

Introduction

Parkinson's Disease (PD) is among the most common neurodegenerative diseases. PD is characterized by bradykinesia, tremor, rigidity and postural instability. Comorbidities such as mental disorders, autonomic dysfunction, difficulties in swallowing and speech, as well as sleep impairment, may occur during the course of the disease.¹

Care of PD patients consumes a considerable amount of health care resources and represents a significant economic burden on patients and their families.² In Spain, there are over 45 Parkinson Disease Associations (PDA) encompassed in the Spanish Parkinson Federation, which provide PD patients and their relatives a wide range of care services with partial and variable financial support from the government.

Objective

To estimate the costs associated to PDA's offered services and to calculate the potential savings that they represent to the National Health System (NHS).

Methods

- A survey conducted by the Spanish Federation of PDA collected information on location, number of members, type of services offered by PDA and use by patients of the offered services of each PDA. Services were classified according to whether or not they were potentially financed by the NHS, based on the existing national portfolio for reimbursed services.
- Weekly use was recorded and costs were calculated upon official rates³ (updated to €, 2014). Potential savings for the NHS were estimated by calculating the weekly costs associated to potentially financed services that were provided by the PDA.

Results

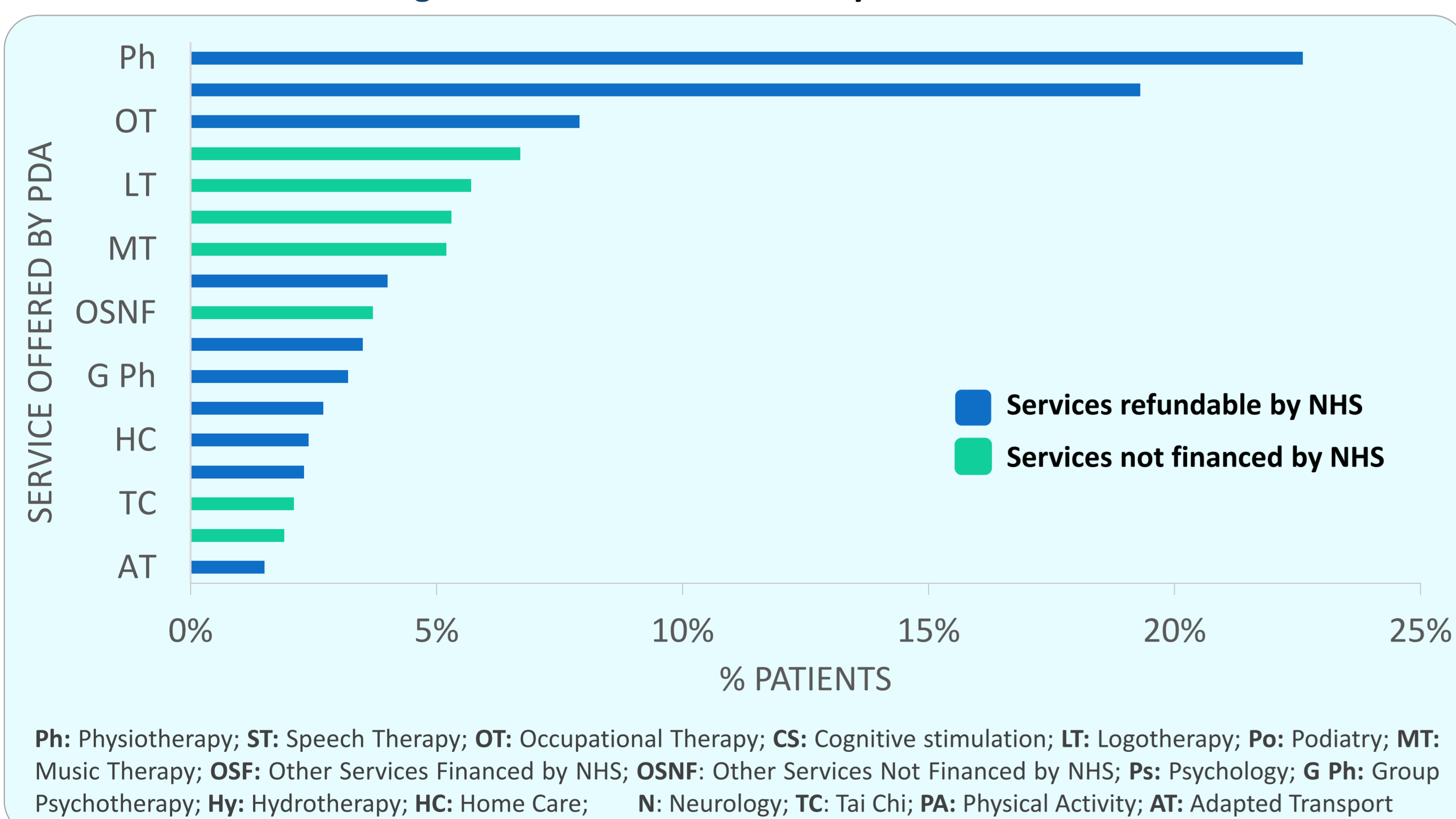
PDA and patients participants

- 42 Spanish PDAs that embraced a total of 11,420 patients participated in the study. After questionnaire reviews, one was excluded from the study, consequently, a total of **41 PDAs and 11,274 patients** were included in the analysis.

Use of services offered by PDA

- Among the 26 different services offered by PDAs, **speech therapy** (n=41 PDAs offered this service), **physiotherapy** (n=39), **cognitive stimulation** (n=23) and **occupational therapy** (n=23) were the **most frequently offered** services by PDA.
- A **53.8% of services provided** by PDAs were classified as potentially **refundable by the Spanish NHS**.
- The **22.6% and 19.3%** of PD patients attended to **physiotherapy and speech therapies**, being both of them the most commonly services used (Figure 1).

Figure 1. Patient distribution by services used.



Distribution of costs associated to services offered by PDA

- Total weekly costs** related to the services provided by the PDAs included in our study, were **€655,219.87**.
- Costs associated to potentially NHS financed services accounted 78.3% of total PDAs costs, representing potentially **cost savings to the Spanish NHS of €512,963.18/week**.
- Costs of **physiotherapy** (27.3%) and **adapted transport** (21.3%) were the main components of the total cost of potentially NHS financed services offered by PDAs (Figure 2, Table 1).
- Costs** attributable to PDA offered **services** which are **not usually financed** by the NHS accounted a 21.7% of total weekly cost, raising **€142,256.69/week**.
- Cognitive stimulation** costs represented the highest proportion of the weekly cost (63.4%) (Figure 3, Table 1).

Figure 2. Components of total cost associated to services offered by PDA potentially financed by the NHS.

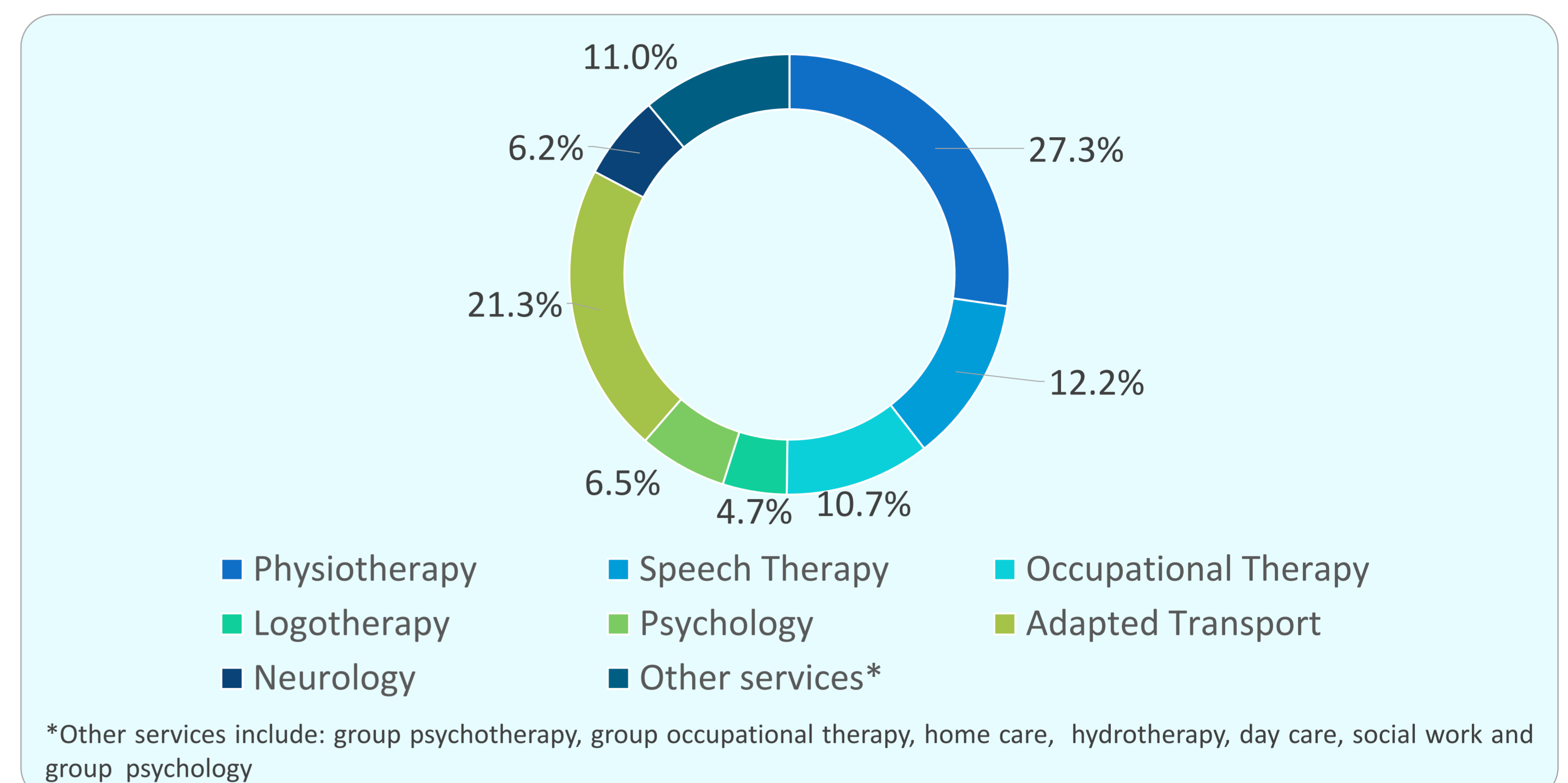


Figure 3. Components of the total cost associated to services offered by PDA not financed by the NHS.

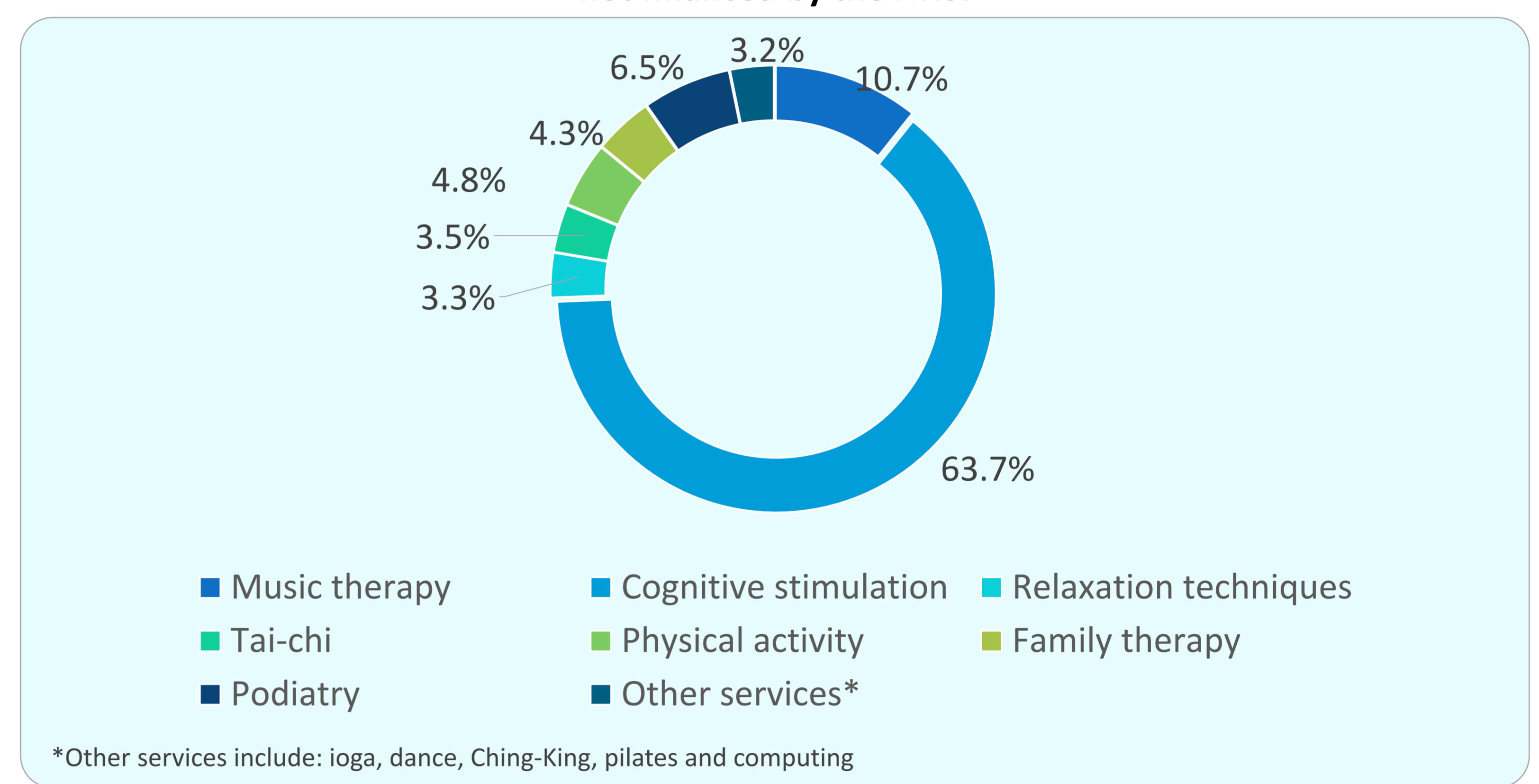


Table 1. Weekly cost attributable to PDA offered services.

Services refundable by NHS	Total Weekly cost (€/week)	Services not financed by NHS	Total Weekly cost (€/week)
Physiotherapy	€140,128.97	Music therapy	€15,195.00
Speech therapy	€62,541.76	Cognitive stimulation	€90,604.33
Occupational Therapy	€54,826.96	Relaxation techniques	€4,657.12
Logotherapy	€24,115.86	Tai-chi	€5,004.00
Psychology	€33,241.98	Physical activity	€6,842.00
Adapted Transport	€109,480.00	Family therapy	€6,142.69
Neurology	€31,984.80	Podiatry	€9,241.20
Other services	€56,642.85	Other services	€4,570.35
TOTAL COST	€512,963.18	TOTAL COST	€142,256.69

Weekly costs associated to services offered by each PDA

- Weekly mean costs per PDA were €15,980.97 (SD:22,662.98).**
- Weekly costs were heterogeneous among different PDAs**, ranging from €1,442.08/week (Castile and León) to €120,579.55/week (Castile-La Mancha). Differences were mainly due to the different number of PDA members and the diversity of services offered by each PDA.

Potential annual cost saving by NHS

- If we extrapolate the weekly cost of services offered by PDAs to annual costs it would rise to **€34,071,433.24**. Considering the cost attributable to services potentially financed by the NHS, **the potential annual cost saving for the Spanish health system may reach €26,676,000**.
- Besides this cost saving, a better disease control and an improvement of quality of life of these patients may contribute to potential savings of direct costs.

Conclusions

PDA offer valuable services to PD patients and carers and contribute to make the costs of the supportive and complementary care of the disease more affordable to society. Their economic efforts imply great savings to the Spanish NHS.

References

- Toulouse A et al. Progress in Parkinson's disease-where do we stand? Prog Neurobiol. 2008; 85(4):376-92.
- Von Campenhausen S, et al. Costs of illness and care in Parkinson's disease: an evaluation in six countries. Eur Neuropsychopharmacol 2011; 21(2):180-91.
- eSalud. Available at: <http://www.oblikue.com/bddcostes/>; Accessed: May, 2014.