## Predictors of Unemployment in Patients with NMO: Characterization of a Global Cohort

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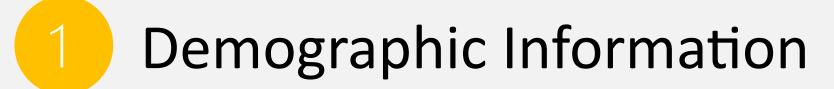
# Background & Objectives

- The symptoms and effects of NMO can greatly restrict a patient's employment opportunities, and directly impact their income source. Currently, there are few data for employment in NMO globally, particularly in middle- and low-income countries.
- This prospective global cohort aims to characterize potential sociodemographic and clinical predictors of unemployment in a global cohort of patients with NMO.

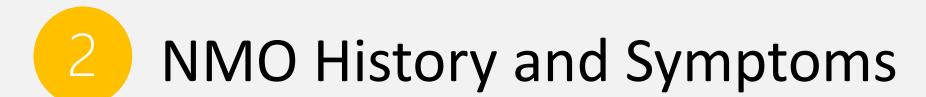
#### Methods

- Physicians at neurology centers in Egypt, Malaysia, Iran, Venezuela, Kuwait, Colombia, Mexico and Guinea administered a REDCap-based survey to patients who
  - 1) have been diagnosed with NMO by a clinician,
  - 2) are 18 to 70 years old, and
  - 3) are AQP4 antibody positive, MOG antibody positive or double seronegative.
- The survey is available in 5 languages, and includes questions about:
  - individual and household demographic information
  - NMO diagnosis
  - current symptoms
  - employment history
- Enrollment for this interim analysis occurred between July 18<sup>th</sup>, 2022, and February 1<sup>st</sup>, 2023.
- Analyses of de-identified data were performed using Python, Minitab, and MATLAB.
- A logistic regression model was developed to identify potential associations with unemployment.

#### Results



- 221 patients enrolled, 176 female, and 45 male.
- 49% identified as Hispanic or Latino, 41% as Asian, 32% as Middle Easter, 29% as Caucasian, and 2% as Black or African American.



- On average, patients were diagnosed with NMO at 34 years old, and had had 6.7 attacks since.
- 56.6% of patients were AQP4-positive,
  3.2% were MOG-positive, and 40.2% were double seronegative.
- 88% of patients reported being affected by fatigue or pain, and 61% experienced both.
- Fatigue was cited as the cause of reduced or interrupted work for 53%, while 52% of patients said pain was an impediment to their work.

## 4 Limitations

- Controls for patients without NMO must be incorporated to future models.
- Variables are often self-reported
- Data collection is ongoing in additional countries; the full cohort is not yet represented by these results.

## Logistic Regression Analysis

**Table 1:** Logistic regression analysis of variables associated with employment pre- and post-NMO diagnosis

Outcome	Predictors	Logistic Regression Analysis	
		Odds ratio	<i>p</i> -value
Employed pre-diagnosis	Sex	0.664	0.739
	Age	0.355	0.234
	$\geq$ 12 yrs formal education	0.614	0.024*
Employed post-diagnosis	Sex	0.323	$0.045^{*}$
	Age	0.378	0.094
	Fatigue frequency	0.338	0.045*
	Pain	0.362	0.085
	Visual loss	0.472	0.739
	Spinal cord disease	0.600	0.234
	$\geq 12$ yrs formal education	0.817	0.024*

<sup>\*</sup>  $p \le 0.05$ 

- Patients experiencing fatigue frequency above the median (2 or "Sometimes") were 55% less likely to be employed (p = .045).
- Post-NMO diagnosis, women were 68% less likely to be employed than men (p = .045).
- Patients with over 12 years of formal education (High School and above) were 4 times more likely to be employed post-diagnosis than patients with less than a High School education.

### Conclusions

Female gender, less than a High School education, and higher fatigue frequency were found to be associated with unemployment in patients with NMO.

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