

# Assessment of the need and use of smart and new technologies in Parkinson's disease

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## INTRODUCTION

We live in an age characterized by many applications and technologies for health related to internet which monitor constantly the clinical parameters on own phone (Marceglia et al, 2015, 2017). To date, **PD is one of the diseases that most require this continuous control**. It is characterized by motor and non-motor symptoms that affect a gradual impact on the daily life (Marceglia et al., 2017). Disease's severity and progression are extremely variable and cause other complications, such as **needing individualized care (Cortez et al., 2014), more effectively managing at home, easier access to specialists (Ferreira et al, 2015) and reducing the management cost**. In front of this situation, technologies can make the different. However, what is the patients' knowledge about technologies for their disease?

**AIM.** Exploring the knowledge, the need and the use of smart and new technologies (SNT) as everyday assistive devices in parkinsonian patients in Italy.

**MATERIAL.** A **multiple-choice questionnaire** was specifically created to explore the knowledge, the need and the use of SNT in patients with Parkinson's Disease (PD). The questionnaire is **composed of 36 items, 16 about medical history and 20 concerning knowledge about and daily use of SNT**.

**METHODS.** To reach the largest number of patients, we used both **web-based and paper questionnaires** sent to several Italian PD Associations and to different hospital centres for PD. Patients or their caregiver, if the patient was unable to write, completed the questionnaire.

## RESULTS

**PARTICIPANTS.** 142 PD patients answered our questionnaire (90 males; aged > 31; 54,2% aged between 61-70 years old). They have the diagnosis of PD from 1 (35,2%) to more than 10 years (38%). 79,3% of the sample is retired. 52,8% of patients live in Lombardia, 9,9% in Campania, 9,2% in Trentino Alto Adige.

### SNT in daily life

A **general knowledge** emerged about common communication devices (30,3%).

**but their use is for general purposes and not specific for PD management**

**76.1 % internet, 66.2% smartphone, 76.1 % computer, 33.7% tablet**



### SNT and PD

**New technologies and PD devices are uncommon and poorly used**

**1,4% virtual reality, 14,8% videogames, 5,6% smart band**



**0% self-stabilizing spoon, 1.4% self-stabilizing pen, 7.7% cognitive training applications**



There was however, a widespread need in using technologies to communicate with the clinicians and to manage motor and non-motor symptoms in everyday life, provided that a unique application is installed on the device (81.7%).

**DISCUSSION.** Despite innovative researches, **technologies are still uncommon in the PD daily life in Italy**. Patients have a low awareness of the potential use of technologies for PD management. **However, patients have propensity to learn and use technologies in relation to the disease.**

**CONCLUSION.** The assessment of the relation between PD patients and technology must orient future research and promote useful interventions in this field. Specific educational programs for health staff, family and patients should be considered as important interventions for Parkinson's disease by the national health systems.

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