Direct Medical Expenditure and Healthcare Utilization with Mental Disorders among Hispanic Population using Medical Expenditure Panel Survey 2013-2017

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Abstract: This study sought to assess how mental disorders' incidence affects healthcare cost and utilization amongst the U.S. Hispanic population from 2013-2017. Using 2013-2017 Medical Expenditure Panel Survey (MEPS) data, a retrospective database analysis was conducted for the Hispanic population with mental disorders. Study outcomes were mental disorder incidence, healthcare utilization, and healthcare cost among the Hispanic population. All-cause direct medical utilization and expenditures were calculated for the following categories of health care services: inpatient hospitalizations, hospital outpatient visits, emergency room visits, office-based physician visits, home health care visits, and prescription medications. From the MEPS data, 4,122 respondents with a mental disorder (weighted sample size: 4,789,634) and 30,312 without a mental disorder (weighted sample size: 33,893,665) were identified. A significant trend appeared through the Generalized Linear Model (GLM) with gamma distribution and log-link function. The mental disorder group had markedly higher adjusted expenditures on emergency room visits, hospital outpatients, physician visits, home healthcare, and prescriptions compared to non-mental disorder patients ($p<0.001$). Similarly, indirect medical expenditures had the mental disorder group spending $110.7 more than the non-mental disorder group ($p<0.001$). Incremental indirect cost was $26.9 (95% CI: 57.8-163.6, $p<0.001$) and incremental cost for overall adjusted expenditures was $ 2,958.5 (95% CI: 2,386.0-3,530.9, $p<0.001$). These results underscore that mental health disorders in the Hispanic population lead to significantly higher mental-health-related medical expenditure and healthcare utilization. Further research is required to characterize better the total medical expenditure and healthcare utilization cost for all health conditions by Hispanic mental health patients.

Keywords: Mental Disorders, US Hispanic Population, Healthcare Cost, Healthcare Utilization.

INTRODUCTION

A mental disorder is a health condition that is characterized by abnormal thoughts, emotions, perceptions, and behaviors leading to challenges functioning in normal daily activities such as work, social, or family activities [1-3]. Mental disorders are consequential health concerns that impact millions worldwide [1]. It is the third leading disease or disorder on the global disability-adjusted life year, which calculates the sum of potential years of life lost to premature mortality and productive years lost to disability [4,5]. The World Health Organization estimated in 2014 that a mental disorder afflicted 10% of the world's population, and 25% of the world's adult population will develop a mental disorder in their lifetime [1,6]. In the United States, 19% of adults have a mental disorder, and 50% of adults will develop one or more mental disorders in their lifetime [3,7]. Mental disorders are also considered a leading contributor to years lived with disability [8]. They can lead to a wide range of disabilities and problems in social, work, and family activities [3]. Patients with mental disorders that receive treatment can live everyday lives with minimal disruptions [3]. Unfortunately, most adults with mental disorders do not receive treatment [9]. This stark finding is heightened in patients who are black or Hispanic, young, uninsured, and have low socioeconomic status [9].

The Hispanic demographic accounts for 18% of the U.S. population and is rapidly growing [10,11]. Projections estimate that by 2060, Hispanics will make up more than 30% of the U.S. population [10]. This is noteworthy especially when considering that 15% of the U.S. Hispanic population suffered from a mental disorder in 2016 and is continuing to increase [12,13]. There is also growing evidence connecting social and economic inequality to poor mental health, and Hispanics remain at lower education attainment rates than other racial or ethnic groups [14,15]. Only 67% of Hispanics have completed high school compared to 93% of non-Hispanic whites [15]. Further, the median household income for the Hispanic population is $17,802 less than that of non-Hispanic whites [16]. These socioeconomic disparities contribute to the lack of healthcare utilization amongst the Hispanic

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population and may cause long-lasting consequences from mental disorders [13].

Healthcare utilization by the Hispanic population is the lowest among all races and ethnicities in the U.S [17]. Hispanic patients were only 58% likely to visit a physician while non-Hispanic whites were 69% likely [17]. This finding is magnified in mental healthcare, as only 10% of Hispanics with mental disorders receive treatment from a general healthcare provider, and only 5% receive treatment from a mental health specialist [8].Contributing to this detriment, 27% of the Hispanic population does not have health insurance, significantly higher than non-Hispanic whites at 10% uninsured, and health insurance is a critical factor to receiving health services in the U.S. [18] More than 80% of mental disorder expenditures are covered by some form of insurance [19].

This study seeks to evaluate the direct medical expenditure and healthcare utilization of Hispanic patients with mental disorders compared to Hispanic patients without mental disorders in the U.S. to identify the disparities between these demographics. This study's findings may impact how direct medical expenditures and healthcare utilization relate to mental health treatment and highlight changes required to address mental disorders in the Hispanic population better.

METHODS

Data Source

Data analysis was conducted retroactively for the years 2013-2017 using the Medical Expenditure Panel Survey (MEPS) which collects wholistic data on personal health care experiences using a sample representative of Americans [20]. MEPS measures a variety of healthcare-related costs and demographics including health insurance coverage, payment source for noninstitutionalized citizens, estimates of health status, employment, and satisfaction with care [21]. To create a representative sample of noninstitutionalized citizens, a new group of households is chosen each year from the group of households that answer the past year's National Health Interview Survey [21]. There are three components to MEPS: the Household Component (HC), the Insurance Component (IC), and the Medical Provider Component (MPC) [22]. HC is collected using computer-assisted personal interviewing (CAPI) technology to conduct 5 interviews across 2 years with individuals and caregivers [21,23]. HC data from the 2013-2017 MEPS public use files created a large sample size focusing on demographic information, direct medical expenditure, and health care utilization. Since MEPS data is publicly available and all data is de-identified, Institutional Review Board (IRB) approval was waived for this study.

Patient Selection and Outcome Measures

Patient samples include patients over the age of 18, those diagnosed with a mental disorder, and those with at least one health care event. For this research, health care events were defined as inpatient, outpatient, prescription medication use, home health care, and physician visit. Direct medical expenditure and health care utilization were calculated using inpatient hospitalization, outpatient hospital visits, physician office visits, home health care, and prescription medication data. Direct medical expenditure is the sum of yearly direct health care services payments including out-of-pocket payments and payments by insurance companies. Utilization refers to the number of reported events. To identify health care utilization and medical expenditure regarding mental disorders, the International Classification of Diseases was referenced. Using the Healthcare Consumer Price Index from the Bureau of Labor Statistics, expenditures were adjusted to 2017 costs [24].

Statistical Analysis

The independent variable was the Hispanic population with a mental disorder compared to those without a mental disorder. The dependent variable was health care utilization and direct medical expenditure regarding the mental disorder. The modified Park Test identified the appropriate model, and the cost of illness between mental disorder and non-mental disorder patients was calculated with a two-part model to account for excess zero-expenditure [25]. Direct medical expenditures for both demographic groups were compared using regression with gamma distribution and log-link function using a generalized linear model. A log regression model estimated the direct medical expenditure probability and a generalized linear model with gamma distribution and a log link estimated non-zero direct medical expenditures. To analyze health care utilization, a general linear model with Poisson distribution and log function was used. Zero-inflated Poisson regression accounted for excess or zero count hospital events. To calculate incremental expenditure and utilization, the difference between direct medical expenditure, or

health care utilization of mental disorder population compared to non-mental disorder population, was used.

This analysis sought to represent the national population and did so through various methods. MEPS data was weighted against the greater population and national estimates were created from individual weights in the MEPS data. 'Svy' procedure from Stata and 'Proc survey' procedure from SAS created point estimates and standard error for the weight of the nationally-representative population [26]. Pooled person weight was divided by 5 because of the 5-year MEPS data used. SAS version 9.4 (SAS Institute Inc., Cary, NC) and Stata version 15 (Stata Corp. LP, College Station, TX) were used [27].

RESULTS

From 2013-2017, MEPS data identified 166,098 respondents with an individual weight which represents a weighted sample size of 320,701,450. About 93.3% of respondents were Hispanic white. Hispanic respondents older than 18 were categorized by the presence of mental disorders. Figure **1** displays the 4,122 respondents with a mental disorder (weighted sample size: 4,789,634) and 30,312 without a mental disorder (weighted sample size: 33,893,665). The mean age of respondents who met the criteria was 41.4 with a standard deviation of 0.2 years. Patients with mental disorders were older than those without a mental disorder by about 5 years (45.4 vs. 40.8, p<0.001).

Overall, 46.8% of patients had private insurance, slightly more than those with public insurance (40.45%). Those with a mental disorder tended to be of low income (48.8%) compared to the non-mental disorder group (42.1%) (p<0.001). The mental disorder group had a higher rate of chronic disease and cancer (p<0.001)

Patients suffering from a mental disorder also spent more on all-cause unadjusted medical expenditures. Per patient, the mental disorder group spent $9,187.3 (95% CI: 8,292.4-10,082.3) about $6,000 more than the non-mental disorder group which spent $3,056.0 (95% CI: 2,862.8-3,249.1) (p<0.001).

The GLM with gamma distribution and log-link function continued this trend as the mental disorder group had significantly higher adjusted expenditures on emergency room visits, hospital outpatients, physician visits, home healthcare, and prescriptions compared to non-mental disorder patients (p<0.001). Indirect medical expenditures were again higher for patients in the mental disorder group at $308.9 compared to $198.2 for the non-mental disorder group (p<0.001).

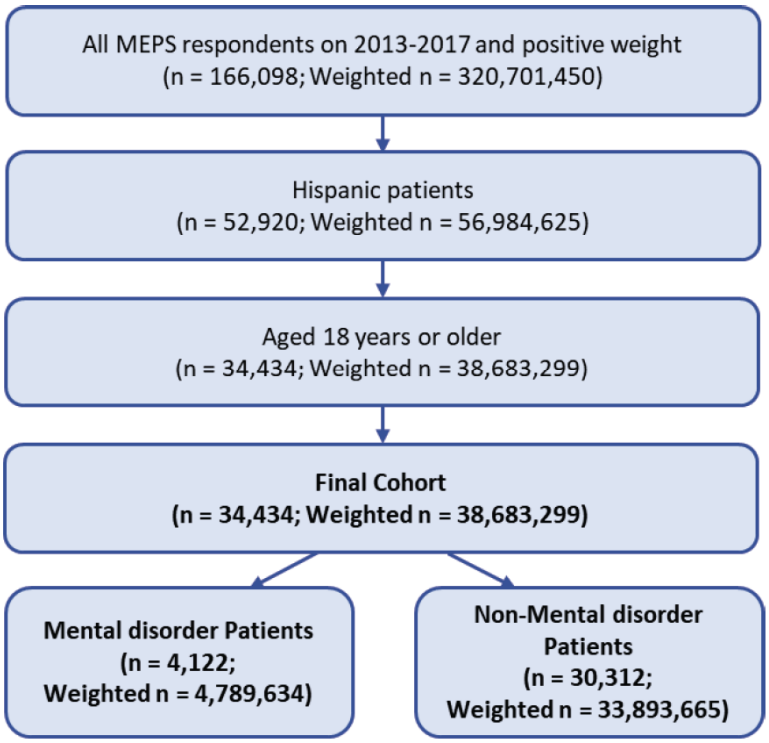

Figure 1: Patient Attrition.

Table 1: Demographics and Clinics Characteristics of Hispanic Patients with/without Mental Disorder

	Overall			Mental disorder			Non-Mental disorder			P-value[2]
	n	Weighted N	Weighted %	n	Weighted N	Weighted %	n	Weighted N	Weighted %	
Total	34,434	38,683,299	100.0%	4,122	4,789,634	100.0%	30,312	33,893,665	100.0%	
Age										
Mean (SD)	41.39(0.2)			45.37(0.48)			40.82(0.2)			0.000
18-44	20,513	23,645,301	61.1%	1,917	2,459,781	51.4%	18,596	21,185,520	62.5%	0.000
45-64	10,449	11,037,394	28.5%	1,543	1,585,937	33.1%	8,906	9,451,457	27.9%	
≥65	3,472	4,000,604	10.3%	662	743,915	15.5%	2,810	3,256,688	9.6%	
Race/ethnicity										
White	32,321	36,077,933	93.3%	3,734	4,319,997	90.2%	28,587	31,757,936	93.7%	0.001
Black	764	922,510	2.4%	123	155,537	3.2%	641	766,972	2.3%	
Others	1,349	1,682,856	4.4%	265	314,099	6.6%	1,084	1,368,757	4.0%	
Region										
Northeast	5,015	5,345,668	13.8%	840	846,465	17.7%	4,175	4,499,203	13.3%	0.000
Midwest	3,019	3,429,659	8.9%	432	567,051	11.8%	2,587	2,862,609	8.4%	
South	12,215	14,475,561	37.4%	1,180	1,417,844	29.6%	11,035	13,057,717	38.5%	
West	14,185	15,432,411	39.9%	1,670	1,958,274	40.9%	12,515	13,474,137	39.8%	
Insurance Type										
Any private	13,736	19,051,606	49.3%	1,514	2,240,500	46.8%	12,222	16,811,106	49.6%	0.000
Public only	10,290	9,532,215	24.6%	1,976	1,934,604	40.4%	8,314	7,597,611	22.4%	
Uninsured	10,408	10,099,478	26.1%	632	614,530	12.8%	9,776	9,484,949	28.0%	
Marital Status										
Married	15,802	18,159,043	46.9%	1,560	1,897,929	39.6%	14,242	16,261,114	48.0%	0.000
Unmarried	18,632	20,524,256	53.1%	2,562	2,891,705	60.4%	16,070	17,632,551	52.0%	
Education Attainment										
Less than high school	13,674	12,482,526	32.3%	1,577	1,408,720	29.4%	12,097	11,073,806	32.7%	0.000
High school	9,640	11,022,960	28.5%	1,039	1,154,950	24.1%	8,601	9,868,010	29.1%	
College or higher	11,120	15,177,813	39.2%	1,506	2,225,964	46.5%	9,614	12,951,848	38.2%	
Family Income[1]										
Negative/poor/low	18,495	16,614,909	43.0%	2,464	2,339,484	48.8%	16,031	14,275,425	42.1%	0.000
Middle	10,508	12,750,813	33.0%	1,077	1,386,650	29.0%	9,431	11,364,163	33.5%	
High	5,431	9,317,577	24.1%	581	1,063,500	22.2%	4,850	8,254,077	24.4%	
Current Smoking										
Yes	7,653	8,582,972	22.2%	1,044	1,145,856	23.9%	6,609	7,437,116	21.9%	0.048
No	26,781	30,100,327	77.8%	3,078	3,643,778	76.1%	23,703	26,456,549	78.1%	
Health Status										
Excellent/ Very good	16,807	20,659,046	53.4%	1,134	1,585,296	33.1%	15,673	19,073,750	56.3%	0.000
Good	11,506	12,092,515	31.3%	1,349	1,574,129	32.9%	10,157	10,518,387	31.0%	
Fair/poor	6,121	5,931,738	15.3%	1,639	1,630,209	34.0%	4,482	4,301,529	12.7%	
Diabetes										
Yes	3,786	3,941,341	10.2%	875	904,965	18.9%	2,911	3,036,376	9.0%	0.000
No	30,648	34,741,959	89.8%	3,247	3,884,669	81.1%	27,401	30,857,290	91.0%	
Hypertension										
Yes	8,610	9,347,037	24.2%	1,817	1,962,736	41.0%	6,793	7,384,301	21.8%	0.000
No	25,824	29,336,263	75.8%	2,305	2,826,898	59.0%	23,519	26,509,364	78.2%	
High cholesterol										
Yes	8,641	9,485,716	24.5%	1,690	1,824,483	38.1%	6,951	7,661,234	22.6%	0.000
No	25,793	29,197,583	75.5%	2,432	2,965,151	61.9%	23,361	26,232,432	77.4%	
Heart disease										
Yes	3,173	3,546,103	9.2%	886	982,677	20.5%	2,287	2,563,426	7.6%	0.000
No	31,261	35,137,196	90.8%	3,236	3,806,957	79.5%	28,025	31,330,240	92.4%	

(Table 1). Continued.

	Overall			Mental disorder			Non-Mental disorder			P-value[2]
	n	Weighted N	Weighted %	n	Weighted N	Weighted %	n	Weighted N	Weighted %	
Arthritis										
Yes	5,208	5,673,592	14.7%	1,459	1,526,506	31.9%	3,749	4,147,086	12.2%	0.000
No	29,226	33,009,707	85.3%	2,663	3,263,128	68.1%	26,563	29,746,579	87.8%	
Cancer										
Yes	1,256	1,493,694	3.9%	296	356,626	7.4%	960	1,137,068	3.4%	0.000
No	33,178	37,189,605	96.1%	3,826	4,433,008	92.6%	29,352	32,756,598	96.6%	
Year										
2013	7,472	7,330,196	18.9%	932	916,944	19.1%	6,540	6,413,252	18.9%	0.238
2014	6,879	7,536,445	19.5%	832	977,031	20.4%	6,047	6,559,414	19.4%	
2015	7,147	7,748,234	20.0%	900	1,027,695	21.5%	6,247	6,720,539	19.8%	
2016	7,113	7,946,669	20.5%	809	959,184	20.0%	6,304	6,987,485	20.6%	
2017	5,823	8,121,755	21.0%	649	908,779	19.0%	5,174	7,212,976	21.3%	

[1]low = family income < 200% of poverty line; middle = family income 200%–400% of poverty line; high = family income > 400% of poverty line.
[2]P-values were obtained from Chi2 by comparing the prevalence of depression between cancer survivors and non-cancer survivors.
Matched sample will be selected.

Table 2: Direct and Indirect Mental Expenditures

Category[1]	Mental Disorder ($)				Non-Mental Disorder ($)				Incremental cost (Mental Disorder - Non-Mental Disorder) ($)				
	Mean	SE	Lower 95% CI	Upper 95% CI	Mean	SE	Lower 95% CI	Upper 95% CI	Mean	SE	Lower 95% CI	Upper 95% CI	P-value
Unadjusted cost													
Overall	9,187.3	455.0	8,292.4	10,082.3	3,056.0	98.2	2,862.8	3,249.1	6131.4	441.8	5262.2	7000.5	0.000
Direct cost	8,827.0	455.3	7,931.3	9,722.7	2,861.3	94.3	2,675.7	3,046.9	5965.7	442.3	5095.7	6835.8	0.000
Inpatient	2,094.4	243.8	1,614.8	2,574.0	855.8	52.0	753.5	958.1	1238.6	241.0	764.4	1712.7	0.000
Emergency room	380.4	32.6	316.2	444.6	148.3	8.4	131.8	164.8	232.1	33.8	165.6	298.6	0.000
Hospital outpatient	552.3	83.0	388.9	715.7	181.8	15.3	151.8	211.9	370.5	83.4	206.4	534.6	0.000
Physician's visits (Office based visits)	2,151.5	118.1	1,919.2	2,383.8	701.6	32.8	637.0	766.2	1449.9	124.2	1205.7	1694.1	0.000
Home health care and other	777.5	110.0	561.1	993.9	193.8	20.5	153.4	234.1	583.7	106.1	374.9	792.4	0.000
Prescription	2,440.0	135.3	2,173.8	2,706.3	545.5	25.1	496.1	594.8	1894.6	131.2	1636.6	2152.6	0.000
Indirect cost	360.3	33.5	294.4	426.2	194.7	9.8	175.5	213.9	165.6	33.5	99.7	231.5	0.000
Adjusted cost													
Overall	6,500.1	281.5	5,946.4	7,053.8	3,541.6	107.1	3,330.9	3,752.3	2958.5	291.0	2386.0	3530.9	0.000
Direct cost	6,208.6	282.6	5,652.6	6,764.6	3,365.5	106.6	3,155.8	3,575.2	2843.1	291.4	2269.8	3416.3	0.000
Inpatient	1,129.7	96.2	940.5	1,318.9	975.2	54.6	867.8	1,082.6	154.5	106.8	-55.6	364.5	0.149
Emergency room	263.1	19.9	224.0	302.1	159.8	8.3	143.4	176.2	103.3	20.2	63.4	143.1	0.000
Hospital outpatient	360.5	44.1	273.9	447.2	196.8	14.5	168.4	225.3	163.7	43.7	77.7	249.6	0.000
Physician's visits (Office based visits)	1,685.5	122.9	1,443.7	1,927.3	764.7	31.4	702.9	826.6	920.8	126.2	672.6	1168.9	0.000
Home health care and other	366.4	38.0	291.7	441.1	206.0	20.6	165.5	246.4	160.5	36.7	88.3	232.6	0.000
Prescription	2,875.2	335.3	2,215.6	3,534.8	893.0	73.9	747.7	1,038.3	1982.2	300.1	1391.8	2572.6	0.000
Indirect cost	308.9	26.4	257.1	360.8	198.2	8.7	181.1	215.4	110.7	26.9	57.8	163.6	0.000

[1]Includes patients with zero-cost for each category.
CI: confidence interval, mental disorder: Chronic Obstructive Pulmonary Disease, SE: Standard error.

Table 3: Healthcare Utilization

Category[1]	Mental Disorder ($)				Non-Mental Disorder ($)				Incremental cost (Mental Disorder - Non-Mental Disorder) ($)				
	Mean	SE	Lower 95% CI	Upper 95% CI	Mean	SE	Lower 95% CI	Upper 95% CI	Mean	SE	Lower 95% CI	Upper 95% CI	P-value
Unadjusted cost													
Inpatient	0.16	0.01	0.13	0.18	0.06	0.00	0.06	0.07	0.10	0.01	0.07	0.12	0.000
Emergency room	0.36	0.02	0.33	0.40	0.14	0.00	0.13	0.15	0.22	0.02	0.19	0.26	0.000
Hospital outpatient	0.42	0.05	0.33	0.51	0.22	0.01	0.19	0.25	0.20	0.05	0.11	0.29	0.000
Physician' visits (Office based visits)	10.44	0.40	9.65	11.22	3.09	0.09	2.92	3.27	7.34	0.40	6.57	8.12	0.000
Home health care	2.12	0.36	1.42	2.82	2.00	0.36	1.28	2.72	0.12	0.20	-0.27	0.51	0.558
Prescription	24.38	1.25	21.92	26.84	5.61	0.17	5.29	5.94	18.76	1.21	16.39	21.14	0.000
Adjusted cost													
Inpatient	0.09	0.01	0.08	0.10	0.07	0.00	0.06	0.07	0.02	0.01	0.01	0.03	0.000
Emergency room	0.23	0.01	0.21	0.26	0.15	0.00	0.14	0.16	0.09	0.01	0.06	0.11	0.000
Hospital outpatient	0.30	0.04	0.23	0.37	0.19	0.01	0.17	0.21	0.11	0.04	0.03	0.18	0.004
Physician' visits (Office based visits)	6.72	0.24	6.25	7.19	3.35	0.08	3.19	3.52	3.37	0.26	2.86	3.88	0.000
Home health care	0.98	0.17	0.64	1.31	1.08	0.19	0.70	1.47	-0.11	0.10	-0.30	0.09	0.278
Prescription	12.93	0.47	12.01	13.84	6.42	0.14	6.15	6.69	6.51	0.47	5.58	7.44	0.000

[1]Includes patients with zero-cost for each category.
CI: confidence interval, mental disorder: Chronic Obstructive Pulmonary Disease, SE: Standard error.

Incremental indirect cost was $26.9 (95% CI: 57.8-163.6, p<0.001) and incremental cost for overall adjusted expenditures was $ 2,958.5 (95% CI: 2,386.0-3,530.9, p<0.001). Patients with a mental disorder had significantly higher healthcare utilization across their average number of inpatient visits, emergency room visits, hospital outpatient visits, physician visits, and prescriptions (p<0.001). This stark trend continues with unadjusted and adjusted estimates with demo and clinical covariates.

DISCUSSION

The 5-year household component MEPS data used for this study included 34,434 Hispanic patients aged 18 years or older, with an average age of 41.4 years, representing a weighted sample of 38.7 million people. About 93.3% of the sample population identified themselves as Hispanic White. Of the sample population, 4,122 patients, with an average age of 45.4 years, identified as having mental health disorders, representing a weighted sample size of 4.8 million people. The other 30,312 patients identified as having no mental health disorders had an average age of 40.8 years and represent a weighted sample size of 33.9 million people.

There were large socioeconomic and health status discrepancies between the two groups. Of note, a higher percentage of Hispanic patients with mental health disorders had a low family income and poor perceived health status than Hispanic patients without mental health disorders. A higher percentage of Hispanic patients with mental health disorders had comorbid conditions such as diabetes, hypertension, high cholesterol, heart disease, arthritis, and cancer compared to Hispanic patients without mental health disorders. This finding is consistent with previous studies that exhibit how patients with mental health disorders have a higher risk of developing comorbidities [28].

Prior studies have characterized how patients with mental health disorders experience higher medical expenditure and healthcare utilization compared to patients without mental health disorders [29-32]. However, limited information is available regarding medical expenditure and healthcare utilization among the Hispanic population with mental health disorders. This study discovered that overall unadjusted metal health-related expenditure is significantly higher in Hispanic patients with mental health disorders than Hispanic patients without mental health disorders. Hispanic patients with mental health disorders were found to have higher overall mental health-related expenditure in inpatient visits, emergency room visits,

hospital outpatient visits, physician visits, home health care visits, and prescription costs. For the mental disorder group, prescription cost was the highest expenditure, followed by physician visits and inpatient visits.

Healthcare utilization is significantly higher in Hispanic patients with mental health disorders than Hispanic patients without mental health disorders. Prescription drugs and physician visits accounted for most of the cost associated with healthcare utilization. A higher percentage of the mental disorder group had either private or public insurance and had a higher education level compared to the non-mental disorder group. Prior studies have shown that health insurance and education are factors that contribute to increased healthcare utilization [33,34].

LIMITATIONS

Possible limitations to the interpretation of the results include the nature of the MEPS database. MEPS does not provide information on the severity of the mental disorder, which may impact estimates. It also cannot provide a reasonable causal relationship between mental disorders and related comorbidities. Costs associated with comorbidities related to mental disorder were excluded and only direct mental disorder related costs were considered. Recall bias and under-reporting are possible limitations because MEPS data is self-reported. Because MEPS is a cross-sectional database, it is not possible to estimate overall lifetime patient-level expenditures. All patients with a mental disorder from 2013-2017 were pooled to create an adequate sample size with reliable estimates. Samples from consecutive years may not be independent because the samples are drawn from the same geographic region for two consecutive years. Still, MEPS documentation asserts the validity of all observations and recommends keeping the observations independent because each year's data is designed to be nationally representative. SAS and Stata procedures for complex survey sample designs were employed to ensure accurate standard errors. MEPS only has one household component, non-institutionalized community-dwelling residents, making it the only household component included in this study which limits the generalizability of research findings to the U.S. population.

CONCLUSION

In conclusion, mental health disorders in the Hispanic population result in significantly higher mental health-related medical expenditure and healthcare utilization. These higher expenditures exclude medical expenditures associated with comorbidities related to mental disorders. The data from this study highlights the significant financial burden experienced by Hispanic patients with mental health problems, a population already burdened by a high poverty level. Additional research is needed to understand the total medical expenditure and healthcare utilization cost spent to treat all health conditions by Hispanic mental health patients further. Understanding the total financial cost of treating mental health disorders and coexisting comorbidities is essential for distinguishing the challenges this population experiences when receiving necessary care. This study recognizes the high financial cost associated with mental health disorders in the Hispanic population and, potentially, for other ethnic populations-and calls for the development of improved policies to provide more cost-effective healthcare. Such policies will be critical in the United States as the Hispanic and Hispanics with mental health populations grow.

COMPLIANCE WITH ETHICAL STANDARDS

Institutional Review Board (IRB) approval at UTEP was waived for this study because MEPS data is publicly available and all data is de-identified.

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CONFLICT OF INTEREST

The authors declare they have no conflicts of interest.

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