OCCUPATIONAL BURNOUT AMONG PEDIATRIC NEUROLOGISTS IS ASSOCIATED WITH THERAPEUTIC INERTIA IN THE MANAGEMENT OF SPINAL MUSCULAR ATROPHY

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Gustavo Saposnik[1,2], Ana Camacho[3], Victoria Sánchez-Menéndez[4], Paola Díaz-Abós[4], María Brañas-Pampillon[4], Rosana Cabello-Moruno[4], María Terzaghi[1], Jorge Maurino[4], Ignacio Málaga[5]

[1]Clinical Outcomes & Decision Neuroscience Unit, Li Ka Shing Institute, University of Toronto, Canada; [2]Division of Neurology, Department of Medicine, St. Michael's Hospital, University of Toronto, Canada; [3]Division of Child Neurology, Hospital Universitario 12 de Octubre, Madrid, Spain; [4]Medical Department, Roche Farma, Madrid, Spain; [5]Child Neurology Unit, Hospital Universitario Central de Asturias, Oviedo, Spain

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INTRODUCTION

- Spinal Muscular Atrophy (SMA) is a neuromuscular disease leading to progressive muscle weakness atrophy and which causing a wide range of clinical symptoms including respiratory, nutritional, orthopedic, rehabilitative, emotional, and social disorders.
- New treatment options have improved and stabilised the symptoms of SMA increasing life expectancy.
- Limited information is available about how occupational burnout affects pediatric neurologists and what impact it has on their therapeutic decisions made in patients with SMA.
- The purpose of this analysis is to assess the presence of occupational burnout in pediatric neurologists and its influence on treatment decisions in SMA care.

METHODS

- We conducted a multicenter, non-interventional, cross-sectional, web-based study.
- Pediatric neurologists, with or without specialization in neuromuscular disorders and involved in the care of patients with SMA, completed a survey with demographic and professional characteristics and questions related with their risk preferences and management of eleven simulated case scenarios mimicking the standard clinical practices in types I-II SMA.
- Participants were also evaluated with a behavioral battery including the Maslach Burnout Inventory - Human Services Survey (MBI-HSS).
- The primary outcome was therapeutic inertia (TI), defined as the number of simulated scenarios with lack of treatment initiation or escalation when warranted over the total presented cases (TI score).
- A multivariable logistic regression analysis was conducted to determine the association between participants' characteristics and treatment preferences.

RESULTS

- Of all pediatric neurologists invited to participate in the study, 35 completed the study, which main characteristics of population are described in **Table 1**.

Table 1. Main characteristics of studied population (N=35)

General Characteristics	N=35
Age, mean (SD)	40.6 (9.6)
Sex, female, n (%)	22 (62.9)
Years of experience, mean (SD)	11.5 (9.1)
Years of experience managing SMA, mean (SD)	8.9 (7.9)
SMA patients managed per week, mean (SD)	1.5 (2.2)
Specialist in Neuromuscular diseases, n (%)	14 (40.0)
Practice setting, MSA center, n (%)	12 (34.3)
Participation in MS clinical trials, n (%)	11 (31.4)
Authorship of scientific manuscripts in peer-reviewed journals/ congresses, n (%)	16 (45.7)
Behavioural Characteristics	
Physician's tolerance to uncertainty score, mean (SD)	9.7 (4.6)
Participants with low tolerance to uncertainty, n (%)	10 (28.6)
Aversion to ambiguity score, mean (SD)	0.6 (0.3)
Participants with ambiguity aversion, n (%)	20 (57.1)

SMA = Spinal muscular atrophy, SD = Standard deviation

Therapeutic Inertia and Associated Factors

- Of 385 individual responses achieved after therapeutic choices did for each of the 11 simulated case scenario by participants, Therapeutic Inertia (TI) was observed in 147 (38.2%) of them.
- The mean (SD) TI score was 4.2 (1.7), whereas the TI scores for not initiating treatment when there was evidence of disease progression were 3.29 (1.5), respectively.
- Participants' older age (p=0.019), lower years of experience (p=0.035), lower aversion to ambiguity (p=0.015) and lower expectation to treatment benefits (p=0.006) were associated with inertia in treatment initiation.

Table 2. Outcome Measures (N= 35)

Variables	TI score*			Treatment Initiation†		
	OR	95% CI	p-value	OR	95% CI	p-value
Age ≥40, years	1.53	-0.51, 3.11	0.057	1.78	0.31, 3.25	**0.019**
Years of experience	-0.077	-0.16, 0.008	0.073	-0.085	-0.16, -0.007	**0.035**
Ambiguity score	-0.44	-0.83, -0.049	0.029	-0.46	-0.82, -0.098	**0.015**
Overall expectation with treatments	-0.049	-0.084, -0.013	0.009	-0.048	-0.081, -0.015	**0.006**

CI = Confidence interval, OR = Odds ratio, TI = Therapeutic inertia. *Derived from linear regression analysis adjusted for all presented variables. †Derived from logistic regression analysis adjusted for all presented variables.

Occupational Burnout and Association with Therapeutic Inertia

- 11 (31.4%) pediatric neurologists registered burnout, 8 (22.8%) of them reported clearly symptoms of burnout while the remaining 3 (8.5%) reported current burnout symptoms experienced together with frustration at work.
- TI scores (mean, [SD]) were higher among participants with burnout compared to their counterpart (4.0 [0.36] vs. 2.96 [0.32], respectively; p=0.05).
- The multivariable analysis showed that burnout was associated with higher TI scores (β coefficient 1.24, 95%CI 0.12-2.4; p=0.03) after adjustment for age and years of professional experience.

CONCLUSIONS

- Low aversion to ambiguity, low perception of treatments´ benefits and lower clinical experience were associated with suboptimal decisions, resulting in inertia in treatment initiation.
- Those pediatric neurologists who experienced burnout are more likely to experience therapeutic inertia managing patients with SMA, usually associated with older age and more years of experience.
- Identifying burnout may be critical for implementing specific intervention strategies to maintain an optimal disease control.

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