The Impact of Acute Hepatic Porphyria on Mental Health: Results from the POrphyria Worldwide Patient Experience Research (POWER) Study

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Conclusions

- Patients with AHP, regardless of attack rate, prophylactic treatment with hemin or glucose, or duration of active disease, experience a high mental health burden on their personal and social life
- This study suggests that approximately half of patients with AHP experience moderate-to-severe anxiety or depression, which is much greater than the rate in the general population
- These results highlight the importance of mental health evaluation and care as part of disease management for AHP

Introduction

- Acute hepatic porphyria (AHP) is a group of rare genetic diseases of heme biosynthesis characterized by potentially life-threatening attacks, most frequently presenting with abdominal pain[1]
- AHP is also associated with psychiatric symptoms, including depression and anxiety
- Using the Medical Outcomes Study 36-Item Short Form Survey (SF-36), a prior study found that patients with AHP had poorer mental health scores and poorer physical functioning scores in comparison with the general population
- Similarly, Gill et al (2021) conducted an online survey of patients with AHP and caregivers who were members of the British Porphyria Association and found that porphyria heavily impacted the daily lives of both cohorts, regardless of patients' attack rates[2]
- One objective of this study was to comprehensively investigate the burden of AHP on mental health in patients around the world through the evaluation of the effects of the disease on social life, personal life/goals, mental acuity, depression, and anxiety

Methods

- Adults with AHP who were aged ≥18 years were recruited from the United States, Italy, Spain, Australia, Mexico, and Brazil from January 19 to April 26, 2021
- Patients were required to have experienced >1 AHP attack within the past 2 years or to have received intravenous hemin and/or glucose for attack prevention
- Patients taking givosiran were excluded
- Participants were administered an online survey that used standardized questionnaires and validated screening instruments to evaluate the impact of AHP symptoms on social life, personal life/goals, mental acuity, depression, and anxiety; results were presented descriptively
- The 8-item Patient Health Questionnaire depression scale (PHQ-8; range, 0–24) and the 7-item Generalized Anxiety Disorder scale (GAD-7; range, 0–21) were used to screen patients for depression and anxiety
- Current moderate-to-severe depression was identified with a PHQ-8 cutoff score of ≥10, and threshold scores of 5, 10, and 15 on the GAD-7 identified mild, moderate, and severe anxiety, respectively (Figure 1)

Figure 1. PHQ-8 and GAD-7 Scale Scores[a]
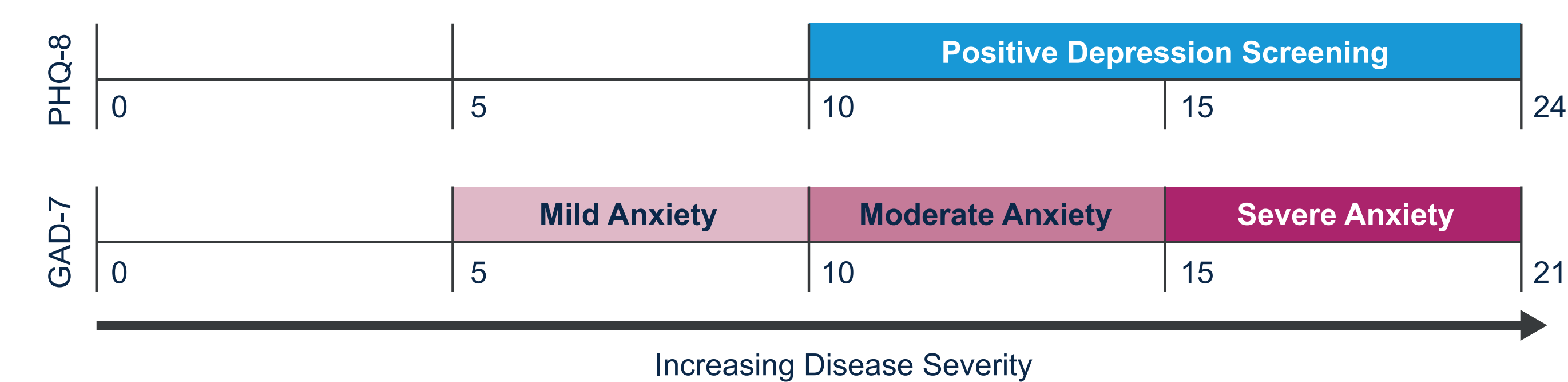
[a]PHQ-8 scale range, 0–24; GAD-7 scale range, 0–21.

- Depression and anxiety were evaluated among the overall patient population as well as several subgroups, including those with sporadic attacks (0–5 attacks over 2 years) vs recurrent attacks (≥6 attacks over 2 years), those receiving vs not receiving prophylactic treatment for AHP, and those with an active disease duration of 0–5 years vs those with a disease duration of ≥6 years

Results

- 92 patients with AHP completed the survey. Their mean age was 41.1 years; 90% of the patients were female
 - Additional demographic and health characteristics are listed in Table 1

Table 1. Patient Demographics and Health Characteristics

Characteristic	Total Sample (N=92)
Age, years, mean (SD)	41.1 (12.4)
Female, n (%)	83 (90.2)
Diagnosis, n (%)	
Acute intermittent porphyria	68 (73.9)
Hereditary coproporphyria	12 (13.0)
Variegate porphyria	9 (9.8)
5-Aminolevulinic acid dehydratase deficiency porphyria	1 (1.1)
Age at diagnosis, mean (SD), years	30.8 (10.8)
Age at first symptoms, mean (SD), years	24.3 (10.7)
Time to diagnosis, mean (SD), years	6.4 (10.1)
Duration of disease, mean (SD), years	16.9 (13.0)
AHP attacks within past 2 years, median (IQR)	4.5 (2, 12)
AHP attacks leading to hospitalization, median (IQR)	2.0 (0, 3)
AHP treatment, n (%)	
Trigger avoidance	59 (64.1)
On-demand IV glucose, as needed for an attack	52 (56.5)
On-demand hemin, as needed for an attack	36 (39.1)
Routine/scheduled hemin	22 (23.9)
Routine/scheduled IV glucose	18 (19.6)
Holistic therapies	16 (17.4)

Impact on Social Life

- Patients reported substantial impact on social life—76.1% of patients reported that most of their symptoms were hidden and that people in their social circle did not know they had AHP (Figure 2)
  - An equal percentage of patients reported feeling frustrated that people do not understand the challenges they face, because their symptoms are not visible
  - Similarly, 72.8% of patients reported feeling guilty/upset that their symptoms and disabilities affect others (Figure 2)

Figure 2. Impact on Social Life
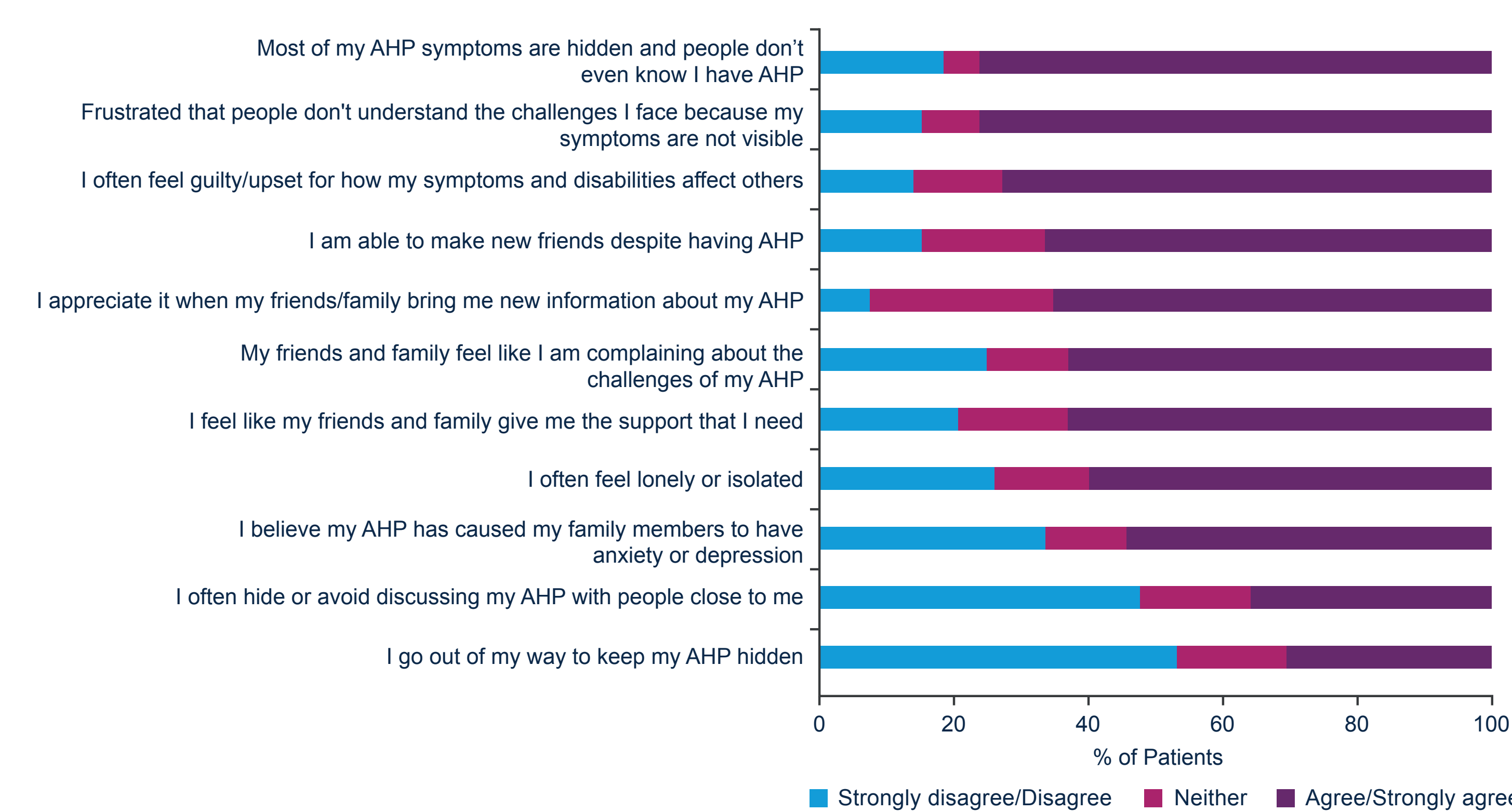
Impact on Personal Life/Goals

- AHP impacted patients' personal life/goals, with >80% of patients reporting having had to modify or give up goals important to them, more than half reporting that the decline in their mental and physical health feels never-ending, and over a third reporting they had lost their sense of purpose (Figure 3)
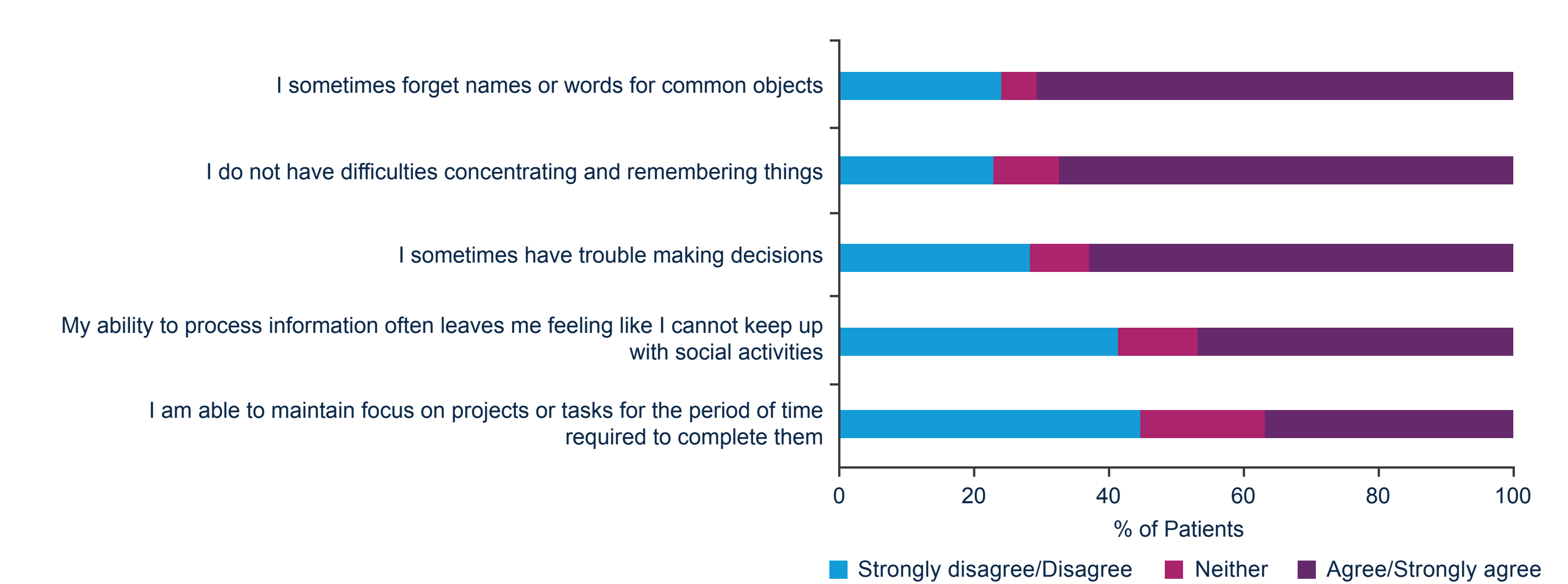
Figure 3. Impact on Personal Life/Goals
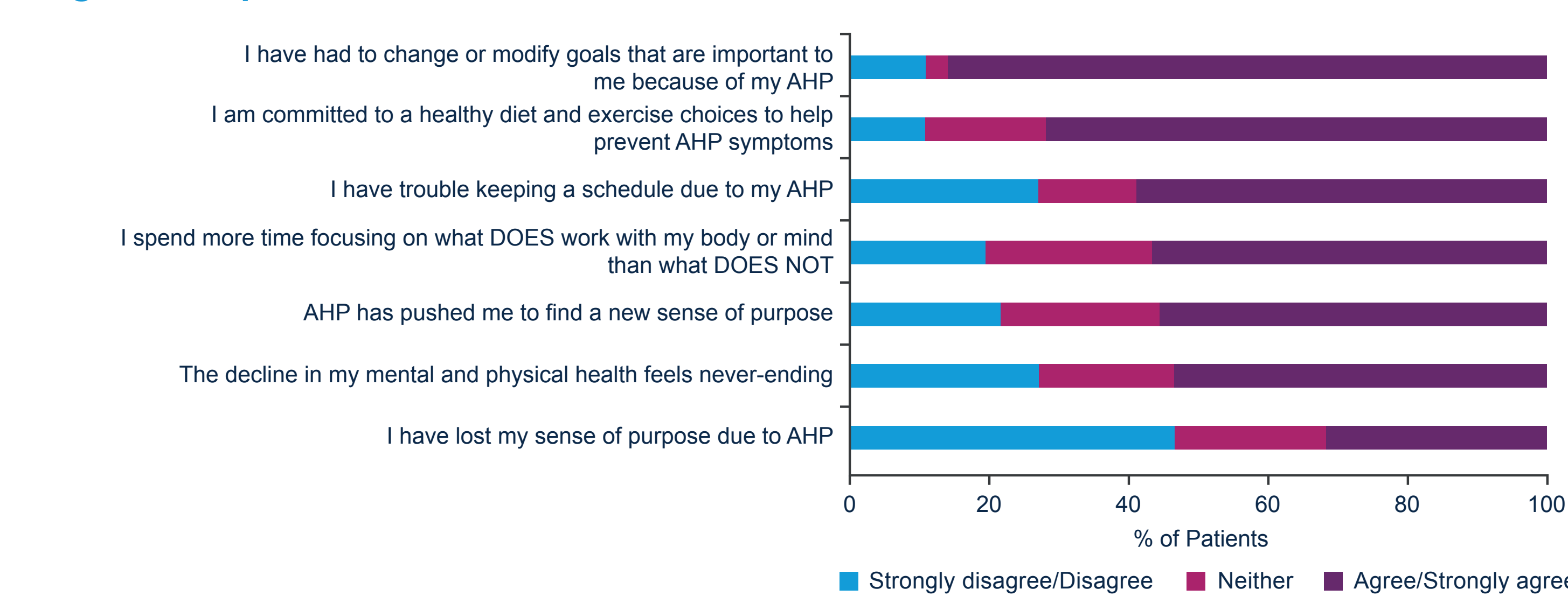
Mental Acuity

- 70.7% of patients agreed or strongly agreed that they sometimes forget names or words for common objects, and 63.1% agreed or strongly agreed that they sometimes have trouble making decisions (Figure 4)

Figure 4. Mental Acuity

Depression/Anxiety

- PHQ-8 scores indicating moderate-to-severe depression were reported in more than half of the patients with AHP (58.7%) regardless of attack rate or prophylactic treatment status. PHQ-8 results indicating moderate-to-severe depression were statistically significant for duration of active disease: 0–5 years vs ≥6 years (30.0% vs 65.7%; p=0.005). GAD-7 scores indicating moderate-to-severe anxiety were reported in 48.9% of patients, and were highest in patients experiencing recurrent attacks (56.8%) (Figure 5)

Figure 5. Depression (PHQ-8) and Anxiety (GAD-7)
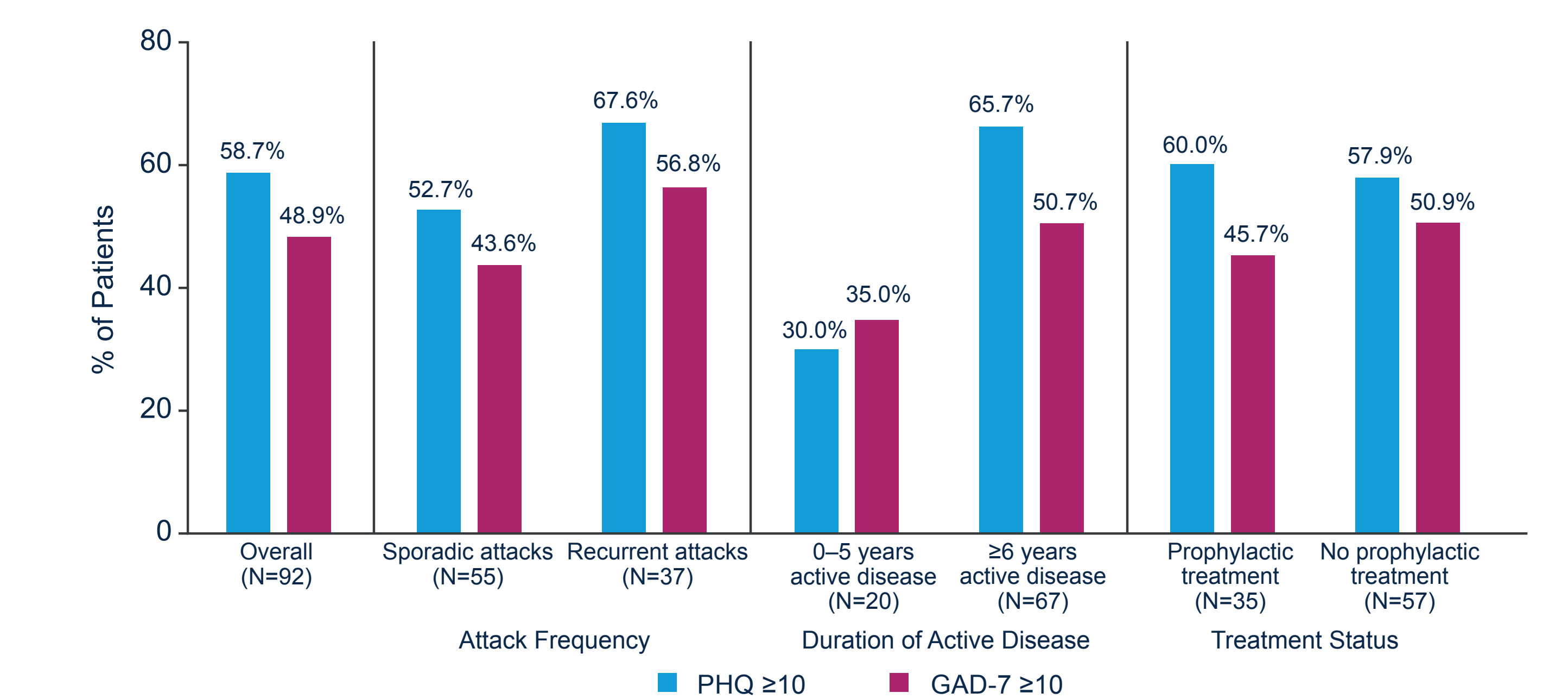
Limitations

- The study presents survey data and thus may be subject to response bias
- The diagnosis of AHP was reported by the patient and not confirmed by a physician
- Patient-reported outcomes are limited by incomplete data and the subjective nature of reporting