

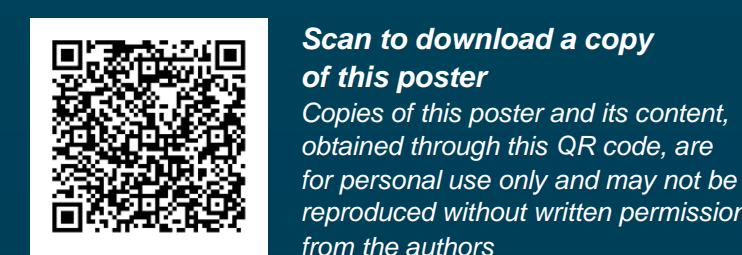
Wearing-Off Effect Toward the End of Treatment Cycles in Patients With MS Receiving High-Efficacy Disease-Modifying Therapies: Data From Social Media Listening

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SUMMARY

- This exploratory study of social media conversations investigated how various stakeholders describe the symptoms, timing, coping strategies, and impact on patients' daily lives associated with wearing-off effect (WOE) while being treated with various DMTs
- Mention of WOE by patients receiving DMTs was common, as were reports of WOE-related symptoms impacting patients' daily lives; switching to other DMTs was the most mentioned coping mechanism
- Further research is required to understand the impact of WOE on PlwMS and the potential gap between HCP and patient perceptions/awareness of WOE

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INTRODUCTION

- Symptoms such as fatigue, mobility issues, and physical pain toward the end of treatment cycles, generally referred to as wearing-off effect (WOE), have been evaluated in the literature for patients living with multiple sclerosis (PlwMS) receiving infusible disease-modifying therapies (DMTs)^{1,2}
- Although studies using clinical and patient-reported outcome measures indicate that WOE may not impact disease outcomes,³⁻⁶ patients on social media have reported an impact of WOE on their daily lives

OBJECTIVE

- To explore how various stakeholders (PlwMS, caregivers, health care practitioners [HCPs], advocacy groups) describe the symptoms, timing, coping strategies, and impact on patients' daily lives associated with WOE while being treated with various DMTs (natalizumab, ocrelizumab, ofatumumab, rituximab)

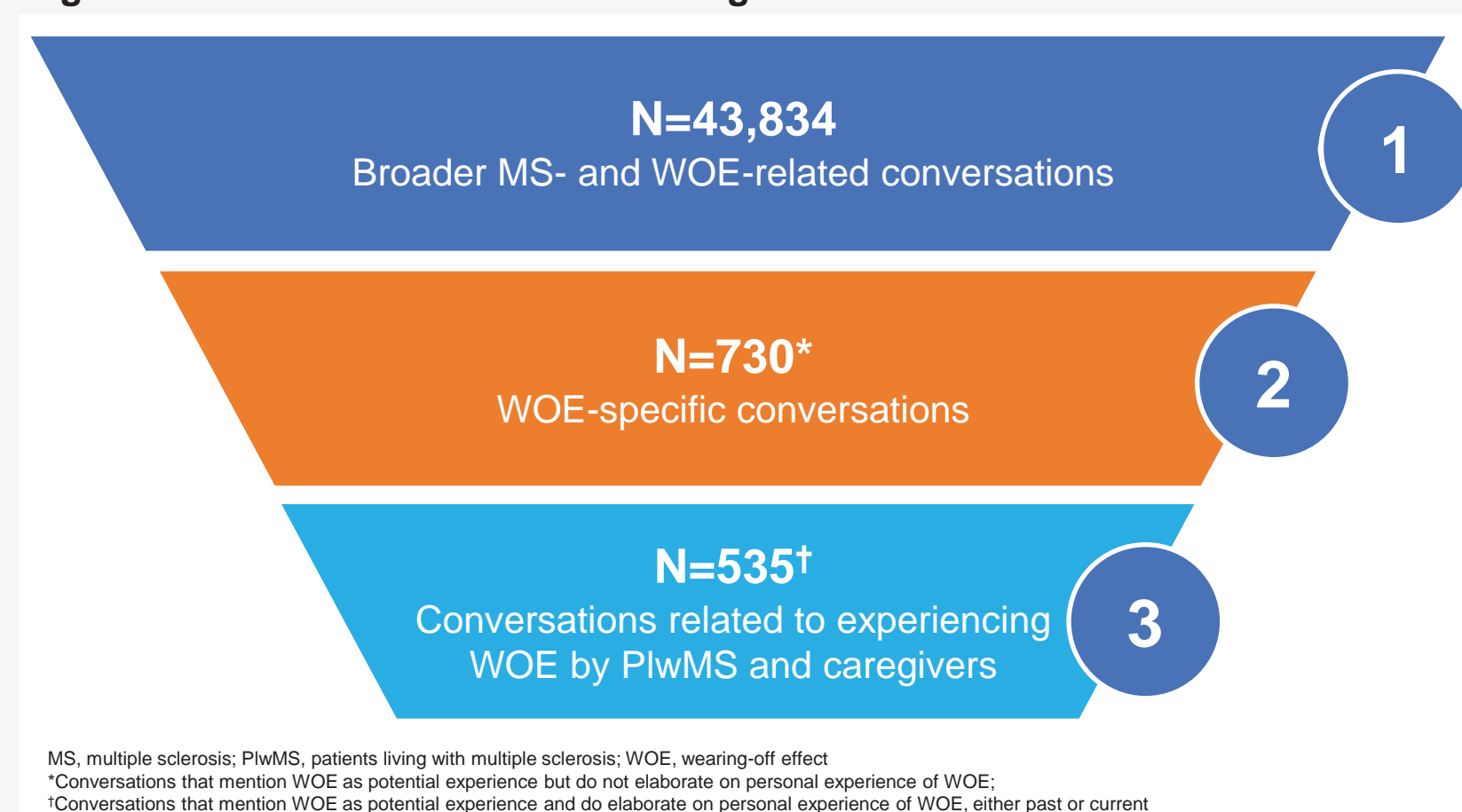
METHODS

- Publicly available conversations related to WOE on social media, including Reddit, Twitter, blogs, and forums, were retrospectively reviewed
 - A combination of the following was used: Brandwatch to locate and aggregate data, in-house analysis tools to categorize and filter data, and manual review of each of these conversations by experienced health care analysts to identify trends and outliers
- WOE-specific conversations in English and posted between February 1, 2020 and February 16, 2022, authored by stakeholders, including PlwMS, caregivers, HCPs, and advocacy groups, were analyzed
 - These conversations were collected and categorized based on the author's self-identification within the post content or within public social media biographies
- A specific search term-based funneling methodology was used to identify the conversations related to WOE. Search methodology involved collecting a wide range of posts that mention disease terms (eg, "MS," "multiple sclerosis") and also mention WOE or symptom-related terms (eg, "tired," "worsening")
- All data were presented descriptively and no statistical analysis was performed

RESULTS

- Overall, 43,834 conversations related to broader MS and WOE were identified (Figure 1)
 - Of these, 730 conversations were WOE specific* and 725 were authored by PlwMS or caregivers
 - Of the 730 conversations, 535 were specifically related to experiencing WOE†

Figure 1. Data From the Social Listening



WOE-ASSOCIATED TREATMENTS

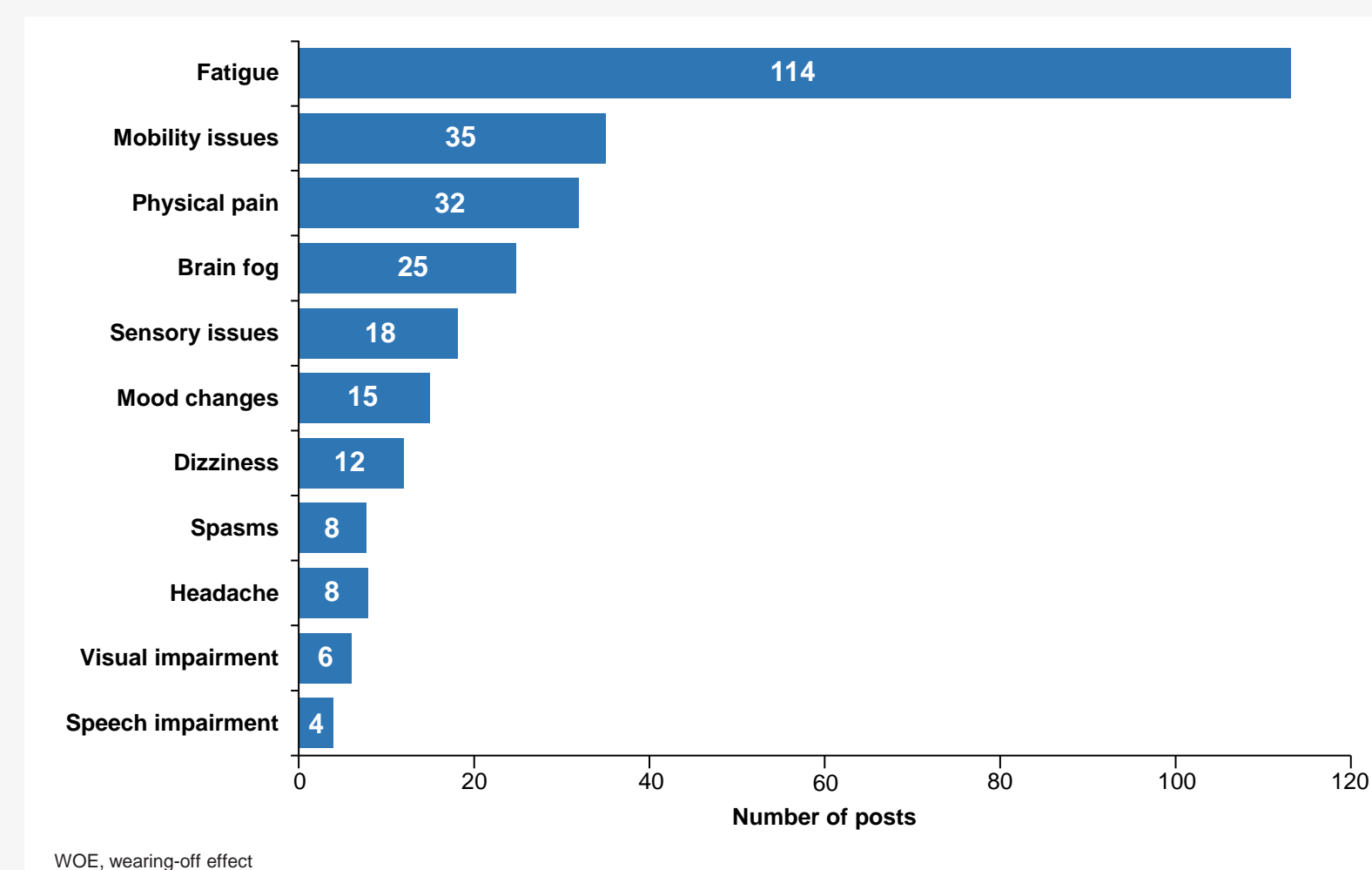
- Of the 535 conversations authored by caregivers and PlwMS experiencing WOE, 343 (64%) conversations mentioned ≥1 treatment used by the patient while experiencing WOE; 192 (36%) posts referred to unidentified treatments
 - Within the 343 conversations, there were a total of 371 treatment mentions; commonly mentioned treatments were ocrelizumab, followed by natalizumab (data may be influenced by the number of patients using a specific DMT)

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WOE-ASSOCIATED SYMPTOMS

- Overall, 277/535 (52%) conversations mentioned WOE-associated symptoms. Fatigue was the most mentioned symptom, followed by mobility issues and physical pain (Figure 2)
- Fatigue was also the number one-reported symptom across treatments

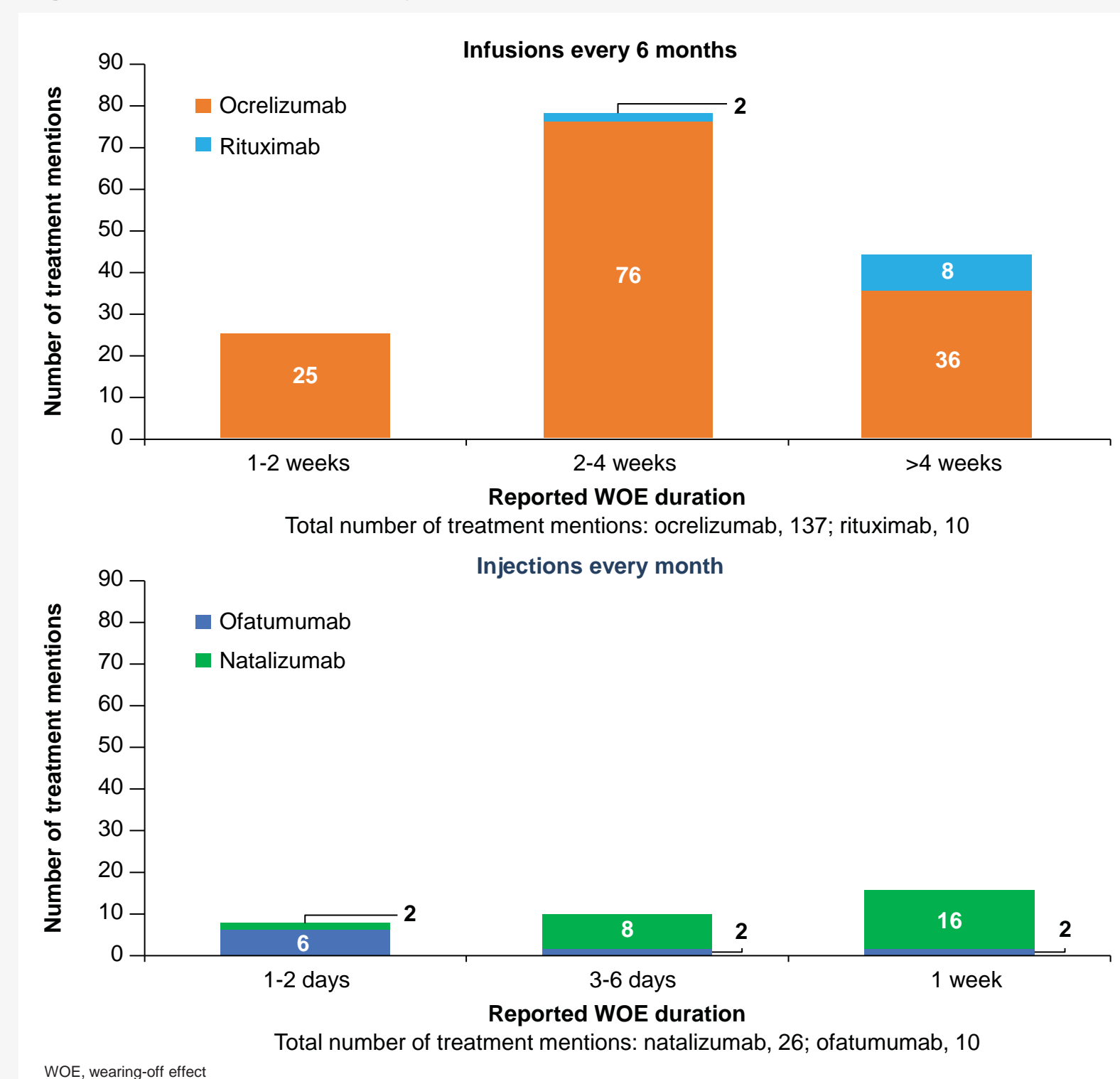
Figure 2. WOE-Associated Symptoms by Treatment



WOE-ASSOCIATED DURATIONS

- Caregivers and PlwMS experiencing WOE and specifying their treatment reported a wide variety of WOE durations (Figure 3)

Figure 3. WOE Durations by Treatment



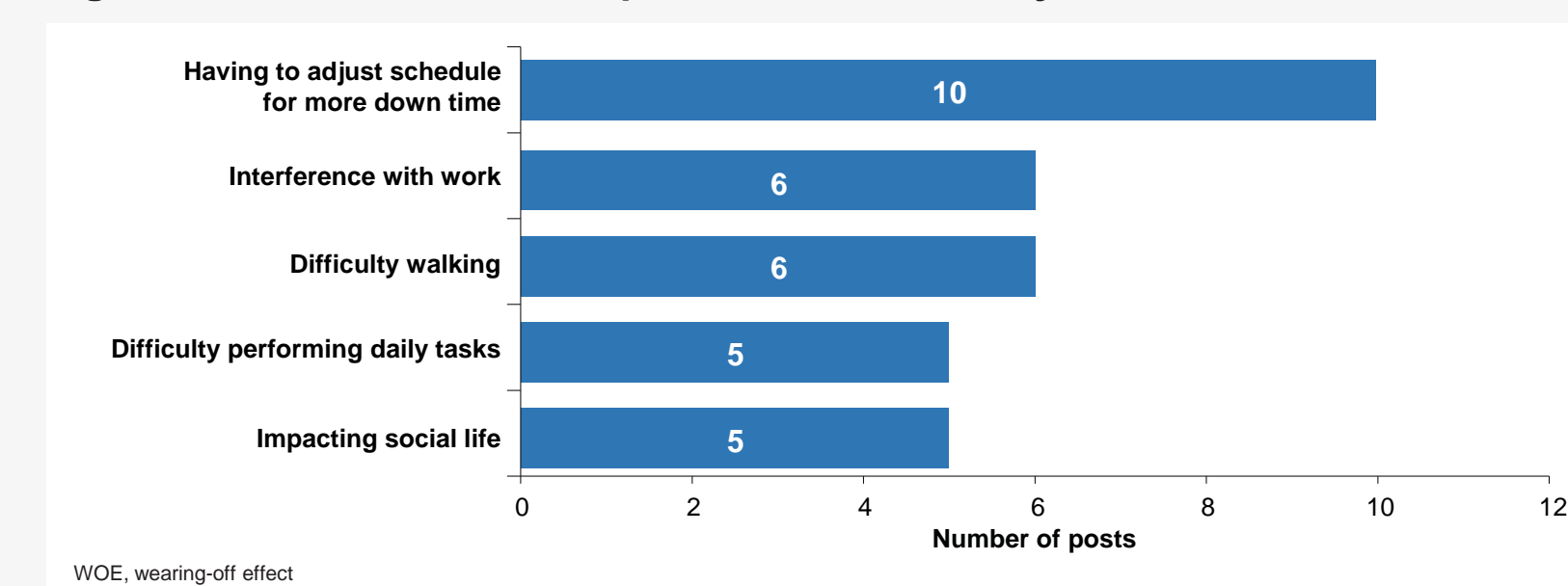
- WOE duration was mentioned a total of 183 times within 172 posts
 - Among 6-month interval DMTs, the most commonly mentioned durations were 2 to 4 weeks for ocrelizumab and over a month for rituximab
 - Of the monthly injection interval DMTs, commonly mentioned duration were 1 week for natalizumab and 1 to 2 days for ofatumumab

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IMPACT OF WOE ON PATIENTS' DAILY LIVES

- Of the 343 conversations authored by PlwMS and caregivers experiencing WOE and specifying their treatment, 32 (9%) conversations mentioned a negative impact on the daily lives of patients, such as need for more down time, interference with work, and difficulty in walking (Figure 4)

Figure 4. WOE-Associated Impact on Patients' Daily Life Activities



WOE: CONVERSATION THEMES AND COPING MECHANISM

- Of the 343 conversations authored by caregivers and PlwMS experiencing WOE and specifying their treatment, conversations revolved around solutions to resolve WOE (Figure 5), as well as support and information exchange (Figure 6)
 - Mostly, patients on infusions every 6 months discussed solutions to resolve WOE more often than patients with monthly treatment
 - Of the conversation that revolved around solutions to resolve WOE (n=83), switching to another DMT was the coping mechanism most mentioned by patients, followed by reducing intervals between infusions

Figure 5. WOE Conversation Themes: Solution Oriented

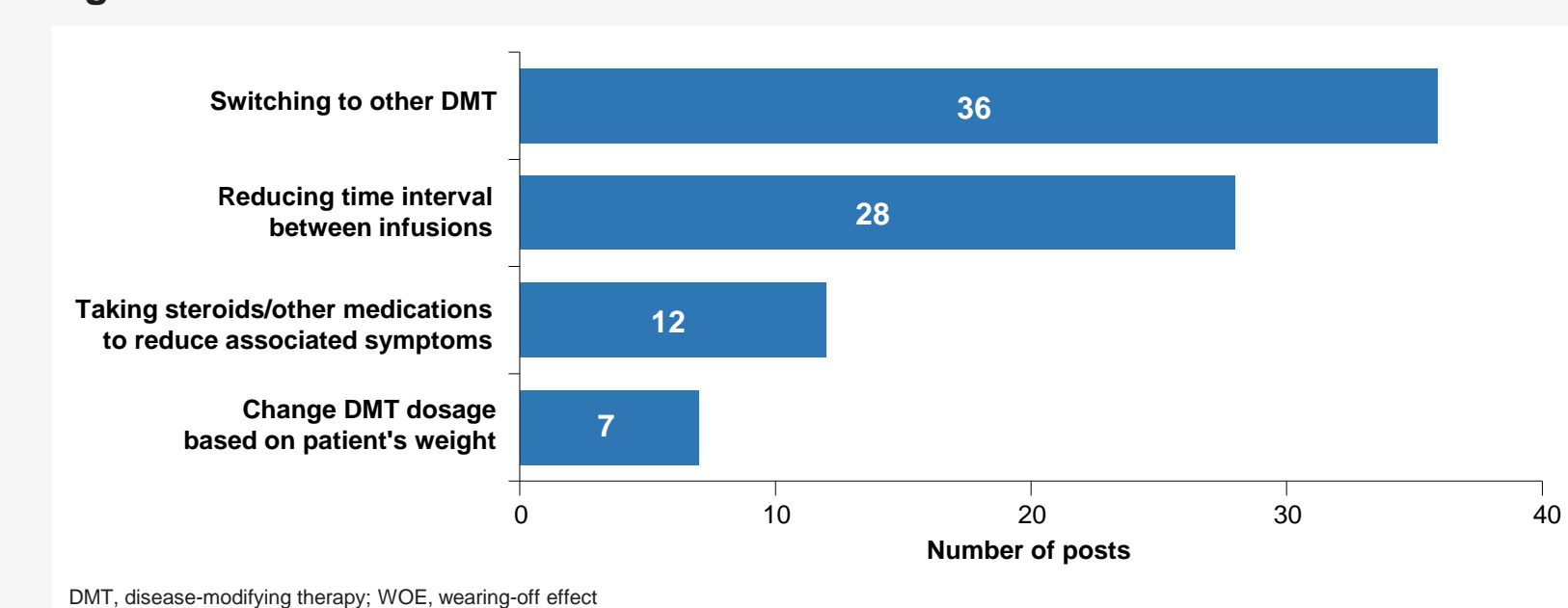
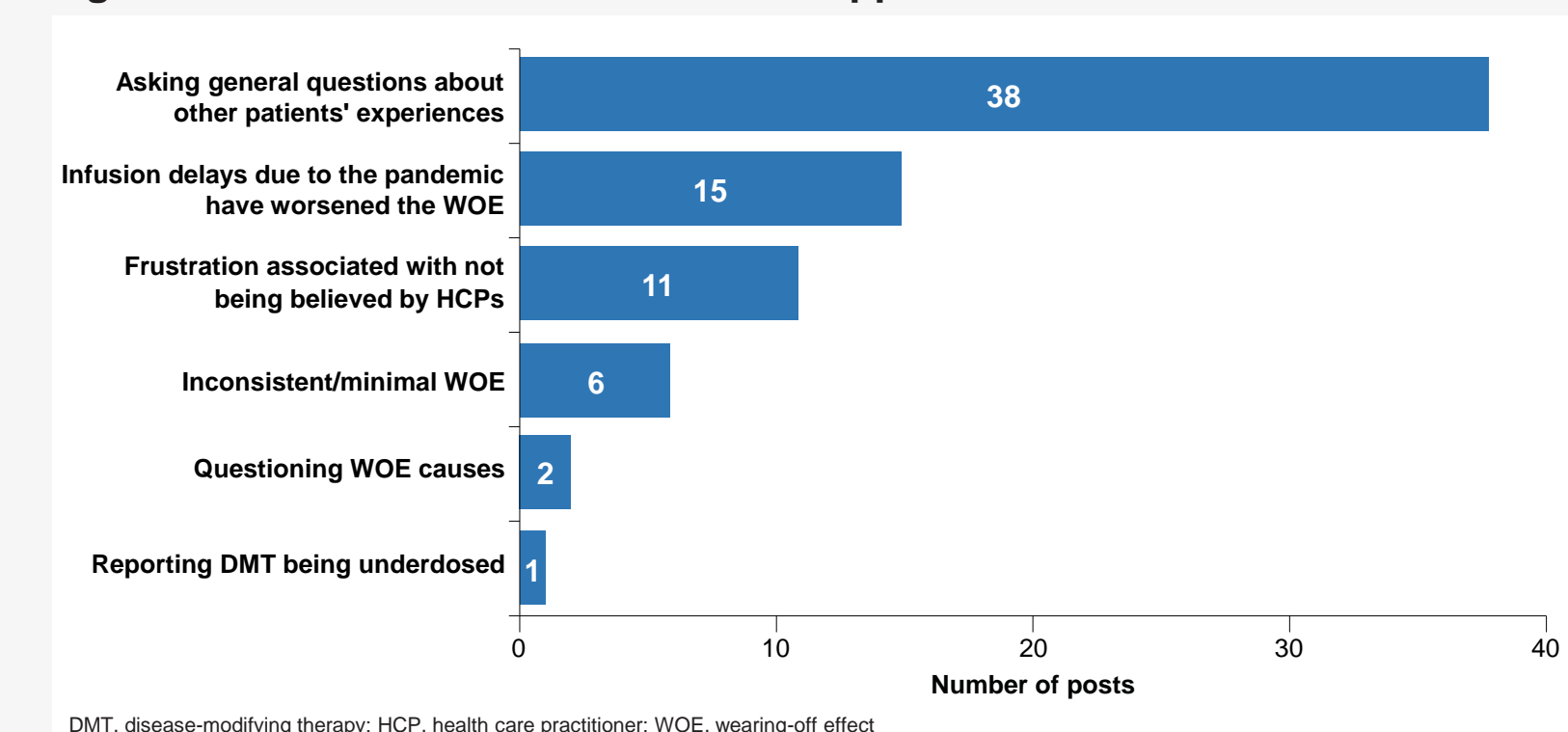


Figure 6. WOE Conversation Themes: Support-Based Conversations



LIMITATIONS

- Limitations of social media listening include susceptibility to misinformation, potential for bias (certain types of patients may be more motivated to interact on social media than others), relative lack of socioeconomic and demographic information, and a risk of duplication of data among the population⁷
- Data presented for various DMTs may be influenced by differing durations of DMTs in the market and number of patients using a specific therapy

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