

Impact of Fatigue on Work Productivity and Activity Impairment and Health Care Utilization in Patients with Inflammatory Bowel Disease

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INTRODUCTION

- Fatigue impacts daily activity in patients with IBD and is commonly reported in patients with inactive disease.
- Studies show that fatigue can persist for up to 1 year after initiation of a biologic therapy.
- Despite the high prevalence (~40% of patients), there are not effective treatment options for managing fatigue.
- There is a gap in understanding the impact of fatigue on patients with IBD, particularly their work productivity and activity impairment (WPAI) and health care utilization (HCU).

OBJECTIVES

- To describe patients with IBD who report high fatigue compared to patients reporting low fatigue
- To assess the relationship between high fatigue or change in fatigue and WPAI, hospitalization and emergency room (ER) visits
- To determine if high fatigue is related to an increase in WPAI, hospitalization or ER visits within 6-months (6M) of follow-up compared to low fatigue
- To determine if patients with worsening fatigue were more likely to have an increase in WPAI, hospitalization, or ER visits in the next 6M of follow-up compared to those whose fatigue remained high yet was stable over this period (persistently high fatigue)

METHODS

Study Setting

- The CorEvitas IBD Registry is a prospective observational cohort of patients diagnosed with Crohn's Disease (CD) or Ulcerative Colitis (UC) by a gastroenterologist.
- Registry patients are recruited from 79 private and academic sites with 188 gastroenterologists throughout 26 US states.
- Patients enrolled in the registry are adults (aged 18+ years), have initiated or switched to an approved biologic or JAK inhibitor at enrollment or within 12 months prior to enrollment, are not currently in a clinical trial, and have provided informed consent.
- Patients have follow-up visits approximately every 6 months. Data are collected from both physicians and patients including demographics, medical history, disease characteristics and activity, treatment history, and patient-reported outcomes (i.e., anxiety, depression, pain, sleep disturbance and fatigue).
- At time of study, the registry included 1618 CD patients and 1312 UC patients; mean follow up time was 1.75 years, and 1.86 years, respectively.

Study Population

- Adult patients enrolled in IBD Registry between May 3, 2017 and April 1, 2022
- Patient had both an enrollment visit and 6-month follow-up visit (6M), with non-missing PROMIS fatigue score recorded at both visits
- 640 patients with CD and 569 patients with UC were included in this study, of these 402 (63%) and 374 (66%) were employed at enrollment, respectively

Definitions

Fatigue was measured using Patient Reported Outcomes Measurement Information System (PROMIS) score

Assessed at Enrollment

- High** fatigue group, patients with PROMIS fatigue score ≥ 55
- Low** fatigue group, patients PROMIS fatigue score < 55

Assessed at 6M

- Worsening** fatigue group, patients with high fatigue at enrollment and an increase in fatigue score ≥ 5 points at 6M or patients with low fatigue at enrollment and fatigue score ≥ 55 at 6M
- Persistently High** fatigue group, patients with high fatigue at enrollment whose fatigue did not worsen (+ change ≥ 5) or had no improvement to low fatigue at 6M

Analysis

- Described the distribution of covariates at enrollment by patient with High vs. Low fatigue at enrollment and Worsening vs. Persistently High fatigue at 6M, reporting counts and percentages (%), means and standard deviations (SD)
- Unadjusted comparisons of patients with High vs Low fatigue at enrollment and with Worsening vs Persistently High fatigue at 6M were made for WPAI and HCU measures at enrollment; p-values were reported from chi-square test, and t-tests respectively
- Unadjusted and adjusted comparisons were made for any increase in WPAI or any hospitalization or ER visits identified between enrollment and 6-months (6M), unadjusted p-value for chi-square test and adjusted odds ratios (OR) and 95% confidence intervals (CI) were reported

RESULTS

- High fatigue at enrollment was reported in 47% of 640 CD patients and 38% of 569 UC patients
- 56.2% of CD patients and 38.8% of UC patients with high fatigue at enrollment were in remission

Crohn's Disease (CD)

- CD patients with high fatigue at enrollment were on average younger (mean 43.8 vs. 47.1 years), more likely to be female, more likely to have ileocolonic disease, currently taking a biologic or steroid, and to report moderate/severe sleep disturbance, pain, depression and anxiety (Fig.1)
- Employed CD patients with high vs. low fatigue experienced significantly more absenteeism, presenteeism, work productivity loss and daily activity impairment at enrollment. A greater percentage of patients with high fatigue at enrollment exhibited increased absenteeism between enrollment and 6M compared to patients with low fatigue at enrollment (18.0% vs 8.5%, OR_{adj}: 2.03, 95% CI: 0.95, 4.34) (Fig.1)
- CD patients with high vs low fatigue were more likely to report a history of hospitalization or ER visit at enrollment, and more often reported having a hospitalization or ER visit by 6M, OR_{adj}: 1.16 and 1.57, though adjusted analyses were not statistically significant (Fig. 1)
- CD patients with worsening fatigue (n=107) vs persistently high fatigue (n=157) had an increase in presenteeism (51.9% vs 33.0%, OR_{adj}: 2.73, 95% CI: 1.19, 6.26), and daily activity impairment (53.3% vs 28.2%, OR_{adj}: 2.62, 95% CI: 1.45, 4.72) between enrollment and 6M

Figure 1. High (n=299) vs Low Fatigue (n=341) in Patients with Crohn's Disease: Characteristics at Enrollment and Increase in WPAI or HCU from enrollment to 6-months

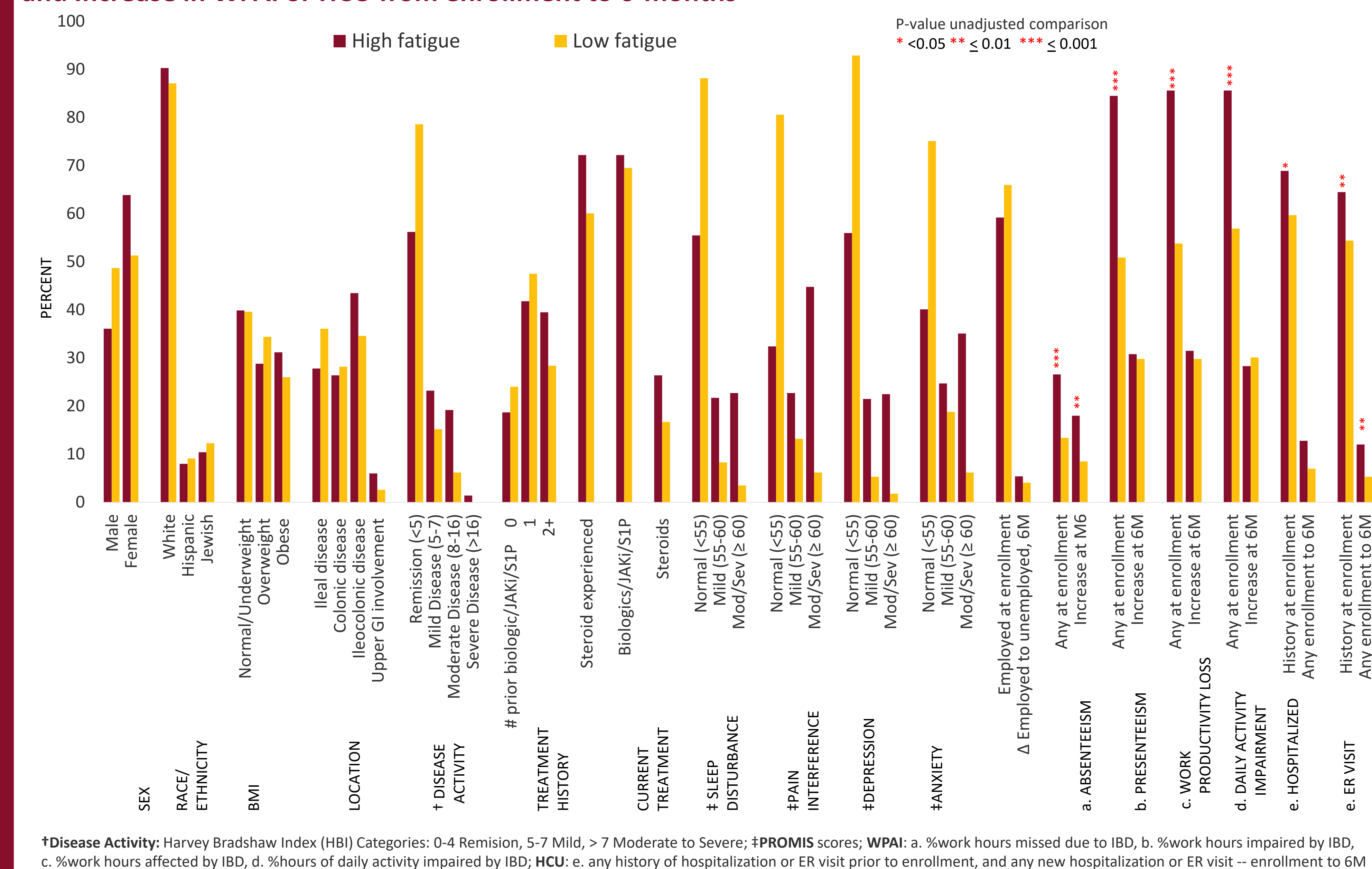
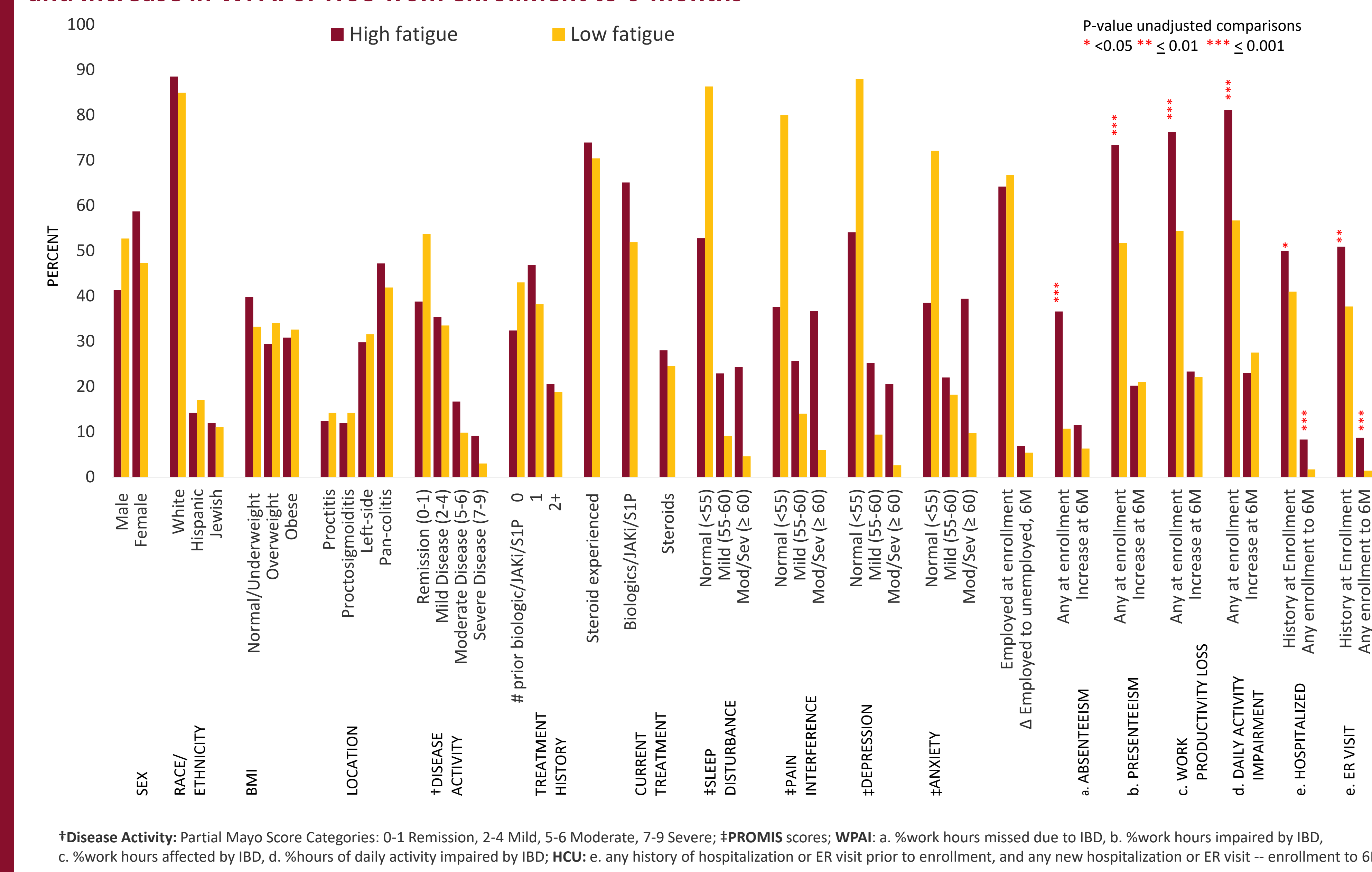


Figure 2. High (n=218) vs Low Fatigue (n=351) in Patients with Ulcerative Colitis: Characteristics at Enrollment and Increase in WPAI or HCU from enrollment to 6-months



Ulcerative Colitis (UC)

- UC patients with high vs. low fatigue at enrollment were on average younger (mean 44.8 vs. 47.9 yrs), more likely to be female, to have moderate/severe disease, to be biologic experienced, and to report more sleep disturbance, pain, depression, and anxiety at enrollment (Fig. 2)
- At enrollment, UC patients with high fatigue reported a higher proportion of absenteeism, presenteeism, work productivity loss, and daily activity impairment (Fig. 2), but were not more likely to see an increases in these measures by 6M.
- UC patients with high vs. low fatigue at enrollment were more likely to report a history of hospitalization and ER visits prior to enrollment (Fig. 2). In addition, they were almost 3 times more likely to report a hospitalization (8.3% vs 1.7%, OR_{adj}: 2.85, 95% CI: 1.02, 7.99) or ER visit (8.7% vs 1.4%, OR_{adj}: 3.75, 95% CI: 1.28, 11.01) between enrollment and 6M.
- UC patients with worsening fatigue (n=76) vs persistently high fatigue (n=118) were more likely to report an increase in daily activity impairment (48.7% vs 27.1%, OR_{adj}: 2.2, 95% CI: 1.06, 4.59) between enrollment and 6M, other WPAI and HCU measures were not remarkably different.

STRENGTHS AND LIMITATIONS

- Data include a large number of patients with CD or UC having high or worsening fatigue, where the burden of fatigue and the correlates of fatigue could be described.
- Although there are strong associations between high fatigue at enrollment and WPAI or HCU at enrollment these cannot be considered causal, also these comparisons were not adjusted for differences across the populations.
- Sample of adults in IBD registry may not represent all adults with IBD in the U.S.

CONCLUSIONS

- Our data show that fatigue is prevalent in both CD and UC and that fatigue persists in the absence of active disease.
- More severe fatigue is associated with concurrent work productivity and activity impairment in both UC and CD patients and more IBD-related HCU in the UC subjects.
- Worsening fatigue was associated with worsening daily activity impairment in both CD and UC patients, and in UC patients worsening fatigue was predictive of IBD related HCU in the following 6M.
- Treatment approaches that improve fatigue in patients with IBD may help to lessen further disability.

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