

# Assessing care-related regret among nurses specialized in multiple sclerosis: A psychometric analysis of a new assessment battery

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## Abstract

Experiences of regret associated with caring for patients with multiple sclerosis (MS) can affect medical decisions. A non-interventional study was conducted to assess the dimensionality and item characteristics of a battery including the Regret Intensity Scale (RIS-10) and 15 items evaluating common situations experienced by nurses in MS care. A total of 97 nurses were included. The RIS-10 showed good internal reliability and a unidimensional structure according to Mokken analysis. All-item homogeneity coefficients exceeded 0.30, whereas scalability for the overall RIS-10 was 0.66, indicating a strong scale. This battery showed adequate psychometric properties to evaluate regret among MS nurses.

**Keywords:** Multiple sclerosis, regret, nurses, psychometric methods

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## Introduction

Different cognitive and emotional biases can influence the efficacy of healthcare decisions.<sup>1</sup> Regret is a negative emotion experienced when one believes that the current situation would have had a better outcome by choosing a different course of action.<sup>2</sup> The experience of regret in the context of patient care is a common phenomenon that may lead to sub-optimal medical decisions and negative health consequences for physicians and nurses.<sup>2–4</sup> Back pain, sleep problems, poor quality of life, low job satisfaction, absenteeism, and high staff turnover have been reported among nurses experiencing care-related regret.<sup>2</sup> The current multiple sclerosis (MS) management landscape is a common ground for the emergence of regretful experiences due to the uncertain disease trajectory and different treatment options with complicated safety risk profiles.<sup>2,5,6</sup>

Courvoisier et al. designed the Regret Intensity Scale (RIS-10), a 10-item self-report questionnaire to assess the affective, physical and cognitive intensity of the experience of regret among healthcare professionals.<sup>7</sup> However, there are no specific tools to assess the

impact of care-related regret in MS. The aim of this study was to evaluate the psychometric properties of an assessment battery to measure regret related to management decisions among nurses specialized in MS.

## Methods

This was an online, non-interventional, cross-sectional study in collaboration with the Spanish Society of Neurology Nursing (SEDENE). All members received an email with an invitation to participate in the study. Key eligibility criteria included nurses actively involved in MS care. The study was approved by the institutional review board of the Hospital Clínico San Carlos (Madrid, Spain). All participants provided written informed consent and were recruited from December 21, 2020, to April 16, 2021.

## Outcome measures

Regret was assessed through the combination of the RIS-10 and 15 items designed by the research team and reviewed by a panel of seven MS nurses. The rationale underlying the development of this regret battery has been published elsewhere.<sup>2</sup>

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**Table 1.** RIS-10 item scores and scalability coefficients.

Item	Median score (IQR)	Scalability (SE)
1. Emotions come back to me	3 (2, 4)	0.57 (0.07)
2. I feel uncomfortable	2 (1, 3)	0.71 (0.04)
3. I feel devalued	2 (1, 3)	0.66 (0.06)
4. I feel ashamed	2 (1, 2)	0.71 (0.04)
5. I have a knot in my stomach	2 (1, 3)	0.73 (0.04)
6. I feel anger rising in me	2 (1, 2)	0.64 (0.05)
7. I have trouble falling sleep	2 (1, 2)	0.67 (0.05)
8. I have trouble concentrating	1 (1, 2)	0.65 (0.06)
9. I am not really made for this work anymore	1 (1, 2)	0.63 (0.07)
10. I want to cry	1 (1, 2)	0.67 (0.06)
Overall RIS-10	1.9 (1.3, 2.6)	0.66 (0.04)

IQR: interquartile range; RIS-10: Regret Intensity Scale; SE: standard error.

Each RIS-10 item is assessed with a five-point Likert scale ranging from 1 (“not at all”) to 5 (“absolutely”).<sup>7</sup> Higher scores indicate greater intensity of regret. The first six additional items assess regret in different common social domains, including financial, driving, sports recreation, work, own health, and confidence in people.<sup>2</sup> The following eight items assess whether the participant has faced common situations experienced by MS nurses in clinical practice.<sup>2</sup> A final item assesses the presence of MS-related regret in the last three months.<sup>2</sup> Respondents must score on a scale from 0 (little affected) to 10 (very affected) the degree of regret experienced in the situation evoked by each item. If participants reported no regret, a mean intensity of 0 is imputed.

### Statistical analysis

The dimensional structure and item characteristics of the RIS-10 scale were assessed with a non-parametric item response theory procedure, Mokken analysis.<sup>8</sup> Each item was required to have a scalability coefficient (Hi)  $\geq 0.30$  and an overall scale scalability index (H)  $\geq 0.30$  to support its ability to rank people regarding the latent trait being measured (care-related regret).<sup>9</sup> Associations between the RIS-10 and the additional 15 items were analyzed using Spearman's rank correlations.

### Results

A total of 97 nurses were included. The mean age (SD) was 44.7 (9.8) years and 92% were female. Fifty (52.1%) nurses worked at MS care units. Participants had a mean of 7.4 (5.3) years of experience managing a median of 15 MS patients weekly (interquartile range 5.0–35.0).

The RIS-10 showed good internal reliability (Cronbach's alpha = 0.94, 95% CI 0.92–0.95). The automated item selection procedure of the Mokken analysis suggested a unidimensional structure with all items showing scalability  $> 0.30$ . The RIS-10 overall scalability was 0.66 resulting in a strong scale (Table 1). “*Having a knot in the stomach*” (#5), “*feeling ashamed*” (#4), and “*feeling uncomfortable*” (#2) were the items more strongly related to the construct of regret.

The RIS-10 overall score correlated significantly with the financial, driving, and confidence in people domains ( $\rho > 0.20$ ,  $p < 0.05$ ) (Table 2). “*Not being able to take a call/answer an email with a patient's question*” (#3), “*Not being able to discuss with a patient all the topics*” (#4), “*Answering with complete certainty even though I was not sure*” (#5), and “*Providing directions that may not have been the best*” (#6) were the MS regret experiences significantly correlated with overall RIS-10 score ( $\rho > 0.40$ ,  $p < 0.05$ ) (Table 2).

### Discussion

Nurses play an essential role in the care of MS patients, but are usually exposed to a high care burden that can lead to suboptimal therapeutic choices, regret, and burnout.<sup>2,4,10</sup> Identifying regret among nurses may be critical for implementing specific strategies to maintain an adequate functioning of MS care units.<sup>2</sup>

The assessment of regret has been carried out using qualitative and quantitative methods.<sup>2</sup> In our study, the internal consistency of the RIS-10 was good with a Cronbach's alpha similar to those of the French and German versions administered to physicians and nurses (0.94 in this study compared to

**Table 2.** Spearman's rank correlations between RIS-10 overall score and additional regret items.

Regret in social domains	Rho	p-value
Financial	0.23	0.026
Driving	0.24	0.017
Sports/recreation	0.20	0.046
Work	0.18	0.082
Own health	0.15	0.144
Confidence in people	0.31	0.002
Regret in MS care		
1. I identified a patient with an adverse event to a new treatment, but did not mention it to the neurologist	NA	NA
2. I was unable to convey to the neurologist that I had detected disease progression in one of our patients	NA	NA
3. I was unable to take a call/answer an email with a patient's question because I did not have enough time	0.45	<0.001
4. I did not discuss with a patient all the topics I would have liked to talk about	0.48	<0.001
5. The patient asked me about his/her illness and I answered with complete certainty even though I was not sure my answer was true	0.52	0.016
6. I provided some directions to a patient that as time has passed I have seen may not been the best in his/her particular case	0.56	<0.001
7. I had the chance to suggest a switch to a more effective treatment for a patient with the neurologist, but I failed to do so	NA	NA
8. I did not treat the patient as politely as I would have liked because I was worried about other things	0.15	0.474
9. Recent regret	0.22	0.413

MS: Multiple sclerosis; RIS-10: Regret Intensity Scale.

0.90 and 0.88, respectively).<sup>7,11</sup> It was also confirmed that it is a strong scale with a unidimensional structure. Overall, the 15 additional items showed appropriate concurrent relationship between their clinical elements, which allowed us to use this battery to evaluate healthcare regret experiences.

The RIS-10 was the first tool developed to assess the intensity of regret among health professionals, but it restricts the temporal context to the last five years.<sup>7</sup> Although many health professionals described episodes of intense regret dating back to their early years of practice or training, these experiences can occur at any time during professional activity.<sup>12</sup> Moreover, the intensity of the regret depended on the amount of time that had elapsed since the regret-causing event that was being asked about.<sup>12</sup> It is, therefore, necessary to supplement the RIS-10 with a specific short-term question or to follow up longitudinally with periodic questions.

This study has several limitations that deserve mention. First, this study was conducted through an email invitation sent by the Spanish Society of

Neurology Nursing. We recognize a possible selection bias, given that the people most motivated to collaborate or with a greater collaboration with this scientific society may have enrolled in the study. Second, the study is cross-sectional and might be affected by recall bias of regret experiences in the past. Since the professional experience of nurse practitioners in this study is large, potential recall bias might have possibly downgraded the importance of those past regret experiences and attenuated the associations between components of regret.

### Conclusions

Understanding MS nurses' experiences of regret using a standardized assessment battery may help to identify problems that impact on their own health and also facilitate appropriate decision-making in MS care. We propose an easy-to-implement battery with good psychometric properties that includes measures of nurses' past and recent regret in different domains. Further studies are needed to demonstrate its usefulness in other healthcare professionals involved in MS care.

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