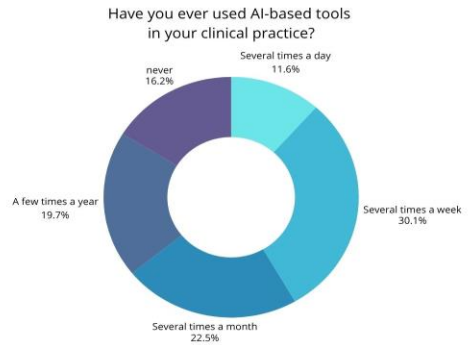
As Artificial Intelligence (AI) is rapidly becoming an integral tool in clinical neurology, residents will be expected to both understand and apply it in patient care. Our survey, addressed to Italian neurology residents, aims to assess familiarity with AI and to identify educational gaps during their residency training.

## RESULTS

At survey closure, 173 residents completed the survey, predominantly from Northern Italy (43.4%), with 37% affiliated with research hospitals. Although AI is already frequently used in practice, with 40.7% using AI tools at least on a weekly basis, only 30.7% rated their knowledge as at least "good." Paradoxically, most residents (79.2%) reported no curriculum-integrated AI education, which was significantly associated with geographical background ( $p < 0.001$ ), while nearly all the respondents expressed interest in further AI training (93.1%). The most familiar application was generative AI for clinical decision support (64.2%), and neuroimaging was rated as the most suitable area for AI integration (mean priority 2.99). Main barriers to AI application included concerns about reliability (71.1%) and data privacy/security (43.9%). Regarding future career impact, 41.6% of residents believed that AI will create new job opportunities, whereas the majority (89%) agreed that the AI revolution will not replace human professionals.

## MATERIALS AND METHODS

A cross-sectional, web-based survey was developed by the University of Milan and distributed nationwide to neurology residents from May 22 through July 30, 2025. The questionnaire included items on demographics, self-assessed AI knowledge, exposure to AI training, clinical applications, perceived challenges, and attitudes toward the impact of AI on neurology practice and career. Descriptive statistics and association analyses were performed.



## DISCUSSION

This survey provides an original and representative snapshot of AI knowledge, use, and attitudes among neurology residents in Italy. Although residents reported widespread use of AI tools in clinical settings, most had only basic knowledge and limited formal training, prompting calls for more structured and dedicated educational modules to be integrated into neurology residency programs.

