Sociodemographic Indicators and Quality of Life Impact of Major Depressive Disorder in the United States Using the Medical Expenditure Panel Survey #PCR14

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Introduction

- Major depressive disorder (MDD) is a common mental health disorder characterized by a period of depressive symptoms that persists for at least 2 weeks and affects cognition and functioning[1]
- Based on the National Survey on Drug Use and Health 2020, an estimated 21 million adults (8.4%) experienced at least one major depressive episode in 2020[2]
- MDD may impact multiple aspects of individuals' lives, such as work and healthcare outcomes, but evidence is limited on other aspects such as household composition[3]
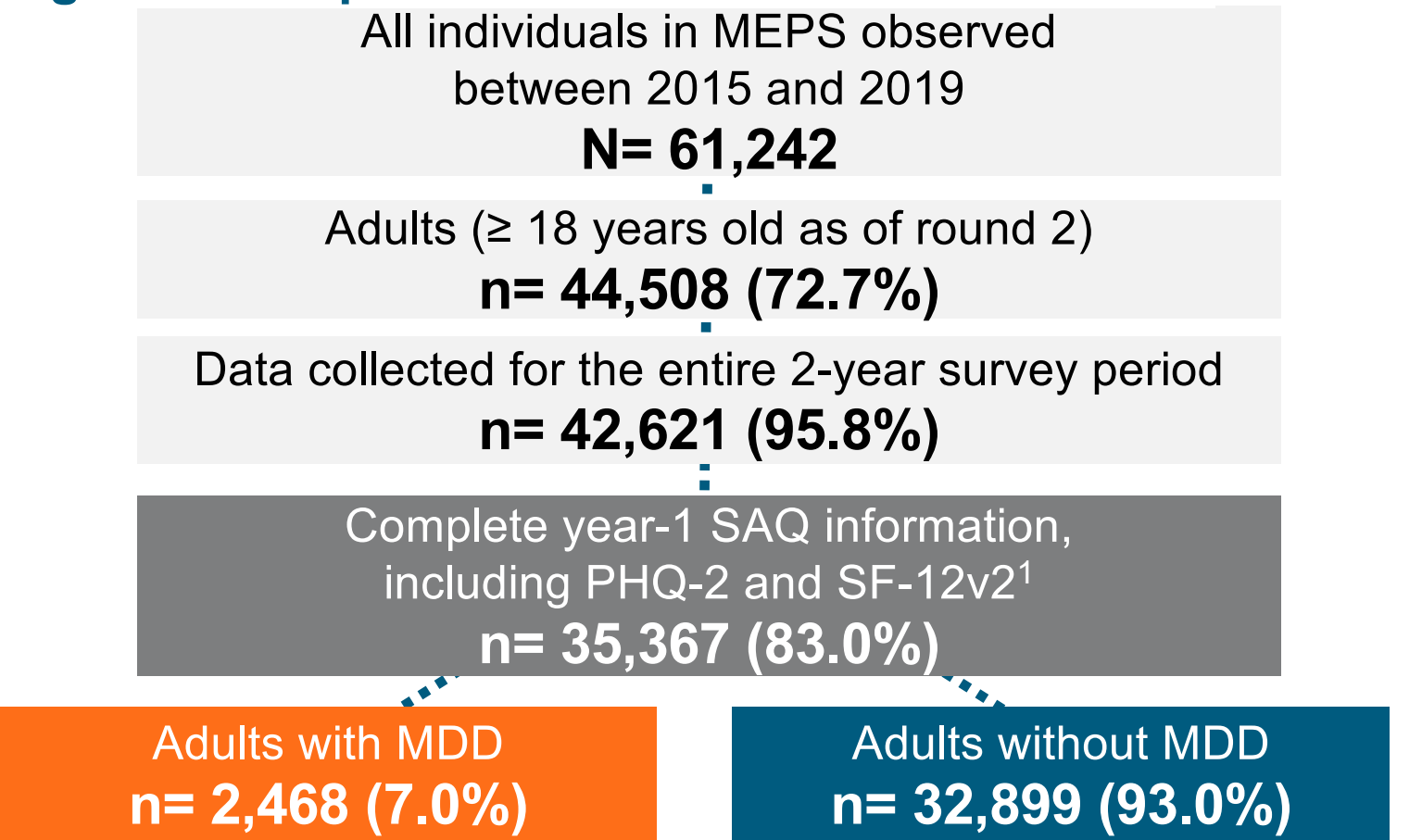
Objective

- To compare sociodemographic indicators and quality-of-life outcomes between adults with and without MDD in the United States (US)

Methods

- Adults (≥18 years) were identified from Medical Expenditure Panel Survey (MEPS) data (2015-2019; panels 20-23; **Figure 1**)
- Adults with a score of ≥3 on the Patient Health Questionnaire-2 (PHQ-2; self-report) were classified into the Adults with MDD cohort[4]; remaining adults were classified into the Adults without MDD cohort
- Sociodemographic indicators (household composition, marital status, employment, household poverty, education) and quality-of-life outcomes (12-item short form survey version 2 [SF-12v2] mental component score [MCS] and physical component score [PCS], 6-dimension short form survey [SF-6D] utility score) were compared
- Results were weighted using MEPS nationally representative person-level weights and adjusted for selected characteristics (e.g., gender, age, race). 95% Wald interval error bars are presented for binary variables (proportions), and 95% confidence error bars are presented for continuous variables (means)
- Adjusted weighted generalized linear models with a binomial distribution and logit link (proportion variables), negative binomial distribution and log link (count variables), and gaussian distribution and identity link (continuous variables) were used to obtain odds ratios [OR], incidence rate ratios [IRR], and mean differences between cohorts, alongside p-values

Figure 1. Sample Selection

All individuals in MEPS observed between 2015 and 2019
N= 61,242

Adults (≥ 18 years old as of round 2)
n= 44,508 (72.7%)

Data collected for the entire 2-year survey period
n= 42,621 (95.8%)

Complete year-1 SAQ information, including PHQ-2 and SF-12v2[1]
n= 35,367 (83.0%)

Adults with MDD
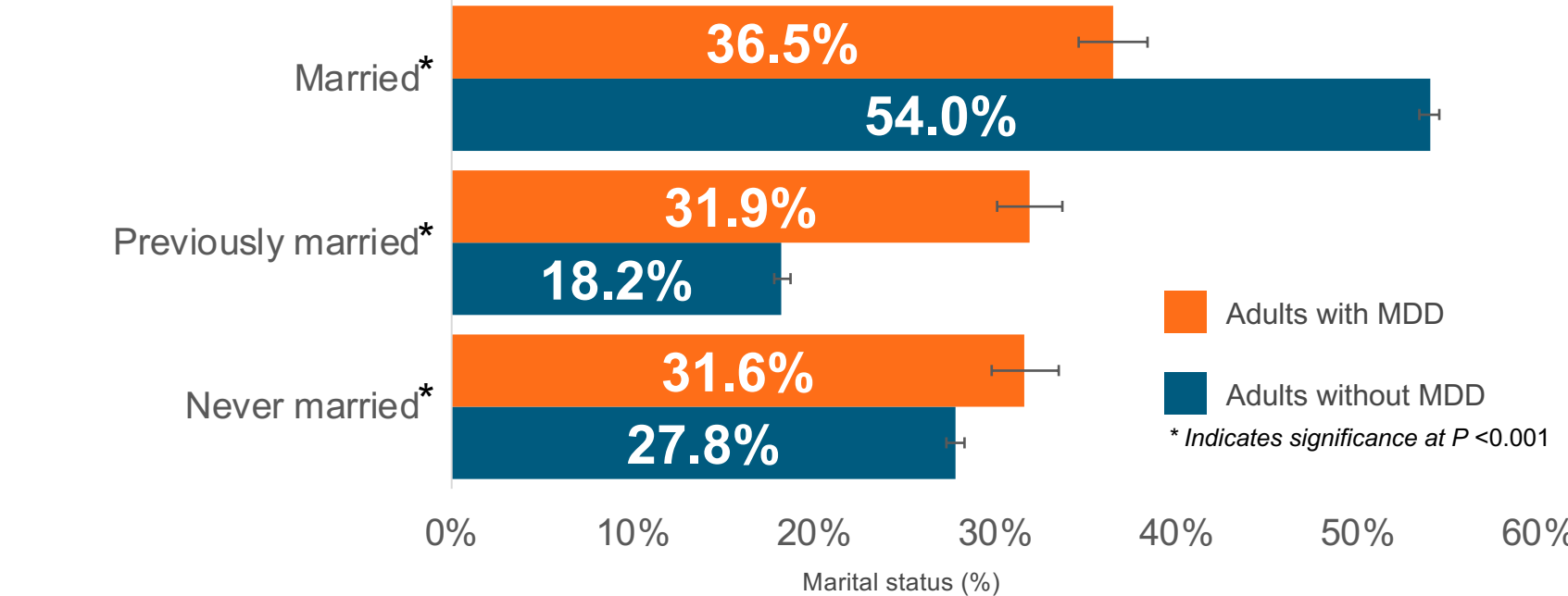**n= 2,468 (7.0%)**

Adults without MDD
n= 32,899 (93.0%)

1. The Self-Administered Questionnaire (SAQ) is administered by MEPS on rounds 2 and 4 of the respective panel for each adult respondent and contains the 2-item Patient Health Questionnaire (PHQ-2) and 12-item Short Form Survey version 2 (SF-12v2).

Results

Table 1. Demographic Characteristics

	Adults with MDD n = 2,468	Adults without MDD n = 32,899	Standardized difference
Age, mean ± SD [median]	47.5 ± 17.0 [48.0]	47.2 ± 17.8 [47.0]	0.02
18-24, n (%)	248 (10.1%)	3,715 (11.3%)	0.04
25-44, n (%)	831 (33.7%)	11,603 (35.3%)	0.03
45-64, n (%)	969 (39.3%)	11,163 (33.9%)	0.11
≥65, n (%)	420 (17.0%)	6,418 (19.5%)	0.06
Female, n (%)	1,474 (59.7%)	16,964 (51.6%)	0.17
Race, n (%)			
White	1,879 (76.1%)	25,969 (78.9%)	0.07
Black	363 (14.7%)	3,771 (11.5%)	0.10
Native American	32 (1.3%)	218 (0.7%)	0.06
Asian & Pacific Islander	93 (3.8%)	2,106 (6.4%)	0.12
Multiple	101 (4.1%)	834 (2.5%)	0.09
Ethnicity, n (%)			
Hispanic	361 (14.6%)	5,156 (15.7%)	0.03
Not Hispanic	2,107 (85.4%)	27,743 (84.3%)	0.03

Figure 2. Marital Status

Married*: 36.5% (Adults with MDD), 54.0% (Adults without MDD)
Previously married*: 31.9% (Adults with MDD), 18.2% (Adults without MDD)
Never married*: 31.6% (Adults with MDD), 27.8% (Adults without MDD)

Indicates significance at P <0.001

- Adults with MDD were **less likely to be married** versus adults without MDD (OR: 0.49; p<0.001; **Figure 2**)

HUMAN CAPITAL

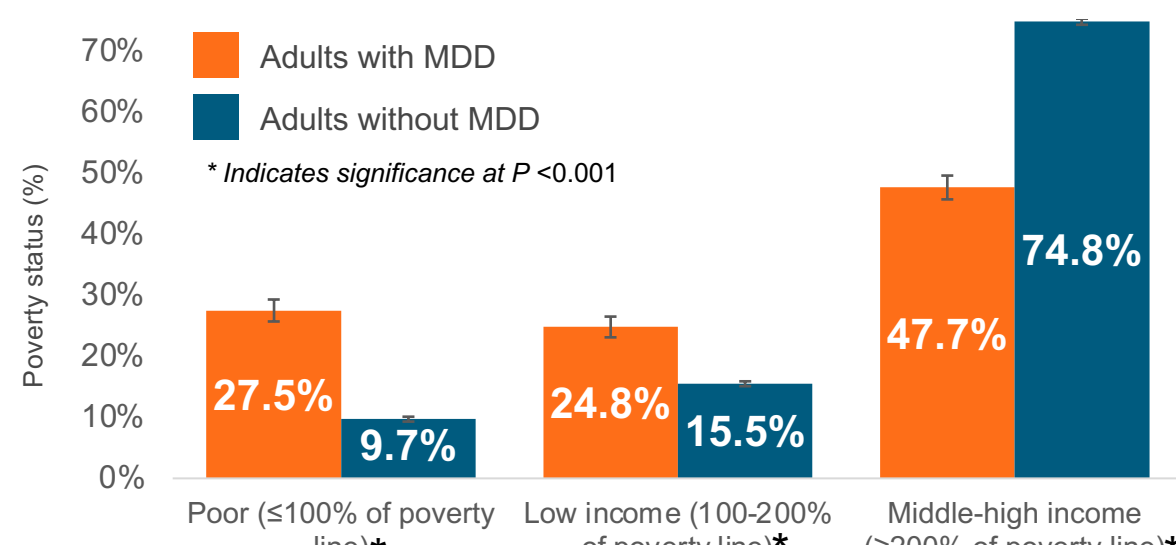### Figure 3. Employment Status

Employed: 42.8% (Adults with MDD), 67.6% (Adults without MDD)*

Indicates significance at P <0.001
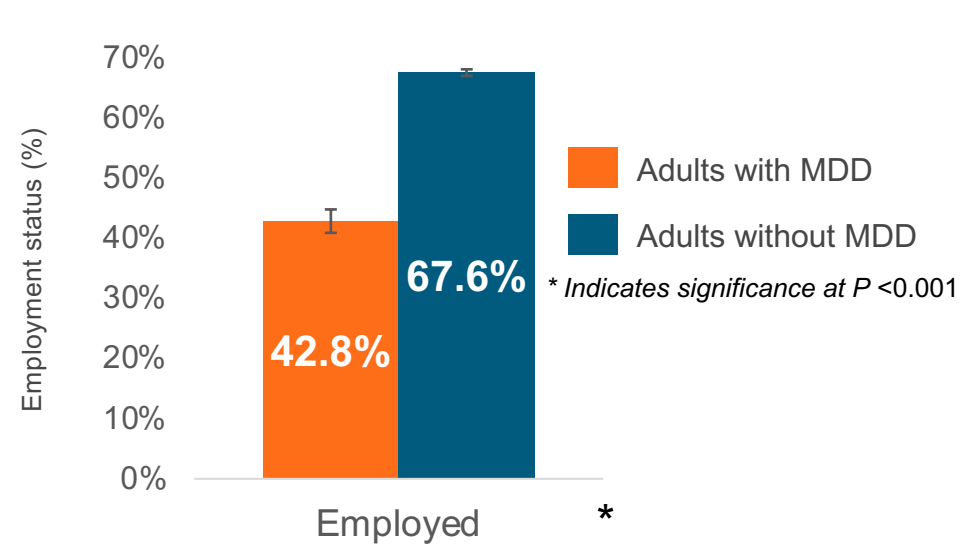
- Adults with MDD were **less likely to be employed** versus adults without MDD (OR: 0.32; p<0.001; **Figure 3**)

Figure 4. Poverty Status
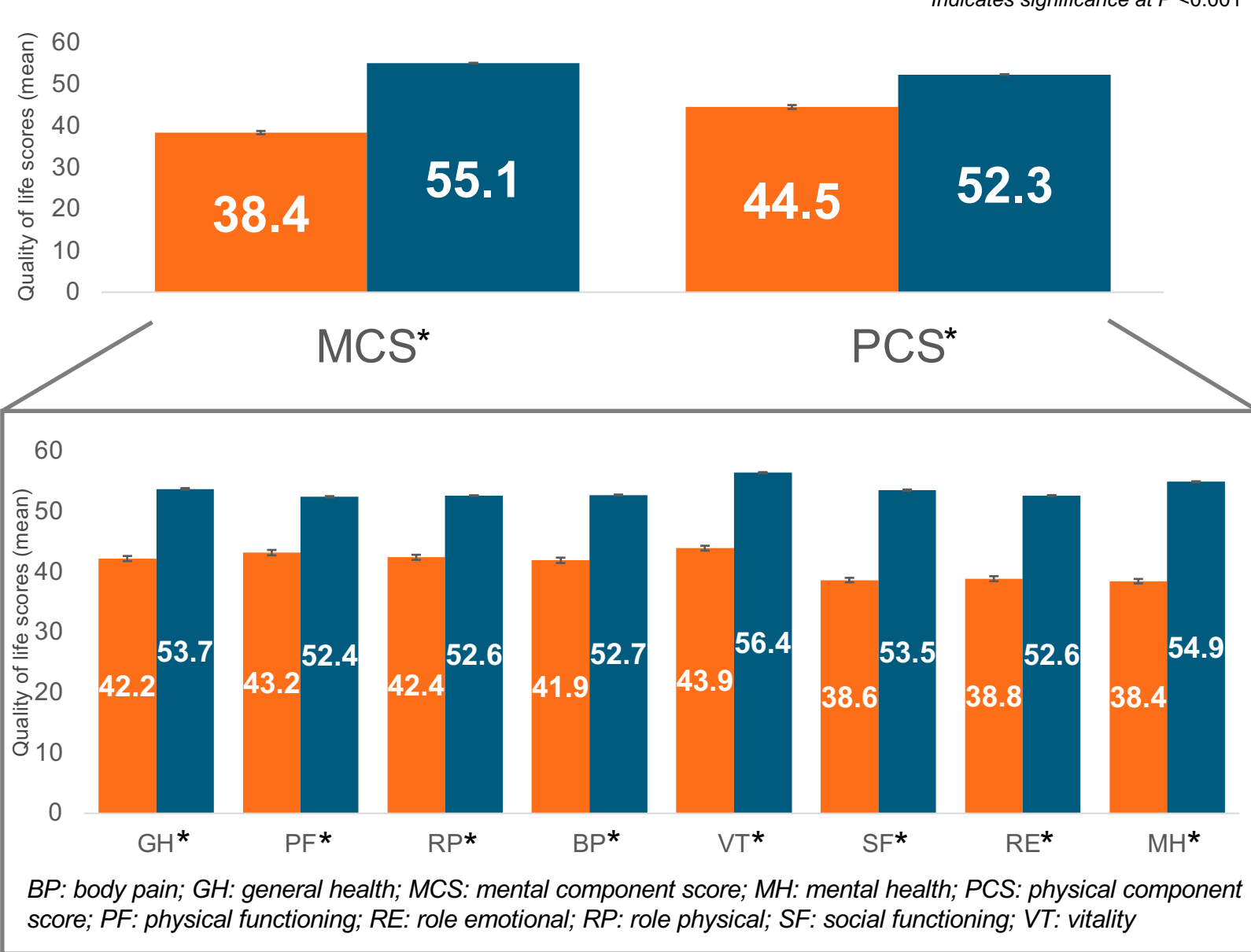

Poor (≤100% of poverty line)*: 27.5% (Adults with MDD), 9.7% (Adults without MDD)
Low income (100-200% of poverty line)*: 24.8% (Adults with MDD), 15.5% (Adults without MDD)
Middle-high income (≥200% of poverty line)*: 47.7% (Adults with MDD), 74.8% (Adults without MDD)

Indicates significance at P <0.001

- Adults with MDD were **more likely to be living below the poverty line** versus adults without MDD (OR: 3.52; p<0.001; **Figure 4**)

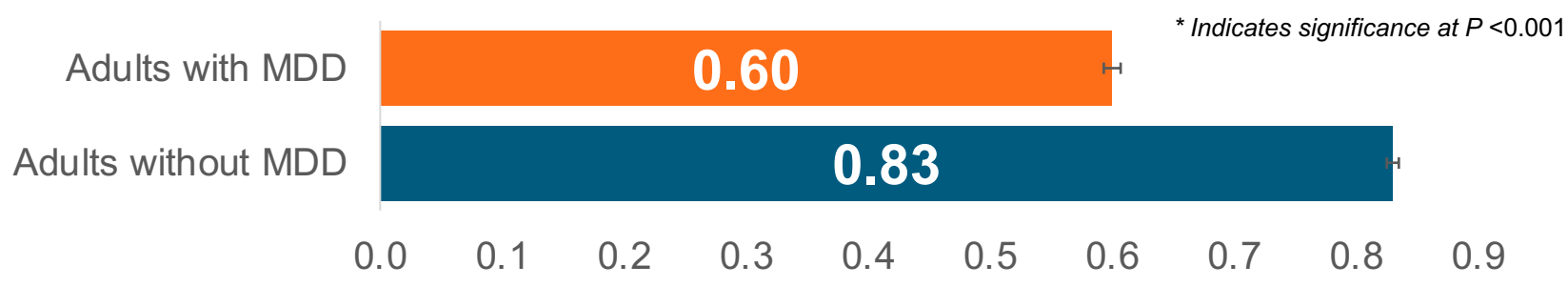### Figure 5. Highest Degree of Education Attained

High school diploma at most*: 70.8% (Adults with MDD), 55.0% (Adults without MDD)
Bachelor's degree at least*: 17.9% (Adults with MDD), 34.6% (Adults without MDD)
Other degree: 11.2% (Adults with MDD), 10.3% (Adults without MDD)

Indicates significance at P <0.001

- Adults with MDD were **less likely to have completed at least a bachelor's degree** versus adults without MDD (OR: 0.42; p<0.001; **Figure 5**)

OVERALL WELLBEING

Figure 6. Average Quality of Life Score – SF-12v2 Summary and Domain scores

* Indicates significance at P <0.001

MCS*: 38.4 (Adults with MDD), 55.1 (Adults without MDD)
PCS*: 44.5 (Adults with MDD), 52.3 (Adults without MDD)

GH*: 42.2 / 53.7; PF*: 43.2 / 52.4; RP*: 42.4 / 52.6; BP*: 41.9 / 52.7; VT*: 43.9 / 56.4; SF*: 38.6 / 53.5; RE*: 38.8 / 52.6; MH*: 38.4 / 54.9

BP: body pain; GH: general health; MCS: mental component score; MH: mental health; PCS: physical component score; PF: physical functioning; RE: role emotional; RP: role physical; SF: social functioning; VT: vitality
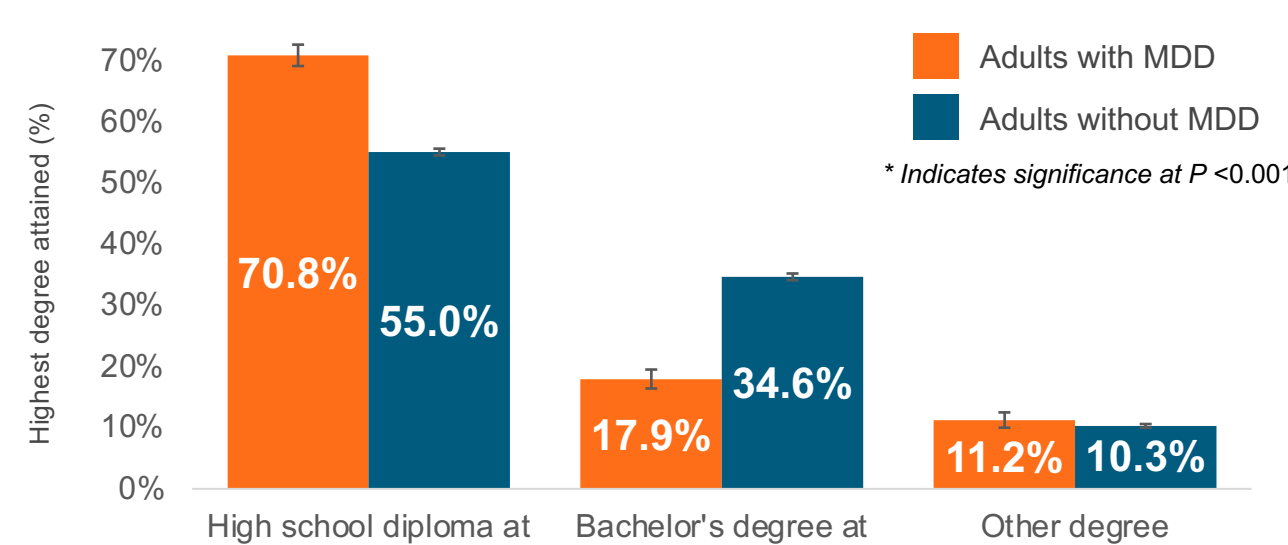
- Adults with MDD had **lower SF-12v2 MCS and PCS scores** and **lower SFv12 domain scores** versus adults without MDD (mean differences; all p<0.001; **Figure 6**)

Figure 7. Quality of Life – SF-6D*

* Indicates significance at P <0.001

Adults with MDD: 0.60
Adults without MDD: 0.83

- Adults with MDD had a **lower SF-6D score** versus adults without MDD (mean difference 0.23; p<0.001; **Figure 7**)

Table 2. Household Composition[1]

	Adults with MDD	Adults without MDD	OR/IRR[2] [95% CI]
Proportion of adults living with ≥1 other individual in household (%)	72.5%	81.3%	0.61 [0.54, 0.69]*
Number of others in the household (Mean ± SD [median])	1.5 ± 1.5 [1.0]	1.9 ± 1.6 [1.0]	0.86 [0.82, 0.90]*
Number of other adults in the household (Mean ± SD [median])	1.0 ± 0.9 [1.0]	1.2 ± 1.0 [1.0]	0.87 [0.83, 0.91]*

*P values were *P <0.001
1. Other individuals living with Adults with/without MDD may have MDD. When including other individuals without MDD only: 66.8% of Adults with MDD live with another individual without MDD (mean 2.1 others; 1.3 adults) vs 79.5% for Adults without MDD (mean 2.3 others; 1.4 adults).
2. Odds ratios (OR) and incidence rate ratios (IRR) are calculated for Adults with MDD versus Adults without MDD

- Adults with MDD were **less likely to live with someone else** (OR: 0.61; p<0.001) versus adults without MDD (**Table 2**)

Conclusions

- This real-world analysis highlights that **MDD may be associated with burdens in multiple aspects of one's life,** including household composition, marital status, human capital, and overall wellbeing
- Future studies are needed to better understand the natural history and longitudinal nature of the impact of MDD throughout the life of individuals

References

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4. Kroenke K, Spitzer RL, Williams JB. The Patient Health Questionnaire-2: validity of a two-item depression screener. Medical care. 2003:1284-1292.