Investigating Respondents with Depression by Presence of Prior Treatment: Examining Health Outcomes Using the National Health and Wellness Survey



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Introduction

- In the early months of the 2020 COVID-19 pandemic, the rate of depression nearly tripled among adults in the United States (US); these rates have persisted into 2021, affecting a reported 32.8% of this population.¹
- During 2015-2018, antidepressant use in women was over double that of men, with the greatest use in women aged 60 and older (20.3%).²
- For initial treatment of depression, the 2019 American Psychological Association (APA) Clinical Guidance recommends either psychotherapy or monotherapy with a second-generation antidepressant.³
- Polypharmacy for depression has shown a higher rate of nonadherence, side effects, and drug-drug interactions compared to monotherapy.4-5
- Limited knowledge exists about the potential difference between individuals taking monotherapy for depression who have had prior treatment and those who are on their first agent

Objective

- Examine differences between individuals with depression who were taking one prescription for depression by history of prior treatment (prior treatment = PT, no prior treatment = NPT) in:
- Class of medication taken (e.g., selective serotonin reuptake inhibitor, SSRI)
- Healthcare resource use (HRU)
- Patient activation (PAM score) Treatment satisfaction
- Severity of depression (PHQ score)
- Medication adherence visual analog scale (VAS)
- Health-related quality of life (HRQoL)

Methods

Data Source and Sample

- Retrospective data were obtained from the 2021 US National Health and Wellness Survey (NHWS), a nationally representative self-reported cross-sectional online survey of the general adult population in the US.
- Approximately 75,000 respondents complete the US NHWS each year.
- A quota sampling procedure is used, with strata by sex, age, and race, to ensure that the demographic composition of the NHWS sample is representative of the adult population.
- Inclusion/exclusion criteria:
- Respondents with self-reported diagnosis of depression
- Currently taking monotherapy for depression
- 18 years or older - Residing in the US
- Did not report "ever experienced" bipolar disorder or schizophrenia or screen
- positive for bipolar disorder on the Mood Disorder Questionnaire
- Cohort definition
- Cohorts were defined by self-reported history of prior treatment for depression:
- PT: individuals had prior treatment to their current monotherapy
- NPT: individuals had no prior treatment to their current monotherapy

Statistical Analysis

- Data were summarized as means and standard deviations for continuous variables and counts and percentages for categorical variables.
- Bivariate statistics (t-tests for continuous variables, Chi-square tests for categorical variables) were used to compare data between the PT and NPT

Results

- Of the 75,098 NHWS respondents, 4,255 (5.7%) met inclusion criteria for this study.
- 1,810 respondents (42.5% of the study sample) reported having prior medication, treatment, or therapy.

Sociodemographic and Health Characteristics (Table 1)

- The majority of respondents were white (83.2%) and female (74.4%).
- PT respondents were more likely to have a college/university degree (p < 0.001).
- NPT respondents were more likely to be on a commercial insurance (p < 0.01).
- PT respondents reported a higher proportion of anxiety, generalized anxiety disorder, obsessive compulsive disorder (OCD), panic disorder, post-traumatic stress disorder (PTSD), and social anxiety disorder diagnoses than NPT respondents (all p < 0.05).

Table 1. Sociodemographic and Health Characteristics

Characteristic	n=1810	n=2445	<i>p</i> -value
Age (years), Mean ± SD	46.52 ± 16.80	46.94 ± 16.50	0.415
Female, n (%)	1392 (76.9)	1775 (72.6)	0.001
White, n (%)	1523 (84.1)	2016 (82.5)	0.008
Hispanic, n (%)	157 (8.7)	202 (8.3)	0.632
Married/Living with Partner, n (%)	932 (51.5)	1314 (53.7)	0.182
Education, n (%)			<0.001
Less than university degree	889 (49.1)	1333 (54.5)	
University degree or higher	919 (50.8)	1104 (45.2)	
Did not disclose	2 (0.1)	8 (0.3)	
Employed, n (%)	1000 (55.2)	1404 (57.4)	0.157
Income, n (%)			0.589
<\$25,000	290 (16.0)	388 (15.9)	
\$25,000 to <\$50,000	413 (22.8)	541 (22.1)	
\$50,000 to <\$100,000	315 (17.4)	468 (19.1)	
\$100,000+	708 (39.1)	949 (38.8)	
Did not disclose	84 (4.6)	99 (4.0)	
Health Insurance, n (%)			0.002
Commercially insured	941 (52.0)	1359 (55.6)	
Medicare	196 (10.8)	230 (9.4)	
Medicaid	415 (22.9)	494 (20.2)	
Other	176 (9.7)	205 (8.4)	
Not insured	82 (4.5)	157 (6.4)	
Currently Using Alcohol, n (%)			0.077
Daily	91 (5.0)	118 (4.8)	
4 to 6 times a week	120 (6.6)	170 (7.0)	
2 to 3 times a week	240 (13.3)	338 (13.8)	
Once a week	129 (7.1)	237 (9.7)	
2 to 3 times a month	220 (12.2)	284 (11.6)	
Once a month or less often	457 (25.2)	557 (22.8)	
"I do not drink alcohol."	553 (30.6)	741 (30.3)	
Smoking Status, n (%)			0.567
Current smoker	288 (15.9)	400 (16.4)	
Former smoker	528 (29.2)	677 (27.7)	
Never smoked	994 (54.9)	1368 (56.0)	
Exercise (days in past month). Mean ± SD	6.43 ± 8.22	6.98 ± 8.87	0.039

Abbreviations: PT, prior treatment; NPT, no prior treatment; SD, standard deviation

Depression Characteristics (Table 2)

- On average, PT respondents had been diagnosed with depression 5 years earlier than NPT respondents (16.51 vs. 11.70, p < 0.001).
- PT respondents were more likely to be diagnosed with depression by a psychiatrist and participate in talk therapy than NPT respondents (p < 0.001).

Table 2. Depression Characteristics

Characteristic	PT n=1810	NPT n=2445	<i>p</i> -value
Years Since Depression Diagnosis, Mean ± SD	16.51 ± 12.20	11.70 ± 10.89	<0.001
Participates in Talk Therapy, n (%)	645 (35.6)	569 (23.3)	<0.001
Diagnosing HCP, n (%)			<0.001
Primary Care Physician/GP/Internist	793 (46.3)	1264 (56.2)	
Nurse Practitioner/Physician Assistant	85 (5.0)	128 (5.7)	
Psychiatrist	549 (32.0)	507 (22.5)	
Psychologist	243 (14.2)	264 (11.7)	
Neurologist	0 (0.0)	0 (0.0)	
Other	43 (2.5)	86 (3.8)	

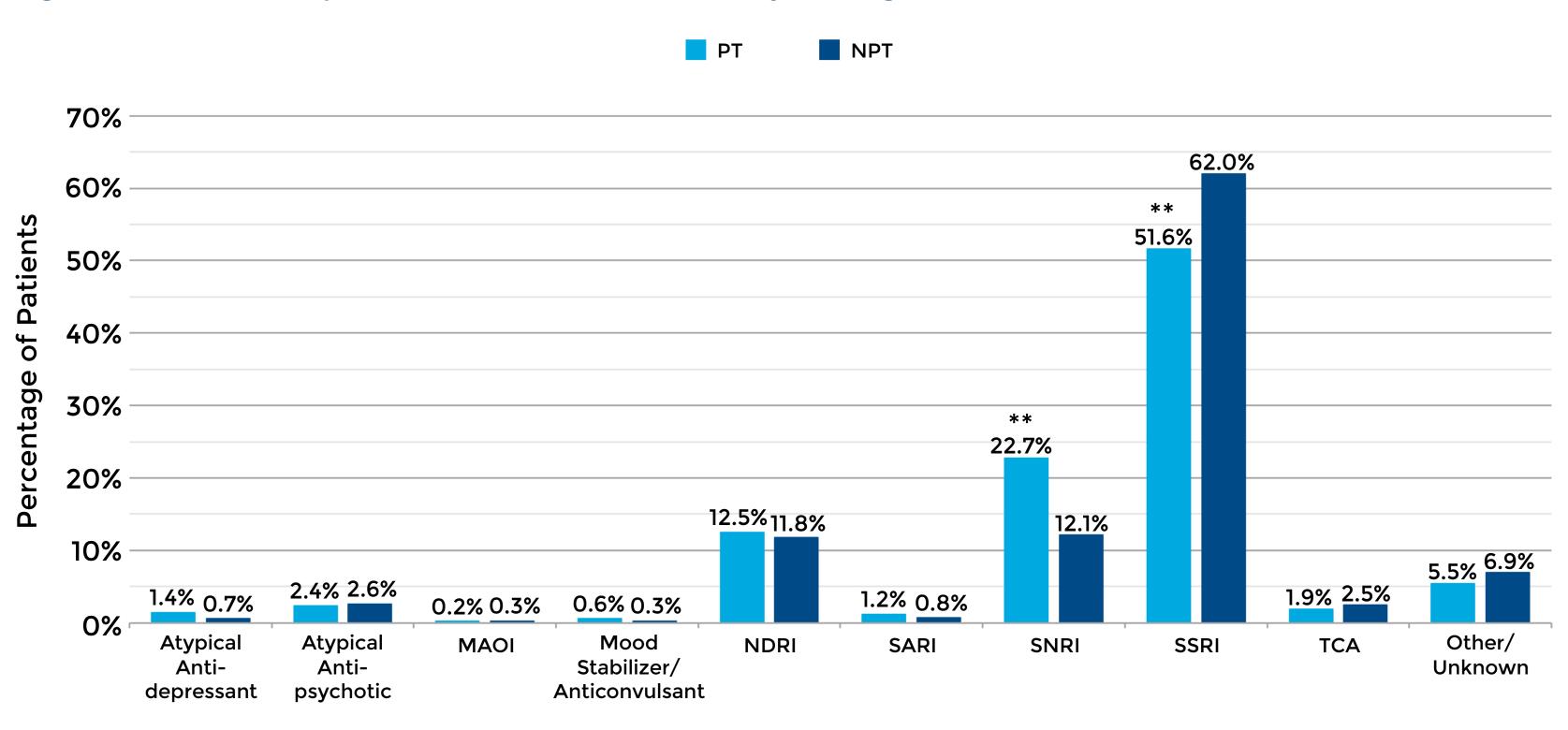
Abbreviations: GP, general practitioner; PT, prior treatment; NPT, no prior treatment; SD, standard deviation

Outcomes

- PT respondents were less likely to be taking a SSRI, but more likely to be taking an SNRI, than NPT respondents (Figure 1).
- More PT respondents reported provider, psychiatrist, psychologist/therapist, and emergency room visits and hospitalizations in the past 6 months than NPT respondents (all p < 0.01) (Figure 2).
- A higher proportion of PT respondents were at PAM Level 1 "disengaged and overwhelmed" (10.0% vs. 7.8%, p < 0.05) (Figure 3).
- There were no significant differences in overall treatment satisfaction, with both groups indicating an average score of 5 "somewhat satisfied" (Table 3).
- PT respondents reported a greater average PHQ-9 score than NPT respondents (9.7 vs. 8.4, p < 0.001), but
- Both groups reported high medication adherence with VAS scores of 89.3% for the PT group and 86.0% for the NPT group (p < 0.001) (**Table 3**).
- There were no clinically meaningful differences between PT and NPT respondents in Mental Component Summary (MCS), Physical Component Summary (PCS), health utilities, and EQ-5D index (Figure 4).6-7
- PT respondents reported lower EQ visual analog scale (VAS) scores compared to NPT respondents (all p < 10.01) (Figure 4).

Figure 1. Class of Depression Medication Currently Taking

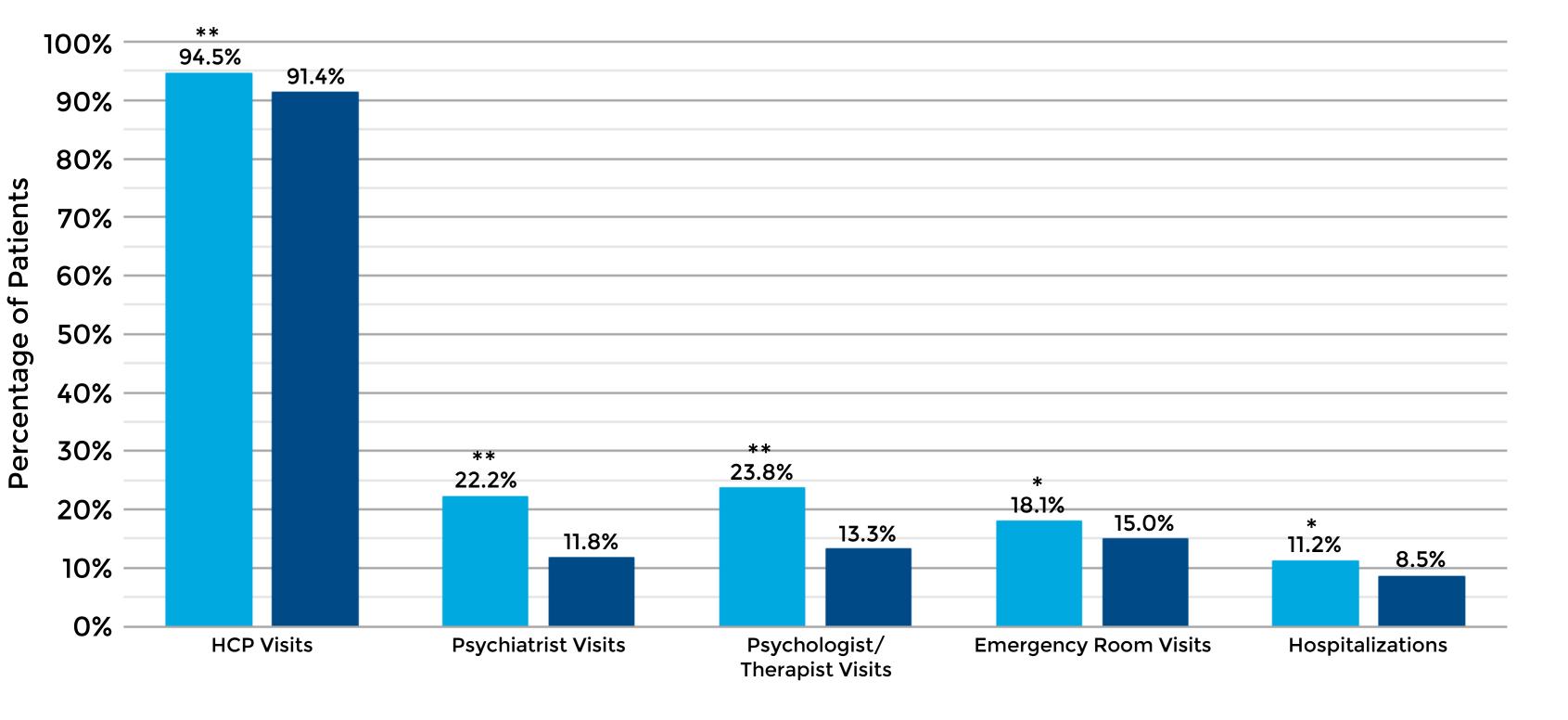
both averages fall into the "mild depression" score segment (Table 3).



Other/unknown medication class includes eskatamine hydrochloride, vortioxetine hydrochloride, brexanolone, and other prescription medications o < 0.05 compared to NPT (reference); **p < 0.001 compared to NPT (reference)

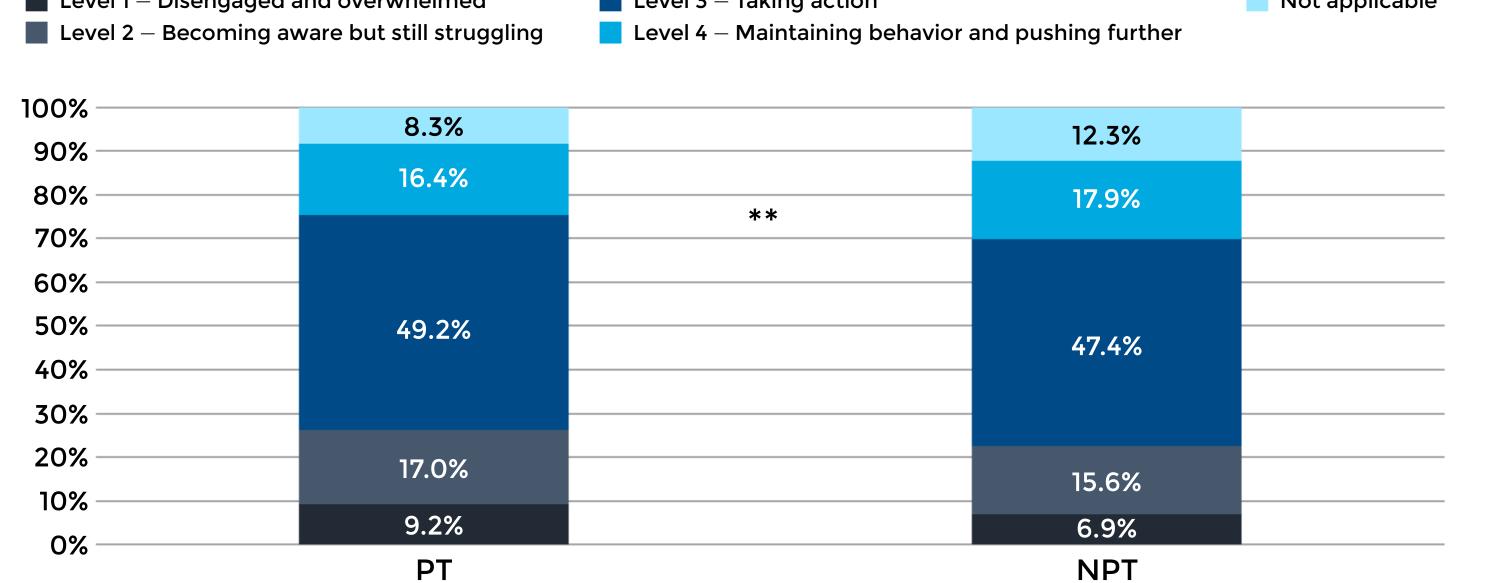
PT NPT

Figure 2. Healthcare Resource Use



Abbreviations: HCP, healthcare provider; PT, prior treatment; NPT, no prior treatment *p<0.01 compared to NPT (reference); **p<0.001 compared to NPT (reference)

Figure 3. PAM-13 Level



**p<0.001 compared to NPT (reference

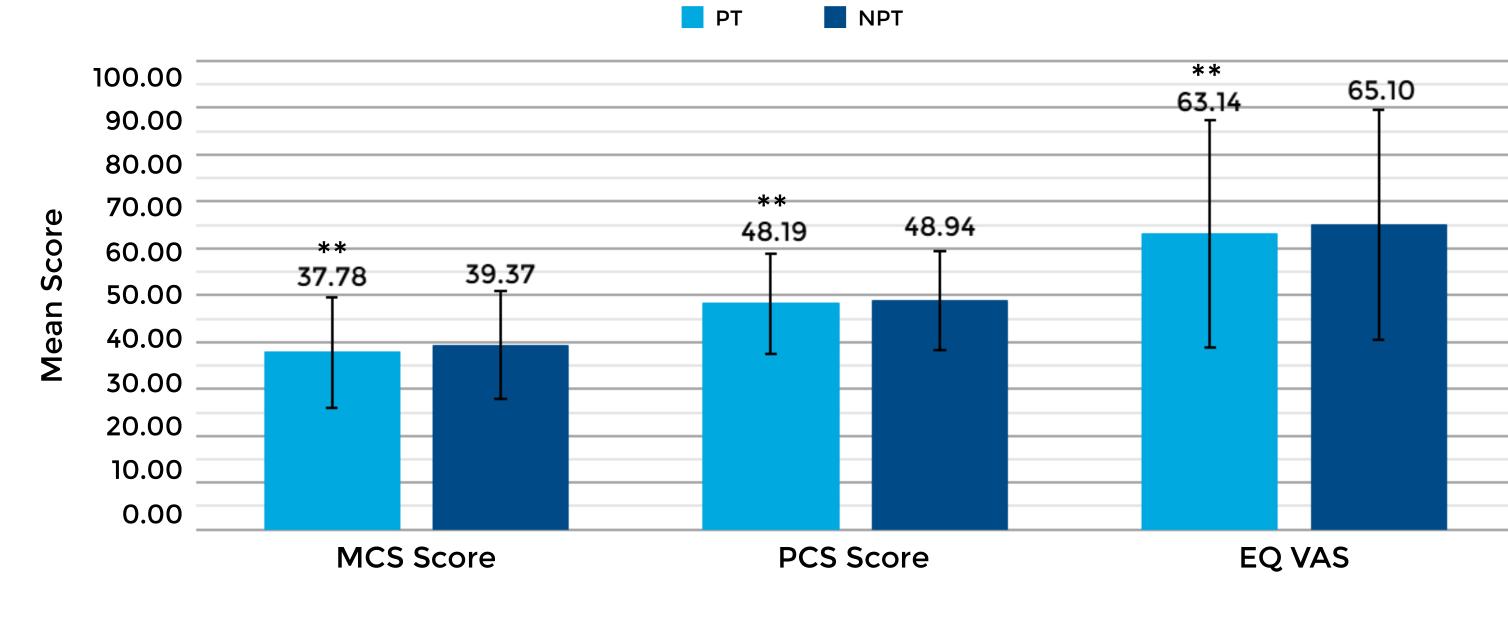
Table 3. Outcomes (Satisfaction, PHQ-9, Adherence)

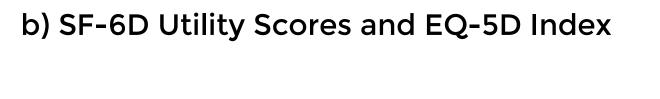
Outcomes	PT n=1810	NPT n=2445	p-value
PAM Score, Mean ± SD	60.95 ± 11.39	61.82 ± 11.48	0.020
Treatment Satisfaction, *Mean ± SD	5.20 ± 1.36	5.25 ± 1.33	0.222
PHQ-9 Score, Mean ± SD	9.69 ± 6.38	8.38 ± 6.23	<0.001
Adherence			
VAS, Mean ± SD	89.28 ± 20.86	86.04 ± 24.56	<0.001
VAS ≥ 80%, n (%)	1568 (86.6)	1971 (80.6)	<0.001

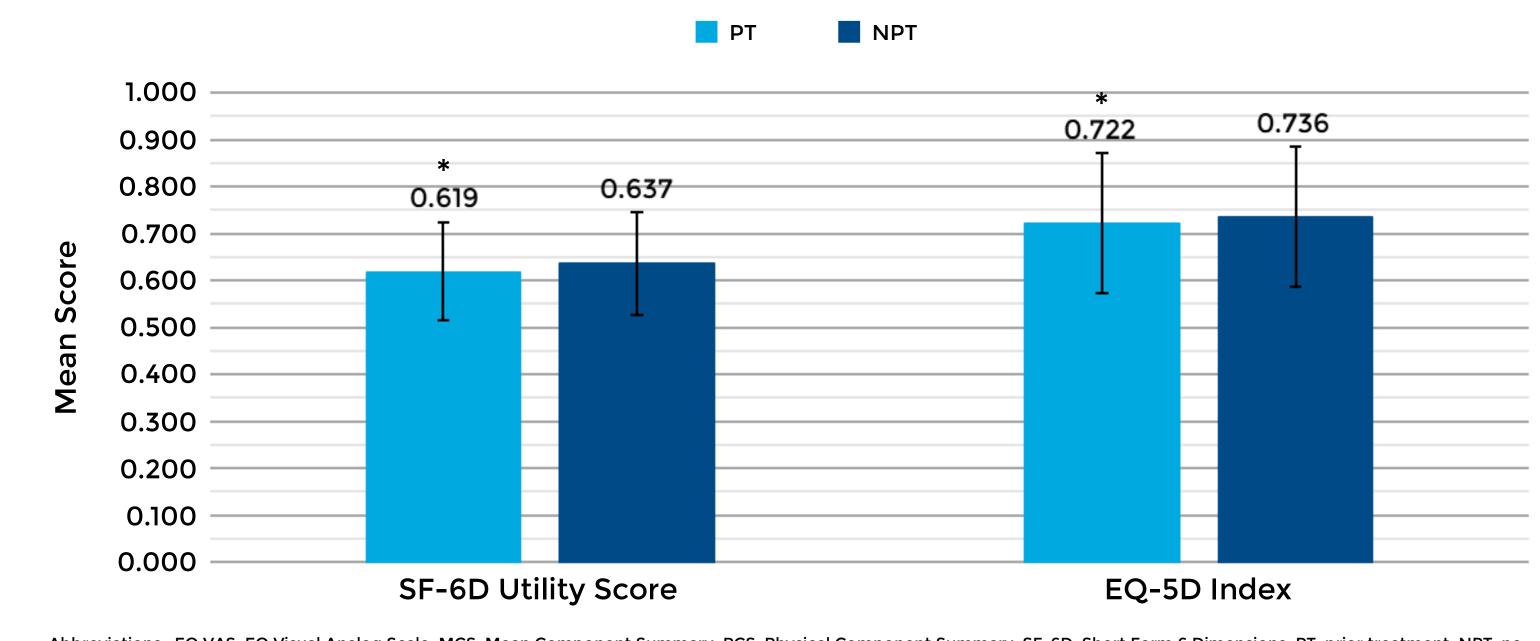
Abbreviations: PHQ-9, Patient Health Questionnaire-9; PT, prior treatment; NPT, no prior treatment; SD, standard deviation

Figure 4. Health-Related Quality of Life

a) SF-36v2 Summary Scores and EQ VAS







Abbreviations: EQ VAS, EQ Visual Analog Scale; MCS, Mean Component Summary; PCS, Physical Component Summary; SF-6D, Short Form 6 Dimensions; PT, prior treatment; NPT, no *p<0.01 compared to NPT (reference); **p<0.001 compared to NPT (reference)

Limitations

- Information was unable to be obtained about use of additional, nonpharmacological, treatments for depression (including cognitive behavioral therapy or other
- Self-reported data may be subject to recall bias; diagnoses were not confirmed by healthcare providers or validated using claims or EHR data.
- There is potential for bias between those who take an online survey and those who do not – the latter may include, for example, those without internet access, those who are institutionalized, etc.
- This study was cross-sectional and therefore could not determine any causal relationship between taking prior medication and related health outcomes.
- Multivariable adjustments were not conducted; therefore, confounders could have had an impact on the study results.

Conclusions

- Respondents who had treatment prior to their current monotherapy for depression reported greater HRU, lower activation, and more severe depression than those with no prior treatment for depression.
- Previous studies have shown that adherence and depression outcomes may be improved in patient groups who receive targeted attention; this may include discussing barriers to depression care, stigma, and misinformation.8
- Individuals at highest risk of poor outcomes and nonadherence may include those who continue to try new depression medication; this knowledge may be useful for healthcare providers when looking to identify which of their patients may require additional support and education.

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