Abuse in Individuals with Multiple Sclerosis: The SocialMS Italian Study

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INTRODUCTION

Abuse is a social determinant of health (SDH) which consists in behaviors used to gain or maintain power and control, including physical, sexual, financial, emotional or psychological actions [1]. In general, individuals with disabilities are at higher risk of abuse; and diseases like Multiple Sclerosis (MS) can cause both physical and cognitive disability [2,3]. However, no studies have explored abuse prevalence and risk factors in Italian individuals with MS [4].

AIMS

To estimate the prevalence of abuse in individuals with MS in Italy exploring a wide range of other SDH.

METHODS

The SocialMS is a cross-sectional observational study based on anonymous surveys submitted to patients followed up in 67 MS centers. Disability was self-assessed by the Patient Determined Disease Steps (PDDS) scale. Descriptive statistics, parametric and non-parametric tests and cluster analysis were performed; Gradient Boosting Machine (GBM) was used as an exploratory screening and logistic regression models were performed to quantify the impact of MS itself on increased risk of abuse.

RESULTS

We included 1,004 patients (mean (sd) age: 44.1 (11.6), 68.8% females, median (IQR) PDDS: 1.0 (0.0, 3.0)). A total of 235 individuals (23.4%) were victim of at least one form of abuse over the course of life: emotional or psychological (n=203, 20.2%, mainly in the workplace, in the relationship with the partner and within family), physical (n=56, 5.6%, mainly in the relationship with the partner and within family), financial (n=42, 4.2%, mainly in the relationship with the partner and in the workplace) and sexual (n=25, 2.5%, mainly in the relationship with the partner, within family and in other contexts) (Figure 1). Victims of abuse were younger ($p<0.001$), lived alone ($p=0.001$), were smokers ($p=0.018$), with higher BMI ($p<0.001$) and comorbidities ($p=0.036$), younger at diagnosis ($p=0.001$) and more disabled ($p=0.029$). Abuse was more frequent in individuals who were females ($p=0.048$), non-heterosexual ($p<0.001$), with lower literacy ($p=0.001$) and with financial difficulties ($p<0.001$) but victims of abuse received more tangible support ($p=0.004$). Geographical area (South and Center vs North), lower literacy or educational level and financial difficulties had a stronger impact on financial abuse compared to other forms. According to GBM, the characteristics with higher relative influence in characterizing the risk of any form of abuse were household income, BMI, age and age at diagnosis, personal income, living alone or only with children, sexual orientation and health literacy. A total of 539 individuals (54%) believed that MS itself could increase the risk of any forms of abuse, of whom 29 for per-

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sonal experience, and factors associated in univariable analysis were progressive phenotype (OR=1.69 (95%CI=1.16; 2.46)), longer disease duration (OR=1.02 (1.00; 1.03)), number of treatments (OR=1.11 (1.00; 1.23)) and greater PDDS (1.19 (1.11; 1.27)). However, PDDS was the only factor which was statistically significant in the multivariable model (OR=1.18 (1.09; 1.27)). Cluster analysis identified two subgroups of participants: in cluster 2 (n=157) all patients were victims of at least one form of abuse and experienced a greater number of forms of abuse compared to cluster 1 (median(IQR): 1.0 [1.0, 2.0] vs 0.0 [0.0, 0.0], p<0.001) and all the forms of abuse were more common (emotional or psychological abuse: 99.4% vs 5.5%; sexual abuse: 12.7% vs 0.6%; physical abuse: 23.6% vs 2.2%; financial abuse: 13.4% vs 2.5%, p<0.001). Moreover, 68.8% of participants in cluster 2 perceived the potential impact of MS itself on the increased risk of abuse, of whom 13.4% for personal experience.

CONCLUSION

We characterized abuse phenotypes from clustering, we conducted robust identification of independent predictors from high-dimensional ML-based screening of predictors, and we observed the impact of MS disability on risk of abuse. Findings show the necessity of 1) identifying actionable targeted interventions to address modifiable SDH and to support victims of abuse (e.g., training of health-care providers, social and psychological services) , 2) treating the Person with MS, not only MS, 3) increasing the awareness among the healthcare practitioners and the general population that preventing MS-related disability can also have an impact on many hidden aspects of patients' lives. This work emphasizes the ethical and social importance of protecting the most vulnerable individuals.

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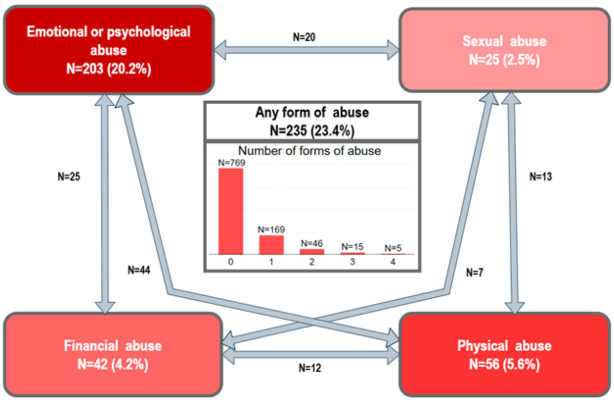
Figure 1. Prevalence of abuse in a sample of 1,004 individuals with multiple sclerosis in Italy. Arrows show numbers of individuals reporting more forms of abuse



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