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DATA HIGHLIGHT
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Racial and Ethnic Disparities in Mental Health Among Diverse Groups of Medicare Advantage Beneficiaries

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Introduction

The U.S. Census Bureau estimates that by 2060, the racial and ethnic minority population in the U.S. is projected to rise to 56 percent of the total population, up from 38 percent in 2014.[1,2] By 2050, 39 percent of the older population (65 years of age and older) is projected to be a minority, up from 21 percent in 2012.[1,2] Medicare beneficiaries who are racial and ethnic minorities face persistent health disparities, including disparities in numerous patient-reported outcomes that have long been used as quality indicators – from experiences with care to functional health status.[3,4,5] As racial and ethnic minorities become a greater proportion of the U.S. population, the importance of addressing these disparities in the Medicare population will only continue to grow.

Despite these important demographic changes, there are limited national-level data on how patient-reported physical and mental health functioning varies across many racial and ethnic groups, particularly smaller racial and ethnic groups. Previous studies on racial and ethnic disparities in Medicare have focused on differences between Black and White beneficiaries, and to some extent have included Hispanic beneficiaries.[6] Studies do not consistently compare all three of these groups, and smaller racial and ethnic groups may be excluded entirely because of sample size limitations.[6]

This data highlight presents findings from the Medicare Health Outcomes Survey (HOS) using pooled data from the three most recent fielded baseline surveys: Cohorts 17, 18, and 19 (2014-2016). The collection of race and ethnicity data in the HOS makes it possible to examine both the physical and mental health outcomes of beneficiaries from many smaller racial and ethnic groups, including those who self-identify as American

Key Findings:

- Relative to other races, American Indian and Alaska Native as well as Native Hawaiian or Other Pacific Islander (NHOPI) beneficiaries generally reported worse mental health status across multiple indicators related to depression and depression symptoms, days of activities missed because of poor physical and mental health, and mental health functioning.
- Among all ethnicities, multiethnic Hispanic beneficiaries generally reported worse mental health status than non-Hispanic beneficiaries or those reporting a single ethnicity.
- There were considerable variations within Asian and NHOPI race groups, with some detailed Asian and NHOPI groups reporting results notably different than the larger group. Important variations were also observed among Hispanic ethnicities.
- Despite some exceptions, particularly among smaller racial or ethnic groups, the majority of observed differences were significant.
- The findings suggest that viewing results for only larger race or ethnicity groups – such as all Asians, all NHOPI, or all Hispanic beneficiaries – may obscure important detailed group differences, reinforcing the importance of reporting more granular data.

Data Source: Medicare Health Outcomes Survey (HOS), 2014-2016 Baseline

Indians or Alaska Natives (AI/AN), Asians, and Native Hawaiian or Other Pacific Islanders (NHOPI).

Fielded annually since 1998, the HOS collects self-reported health status information at baseline and follow-up from a nationally representative sample of Medicare Advantage (MA; i.e., Part C or Medicare Managed Care) beneficiaries. These data have been used to assess changes in the physical and mental health outcomes, and health-related quality of life, of MA beneficiaries over time. In 2013, the HOS became the first large scale Centers for Medicare & Medicaid Services (CMS) survey to collect data using the expanded, detailed race and ethnicity categories in the Department of Health and Human Services (HHS) data collection guidelines.[7] The HOS also continues to gather data on a number of key indicators related to self-reported mental health status: receipt of a diagnosis of depression, reporting of a positive depression screen (based on depression symptoms), days of activities missed due to poor physical and mental health, and the Veterans RAND 12-Item Health Survey Mental Component Score (VR-12 MCS)—a 0-100 standardized score that reflects mental health functioning. These mental health indicators are of special salience in Medicare populations because of the under-diagnosis of depression among older adults.[8,9]

A prior HOS data brief examined the physical health status of Asians and NHOPI, using expanded categories of race and ethnicity.[10] (For further details on the expanded categories of race and ethnicity, please refer to the "Definitions" section below). Building on this prior work, the current analysis uses the expanded categories to describe racial and ethnic differences in the mental health status of Medicare Advantage beneficiaries across many smaller racial and ethnic groups. For each racial and ethnic group, results are reported as percentages (for receipt of depression diagnosis and positive depression screen) or averages (for average number of days of activities missed and average VR-12 MCS). The results reflect all respondents, regardless of age and disability. For all comparisons of differences between racial and ethnic groups, a Bonferroni correction was used to interpret *P* values.

Results

Distribution of Race and Ethnicity

Among all respondents reporting race during the study period, more than 3,800 (0.59% of all respondents) identified as AI/AN, and more than 22,000 (3.38%) identified as Asian, inclusive of seven detailed Asian groups: Asian Indian, Chinese, Japanese, Korean, Filipino, Vietnamese and Other Asian (Table 1). The largest detailed Asian group was Chinese (0.88%), while the smallest was Other Asian (0.23%). More than 2,700 (0.42%) beneficiaries identified themselves as NHOPI. The largest detailed NHOPI group was Other Pacific Islander (0.28%), while the smallest was Guamanian or Chamorro (0.01%).

More than 78,000 (12.79%) beneficiaries identified as Hispanic, with the largest detailed Hispanic group being Mexican (4.30%) and the smallest being Cuban (0.73%).

Table 1. Distribution of Race and Ethnicity, 2014–2016

White	523,137	79.47
Black	82,852	12.59
American Indian or Alaska Native	3,862	0.59
Asian	22,246	3.38
Asian Indian	2,971	0.45
Chinese	5,777	0.88
Japanese	2,662	0.40
Korean	1,666	0.25
Filipino	5,473	0.83
Vietnamese	2,159	0.33
Other Asian	1,538	0.23
Native Hawaiian or Other Pacific Islander	2,767	0.42
Native Hawaiian	686	0.10
Guamanian or Chamorro	72	0.01
Samoan	174	0.03
Other Pacific Islander	1,835	0.28
Multiracial[a]	23,406	3.56
Total[b]	**658,270**	**100.00**
Ethnicity		
Not Hispanic	529,903	86.27
All Hispanic Reporting Single Ethnicity	78,563	12.79
Mexican	26,428	4.30
Puerto Rican	25,617	4.17
Cuban	4,457	0.73
Other Hispanic	22,061	3.59
Multiethnic[a]	5,767	0.94
Total[b]	**614,233**	**100.00**

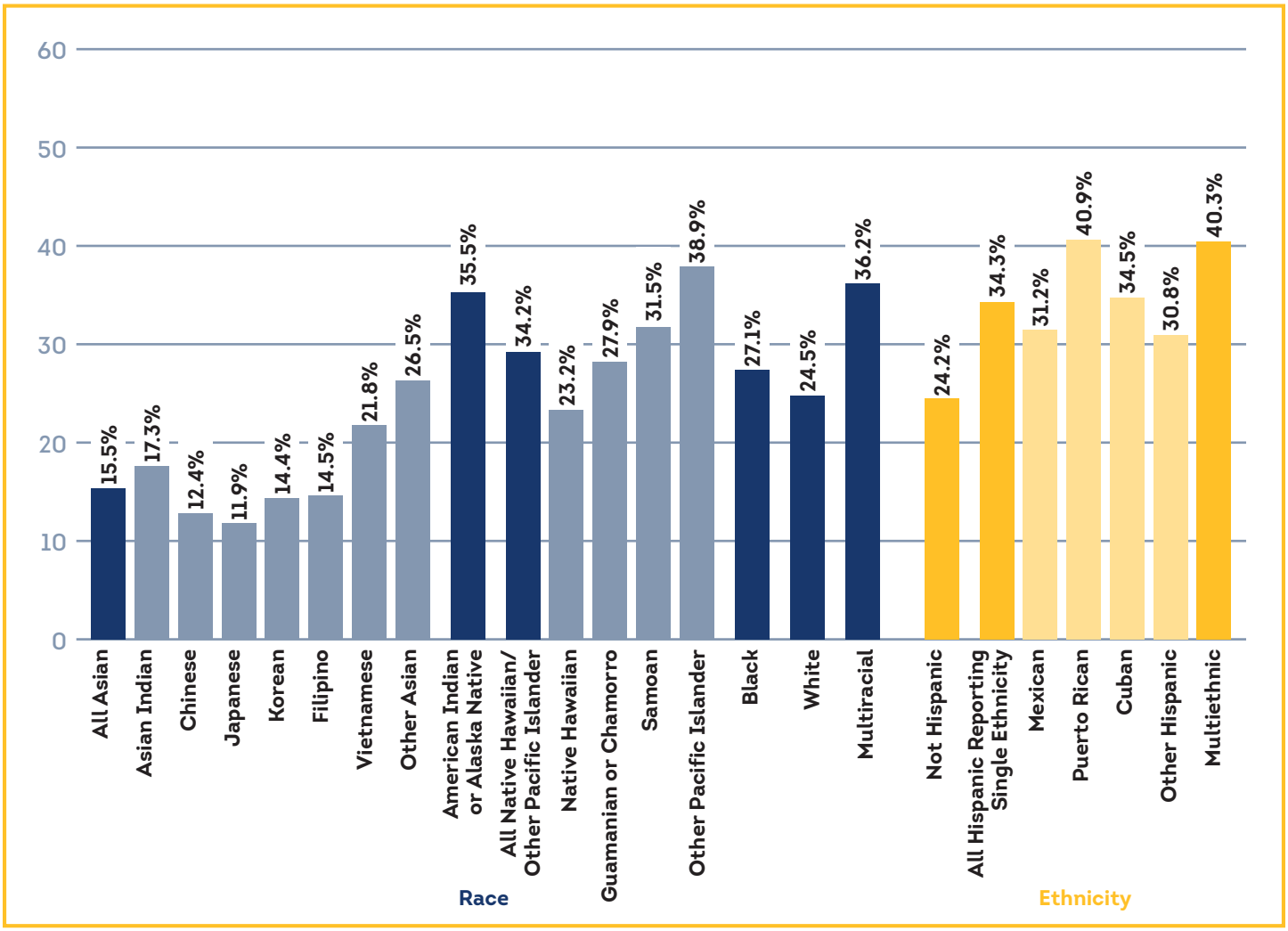
[a] Multiracial or multiethnic refers to beneficiaries self-reporting at least two racial or ethnic groups, respectively.

[b] The "totals" for race versus ethnicity do not precisely match because different numbers of respondents may choose to self-report their race versus their ethnicity.

Depression

The HOS assesses presence of depression by asking, "Has the doctor ever told you that you had depression?" Figure 1 and Column 3 of Table 2 present the percentage of beneficiaries answering "Yes" to this question by race and ethnicity. See Appendix Table A1 for the number of beneficiaries reporting results across all four mental health indicators, by race and ethnicity. Also, see Appendix Tables A2 and A3 for a summary of the differences, and their statistical significance, by race (Table A2) and ethnicity (Table A3).

Figure 1. Percent that Received a Diagnosis of Depression, by Race and Ethnicity



NOTE: Refer to Appendix Tables A2 and A3 for a summary of statistically significant differences among racial and ethnic groups.

In general, AI/AN, multiracial, and some NHOPI beneficiaries reported a significantly higher frequency of depression compared to White beneficiaries and detailed Asian groups. The percentage of NHOPI beneficiaries reporting depression ranged from 23.2% among Native Hawaiians to 38.9% among Other Pacific Islanders; however, with the exception of some Native Hawaiian comparisons, differences within detailed NHOPI groups generally did not attain significance. Asians, with the exception of Other Asians, reported generally lower percentages of depression than other groups, ranging from 11.9% among Japanese to 21.8% among Vietnamese. Some 26.5% of Other Asians reported the presence of depression, which was significantly higher than other Asian groups; however, differences between Other Asians and non-Asian races did not generally attain statistical significance.

Table 2. Distribution of Mental Health Status Indicators, by Race and Ethnicity

Race **Overall (All Races)[c]**	**658,270**	**25.1%**	**13.9%**	**6.2 (9.9)**	**51.1 (12.0)**
White	523,137	24.5%	12.1%	5.8 (9.8)	51.9 (11.8)
Black	82,852	27.1%	22.8%	7.7 (10.4)	48.1 (12.7)
American Indian or Alaska Native	3,862	35.5%	25.6%	9.6 (11.3)	46.3 (13.8)
All Asian	22,246	15.5%	12.7%	4.8 (8.8)	50.0 (11.3)
Asian Indian	2,971	17.3%	14.0%	5.1 (9.1)	51.2 (11.7)
Chinese	5,777	12.4%	11.8%	4.5 (8.6)	48.9 (11.5)
Japanese	2,662	11.9%	6.9%	3.8 (8.4)	53.1 (10.5)
Korean	1,666	14.4%	11.2%	3.9 (7.7)	50.1 (10.3)
Filipino	5,473	14.5%	12.3%	4.7 (8.6)	50.5 (10.9)
Vietnamese	2,159	21.8%	17.7%	5.3 (8.8)	48.0 (10.8)
Other Asian	1,538	26.5%	20.3%	7.6 (10.6)	48.0 (12.2)
All Native Hawaiian or Other Pacific Islander	2,767	34.2%	24.9%	9.0 (11.1)	45.6 (13.3)
Native Hawaiian	686	23.2%	14.8%	6.9 (10.3)	48.7 (12.6)
Guamanian or Chamorro	72	27.9%	21.9%	7.2 (9.9)	48.7 (13.3)
Samoan	174	31.5%	29.8%	9.8 (11.2)	44.7 (12.0)
Other Pacific Islander	1,835	38.9%	28.4%	9.8 (11.3)	44.5 (13.5)
Multiracial	3,406	36.2%	23.6%	9.5 (11.2)	47.7 (13.4)
Ethnicity **Overall (All Ethnicities)[c]**	**614,233**	**25.6%**	**14.2%**	**6.3 (10.0)**	**51.1 (12.1)**
Not Hispanic	529,903	24.2%	12.8%	6.0 (9.8)	51.8 (11.8)
All Hispanic Reporting Single Ethnicity	78,563	34.3%	22.6%	8.5 (11.0)	46.4 (13.2)
Mexican	26,428	31.2%	22.0%	8.0 (10.8)	47.4 (12.9)
Puerto Rican	25,617	40.9%	25.5%	9.7 (11.3)	44.3 (13.5)
Cuban	4,457	34.5%	19.3%	7.5 (10.9)	47.6 (13.3)
Other Hispanic	22,061	30.8%	20.5%	7.8 (10.7)	47.6 (13.0)
Multiethnic	5,767	40.3%	31.1%	11.6 (11.5)	44.8 (13.2)

SD = standard deviation.

[a] A "positive depression screen" is determined using two depression screening questions based on the two-item Patient Health Questionnaire (PHQ-2). A positive depression screen on the PHQ-2 is related to a risk of depressive disorders, and respondents who report a positive depression screen are recommended for further screening. Responses to both questions are scored from 0 to 3. A positive depression screen refers to a score of 3 points or greater on the combined total points.

[b] Veterans-RAND 12-Item Health Survey Mental Component Score. The score ranges from 0-100, with 100 representing better mental health status. A higher score is better.

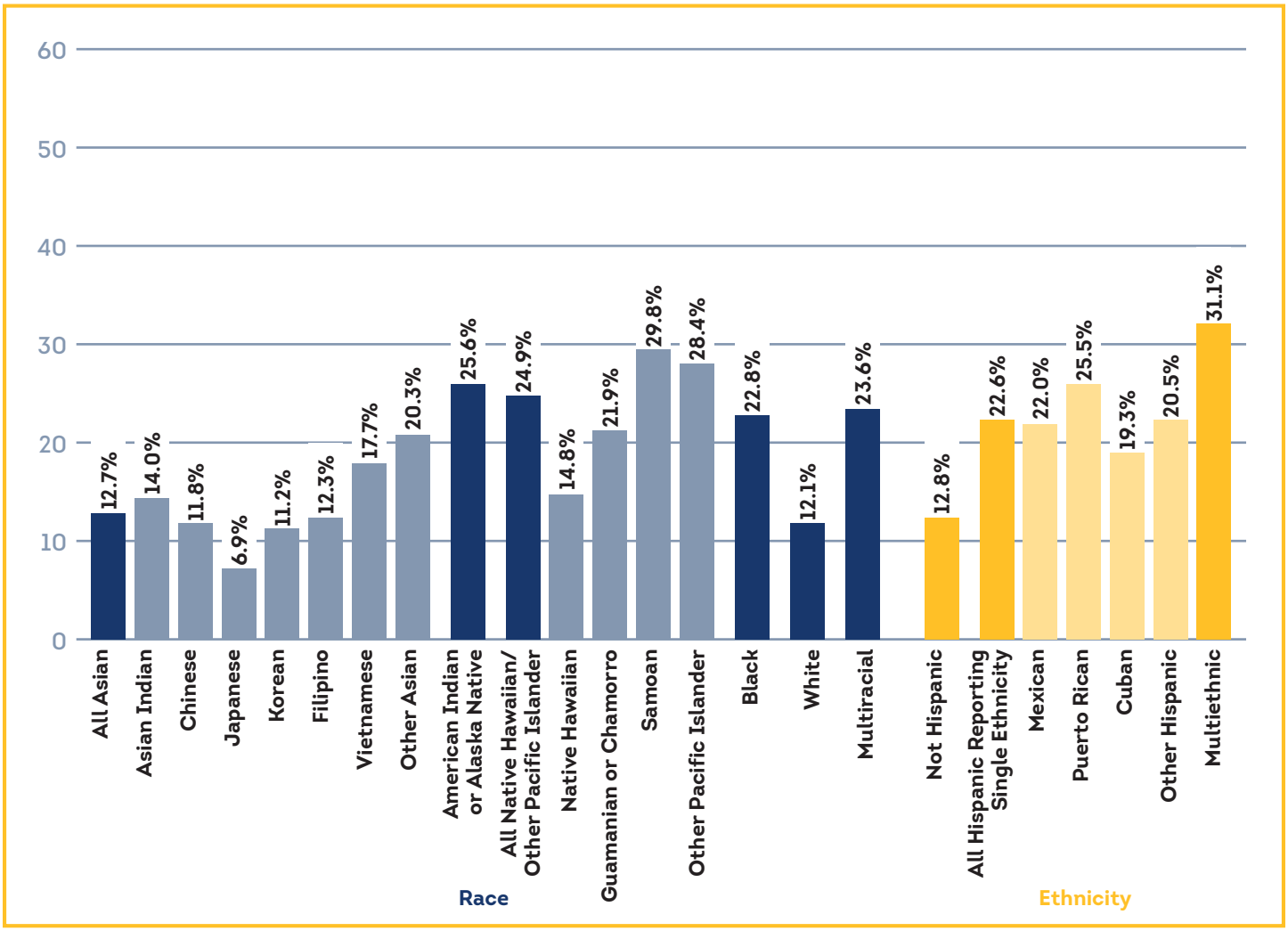
[c] The overall results for all races versus all ethnicities do not precisely match because different sets of respondents may choose to self-report their race versus their ethnicity; these different sets of respondents may report different health results.

Self-reported depression was significantly lower among non-Hispanic beneficiaries than among Hispanic beneficiaries. Among Hispanics, the percentage of depression varied: Puerto Ricans (40.9%) reported a much higher percentage than other ethnic groups (only the Puerto Rican-Multiethnic comparison did not attain significance); reports of depression in all other groups ranged from 30.8%–34.5%.

Positive Depression Screen

The HOS includes two depression screening questions based on the two-item Patient Health Questionnaire (PHQ-2).[11] A positive depression screen on the PHQ-2 is related to a risk of depressive disorders, and people with a positive depression screen are recommended for further screening. Screening for depression is particularly important given the under-diagnosis of depression in older adults.[8] One depression screening question asks how often respondents experienced "little interest or pleasure in doing things" in the past two weeks; the other asks how often respondents felt "down, depressed or hopeless" in the past two weeks. The response choices for each question are the same: "nearly every day," "more than half the days," "several days" and "not at all." All responses are scored from 0 ("not at all") to 3 ("nearly every day"). A positive depression screen occurs when a respondent scores a total of 3 points or more across both items.

Figure 2. Percent with a Positive Depression Screen, by Race and Ethnicity



NOTE: Refer to Appendix Tables A5 and A6 for a summary of statistically significant differences among racial and ethnic groups.

Figure 2 and Column 4 of Table 2 present the percentage of beneficiaries reporting a positive depression screen by race and ethnicity. See Appendix Table A4 for the frequency of responses on the two separate PHQ-2 items. See Appendix Tables A5 and A6 for a summary of the differences, and their statistical significance, by race and ethnicity.

Figure 2 shows the results of detailed racial groups. In general, AI/AN and some NHOPI beneficiaries—Samoans and Other Pacific Islanders—reported significantly higher percentages of a positive depression screen relative to most other groups (Figure 2), although comparisons to some NHOPI groups were not significant (Table A5). For the most part, Asians reported a significantly lower percentage of a positive depression screen than other races, although a few comparisons—especially with the smaller groups of Guamanian or Chamorro and Native Hawaiian beneficiaries – did not achieve significance.

The range of results varied considerably among racial groups. For example, among NHOPI, Samoans (29.8%) and Other Pacific Islanders (28.4%) reported the highest percentages of a positive depression screen; Native Hawaiians reported a significantly lower percentage (14.8%) than Samoans and Other Pacific Islanders. The rate for Native Hawaiians was also lower than that for some detailed Asian groups—Vietnamese and Other Asians—although the differences did not achieve statistical significance. The ranges also varied substantially among detailed Asian groups, from a low of 6.9% (Japanese) to a high of 20.3% (Other Asians); the majority (11 out of 15) of within-Asian group comparisons were significant (Table A5).

Multiethnic beneficiaries reported a significantly higher percentage of a positive depression screen (31.1%), relative to non-Hispanics (12.9%) and those reporting a single Hispanic ethnicity (19.3%–25.5%). Among those reporting a single ethnicity, Puerto Ricans reported the highest percentage of a positive depression screen (25.5%), while Cubans reported the lowest (19.3%; the Cuban-Other Hispanic difference did not attain significance).

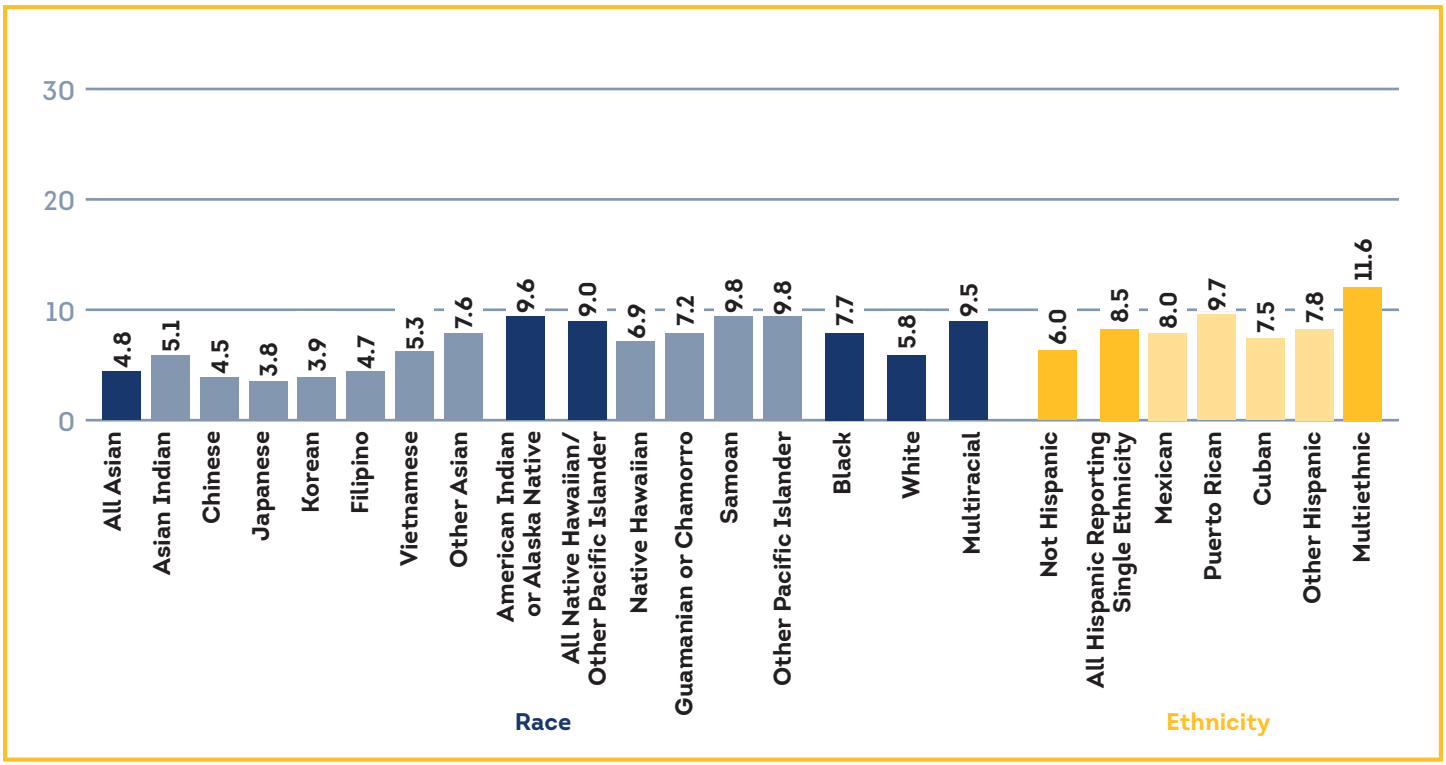
Days of Activities Missed Due to Poor Physical and Mental Health

The HOS asks beneficiaries how many days their poor physical or mental health kept them from their usual activities (such as self-care, work, or recreation) during the last 30 days. More days of activities missed due to poor health might be associated with worse physical and mental health status. Responses can range from 0–30 days. Figure 3 and Column 5 of Table 2 display the average days missed of usual activities due to poor physical and mental health, by race and ethnicity. See Appendix Tables A7 and A8 for a summary of the differences, and their statistical significance, by race and ethnicity.

In general, AI/AN, multiracial, and some NHOPI (i.e., Samoan and Other Pacific Islander) beneficiaries reported a significantly higher average number of days of usual activities missed due to poor health than other races (Figure 3). A few comparisons did not attain statistical significance (Table A7), particularly comparisons against some detailed NHOPI groups. In general, Asians reported significantly fewer average days of activities missed due to poor health compared to other races; however, comparisons against one group—Guamanian or Chamorro (and in one case, Native Hawaiians)—did not usually attain statistical significance.

As with other indicators, the range of results varied within groups. Among NHOPI beneficiaries, the range averaged from 6.9 days among Native Hawaiians to 9.8 days among both Samoans and Other Pacific Islanders. Among Asians, the range averaged from 3.8 days among Japanese beneficiaries to 7.6 days among Other Asian beneficiaries. The majority of within-NHOPI and within- Asian differences were significant (the exceptions primarily included within-NHOPI comparisons to Guamanian or Chamorro beneficiaries, and within-Asian comparisons to Filipino and Korean beneficiaries).

Figure 3. Average Days of Activities Missed Due to Poor Physical and Mental Health, by Race and Ethnicity



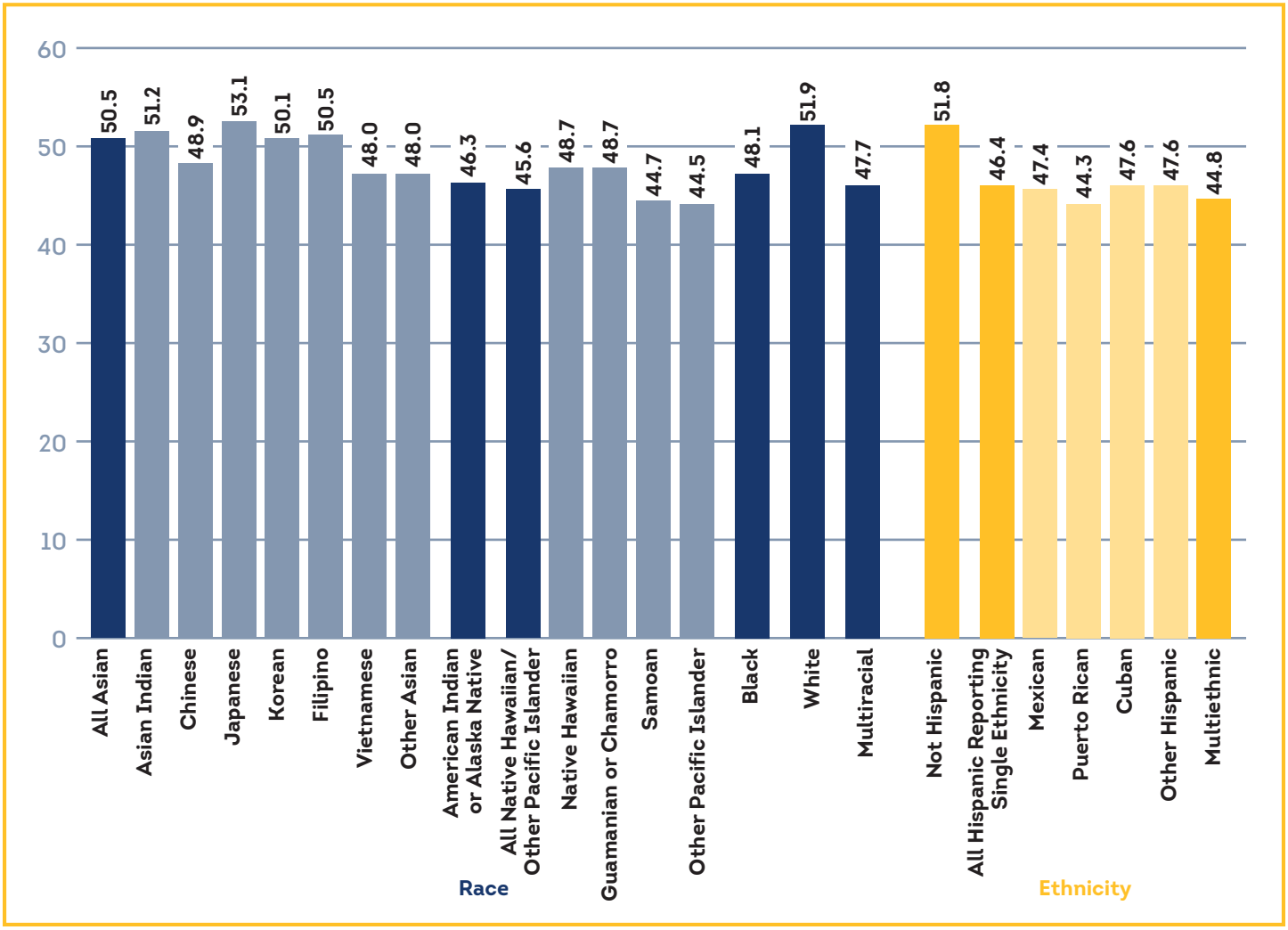
NOTE: Refer to Appendix Tables A7 and A8 for a summary of statistically significant differences among racial and ethnic groups.

Non-Hispanic beneficiaries reported on average the fewest days of activities missed due to poor health (6.0 days), and multiethnic beneficiaries reported the most days missed (11.6 days). Hispanics reporting a single ethnicity reported a range in the middle. Within this range, Puerto Ricans reported the highest number of days of activities missed (9.7 days); the other detailed Hispanic groups—Mexican, Cuban and Other Hispanic—reported similar numbers of days of activities missed (7.5–8). Only one comparison—Cuban-Other Hispanic—did not attain statistical significance.

VR-12 MCS

The HOS includes the Mental Component Score (MCS) from the embedded Veterans RAND 12- Item Health Survey (VR-12). The MCS score reflects mental health status and is calculated on a 0–100 scale, with higher scores representing better mental health. Figure 4 and Column 6 of Table 2 present the average MCS scores for each racial and ethnic group. It should be noted that the VR- 12 score is centered on 50.0, and the results are consistent with the scores of prior HOS cohorts.

Figure 4. Average VR-12 MCS Score, by Race and Ethnicity



NOTE: Refer to Appendix Tables A9 and A10 for a summary of statistically significant differences among racial and ethnic groups.

Additionally, we should note that in administrations of the VR-12 in different populations over the years, the average mental score is often close to 50.0 (see Schalet et al. 2015, who put the VR-12 score in context with comparisons to another major global health measure: the PROMIS global health scale).[12] Appendix Tables A9 and A10 summarize the differences, and their statistical significance, by race and ethnicity.

In general, AI/AN, Black, most detailed NHOPI groups, and multiracial beneficiaries had significantly worse average MCS scores than White beneficiaries and most Asians groups. With the exception of some comparisons against smaller NHOPI or Asian groups (particularly Guamanian or Chamorro, Vietnamese, and Other Asian beneficiaries), these comparisons were statistically significant. With the exception of Vietnamese and Other Asians, Asian beneficiaries had significantly better average MCS scores than most other races, although comparisons to some NHOPI groups (particularly Guamanian or Chamorro) were not significant. Vietnamese and Other Asians reported worse scores than some non-Asian races, although not all differences attained statistical significance.

Important variations were observed within detailed NHOPI and Asian groups. Among NHOPI, worse scores were reported by Other Pacific Islanders (44.5) and Samoans (44.7), compared with higher-scoring Native Hawaiians and Guamanians or Chamorro (48.7 for both)—although the Other Pacific Islander-Samoan comparison was not significant. Among Asian beneficiaries, Japanese beneficiaries had significantly higher average MCS scores—53.1, the highest average MCS score of all races, significantly surpassing Whites (51.9) and Asian Indians (51.2). Vietnamese and Other Asian beneficiaries both had average scores of 48.0.

Non-Hispanic beneficiaries had a significantly better average MCS score (51.8) than multiethnic beneficiaries (44.8) and Hispanics reporting a single ethnicity (range of 44.3–47.6). Among Hispanics reporting a single ethnicity, Cubans and Other Hispanics both reported the best average MCS scores (47.6) and Puerto Ricans reported the worst score (44.3). However, the Mexican-Cuban and Cuban-Other Hispanic differences were not significant.

Conclusion

We found generally consistent differences for all four mental health indicators between racial and ethnic groups among a population of Medicare Advantage beneficiaries. Among all racial groups, AI/AN and most detailed NHOPI groups had worse mental health status than other racial groups. Most Asian beneficiaries reported better mental health status than other racial groups. However, there were a few exceptions to these findings, and there were notable variations within the detailed Asian and NHOPI groups. To take one example, reports of depression ranged widely, with Native Hawaiians reporting lower percentages of depression than White beneficiaries, while Other Pacific Islanders reported the highest percentage of depression among all races. Similarly, while most detailed Asian groups reported the lowest rates of depression, Other Asians were a noticeable exception. While not all comparisons attained statistical significance, particularly among some of the smaller detailed race groups such as Guamanian or Chamorro, in general, the majority of observed differences were significant.

Among Hispanic beneficiaries, multiethnic Hispanics generally reported worse mental health status than non-Hispanics or those reporting a single Hispanic group. However, there was important variation by detailed Hispanic group: in general, Cubans reported the best mental health status while Puerto Ricans reported the worst. While the majority of observed differences were significant, not all ethnicity comparisons attained statistical significance, particularly Cuban-Other Hispanic comparisons.

Our findings are consistent with some prior studies, including relatively recent results that identified similar differences among disaggregated racial and ethnic groups.[9,13] For example, recent results have found that while Asians generally do better than most races across various health indicators, there is still important variation within detailed Asian groups.[13] However, to our knowledge, this data highlight is one of the few analyses that 1) compares all current disaggregated racial and ethnic groups in the same study, 2) is based on a nationally representative sample, and 3) uses the select dimensions of mental health that were assessed. This is particularly important given the role mental health plays in overall health, the under-diagnosis and under-treatment of mental health in older adults, and the fact mental illness, including serious mental illness, in older adults is associated with higher health care costs and morbidity.[9]

The variations observed among detailed Asian and NHOPI groups, as well as among Hispanic groups, were consistent across different indicators. This general observation suggests that viewing only the results of larger racial or ethnic groups—e.g., all Asians, all NHOPI, all Hispanics—may obscure important within-group differences. It also underscores the importance of more granular reporting by detailed race and ethnicity categories, and the importance of relevant data collection efforts, as implemented in the HOS and as supported by HHS guidance on the collection of race and ethnicity data.

Definitions

Days of Activities Missed Due to Poor Physical and Mental Health
Beneficiary response to the question, "During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?" Responses can range from 0–30 days.

Depression
Beneficiary reported "yes" in response to the question, "Has the doctor ever told you that you had depression?"

Ethnicity
Beneficiary self-reported ethnicity, based on the question, "Are you of Hispanic, Latino/a or Spanish Origin? (One or more categories may be selected)." The five response categories were: No, not of Hispanic, Latino/a or Spanish origin; Yes, Mexican, Mexican American, Chicano/a; Yes, Puerto Rican; Yes, Cuban; and Yes, Another Hispanic, Latino/a or Spanish origin. A person reporting a single ethnicity was coded in the corresponding ethnicity group; a person reporting more than one ethnicity was coded as multiethnic.

Mental Health Status
Four indicators of self-reported mental health status were assessed: self-report of a depression diagnosis, positive depression screen, days of activities missed due to poor physical and mental health, and the Veterans RAND 12-Item Health Survey Mental Component Score (VR-12 MCS).

Positive Depression Screen
Beneficiary scored 3 points or more across two depression screening questions that are from the two-item Patient Health Questionnaire (PHQ-2). A positive depression screen on the PHQ-2 is related to the risk of depressive disorders, and people who report a positive depression are recommended for further screening. One question asks how often one experienced "little interest or pleasure in doing things" in the past two weeks; the other question asks how often one felt "down, depressed or hopeless" in the past two weeks. Responses to both questions are the same: "nearly every day," "more than half the days," "several days," and "not at all." Responses are scored from 0 (not at all) to 3 (nearly every day), and a positive depression screen refers to a score of 3 points or greater on the combined total points.

Race
Beneficiary self-reported race, based on the question, "What is your race? (One or more categories may be selected)." The 14 response categories were: White, Black or African American, American Indian or Alaska Native, Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Other Asian, Native Hawaiian, Guamanian or Chamorro, Samoan, Other Pacific Islander. A person reporting a single race was coded in the corresponding race group; a person reporting more than one race was coded as multiracial.

Veterans RAND 12-Item Health Survey Mental Component Score (VR-12 MCS)
Score reflecting mental health functioning based on beneficiary response to several items in the HOS. The score ranges from 0-100, with 0 representing the worst mental health and 100 representing the best mental health.

Data Sources and Methods

This analysis used data from the Medicare Health Outcomes Survey (HOS), a mail survey with telephone follow-up. Fielded annually since 1998, the HOS assesses self-reported health status at baseline and—two years later—at follow-up using a nationally-representative sample of Medicare Advantage beneficiaries. Each spring, a random sample of Medicare beneficiaries is surveyed from each participating Medicare Advantage Organization with at least 500 enrollees. These data have been used to assess changes in physical and mental health outcomes, and health-related quality of life, of Medicare beneficiaries over time. In 2013, the HOS was the first large-scale CMS survey to collect data using expanded, detailed racial and ethnic categories based on Department of Health and Human Services (HHS) data collection guidelines.[7] This analysis sought to examine racial and ethnic differences in mental health status among beneficiaries from a range of racial and ethnic groups, with a special focus on findings among Asians and Native Hawaiian and Other Pacific Islanders, as well as Hispanic groups.

The analysis used pooled data from the three most recent years of the HOS: the 2014 Cohort 17, 2015 Cohort 18, and 2016 Cohort 19 baseline surveys. The patient was the unit of analysis. The analytic sample included all beneficiaries, regardless of age and disability status, who responded to the survey and provided information on their race, ethnicity, and mental health status. Individuals were excluded if they were selected for the baseline survey but were ineligible (e.g., incorrect telephone or address information) and thus did not complete a baseline survey. Also excluded were those whose race, ethnicity, or mental health status could not be confirmed because they did not respond to questions that collected this information. For beneficiaries who were sampled more than once in the data (e.g., sampled in 2014, then again in 2016), only the initial results were used to avoid duplication.

Univariate associations between race and ethnicity and mental health status were examined using one-tailed chi-squared and t-tests to assess pairwise comparisons. Because this study examined four mental health indicators for each individual, a Bonferroni correction was used to interpret *P* values. Thus, at the alpha testing level of .05, only *P* values < .0125 (.05/4) were considered significant.

This report adheres to the CMS cell size suppression policy to protect consumer privacy. This policy stipulates that only cells of 11 or more may be displayed, which may require the use of complementary cell suppression. Also, no use of percentages or other mathematical formulas may be used if they result in the display of a cell of 10 or less.

Limitations

This data highlight uses self-reported survey data and thus may be subject to reporting biases, including those that may differentially affect how diverse racial and ethnic groups relate to the questions regarding mental health. It is possible that certain racial and ethnic groups may be less willing to self-report personal information – a bias that may vary by group – and this may affect the results. The data may also be subject to recall bias, particularly for the question asking "Did a doctor ever tell you if you had depression?". The results represent only Medicare Advantage beneficiaries who responded to survey questions on race, ethnicity, and mental health status and may not be generalizable to all Medicare Advantage beneficiaries or to Medicare beneficiaries who are not enrolled in Medicare Advantage (e.g., Medicare Fee-for-Service beneficiaries). Despite using pooled 2014-2016 data, some racial and ethnic groups remained small, and these smaller sample sizes may have affected the ability to detect real differences between groups using statistical testing. Further, information regarding barriers or facilitators to seeking care and use of mental health services were not assessed as part of this study and could have shed light on factors affecting racial and ethnic differences in the observed results.

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Appendix

Table A1. Number of Beneficiaries by Mental Health Status Indicators, Race, and Ethnicity

Race and Ethnicity	Mental Health Indicators					
	Categorical Indicators/Variables				Continuous Indicators/Variables	
Category	Was Told Had Depression		Positive Depression Screen[a]		Days of Activities Missed Due to Poor Physical and Mental Health (SD)	VR-12 MCS Score[b]
	N=Yes	N= Overall	N= Yes	N= Overall	N= Overall	N= Overall
Race						
Overall (All Races)[c]	**161,562**	**644,229**	**84,682**	**606,695**	**578,886**	**656,637**
White	125,836	512,882	58,913	485,847	462,609	521,991
Black	21,817	80,379	16,859	74,024	71,131	82,549
American Indian or Alaska Native	1,333	3751	864	3,382	3,299	3,846
All Asian	3,357	21,603	2,624	20,596	20,371	22,132
Asian Indian	502	2,901	382	2,721	2,707	2,955
Chinese	698	5,616	637	5,397	5,397	5,751
Japanese	309	2,599	171	2,482	2,390	2,655
Korean	233	1,620	176	1,569	1,550	1,658
Filipino	765	5,291	621	5,038	4,885	5,442
Vietnamese	453	2,077	353	1,992	2,016	2,142
Other Asian	397	1,499	284	1,397	1,426	1,529
All Native Hawaiian/Other Pacific Islander	920	2,687	603	2,423	2,540	2,756
Native Hawaiian	155	668	91	65	612	684
Guamanian or Chamorro	19	68	14	64	66	71
Samoan	53	168	45	151	163	174
Other Pacific Islander	693	1,783	453	1,593	1,699	1,827
Multiracial	8,299	22,927	4,819	20,423	18,936	233,63
Ethnicity						
Overall (All Ethnicities)[c]	**154,454**	**602,796**	**80,200**	**565,799**	**601,631**	**691,243**
Not Hispanic	125,817	520,604	63,227	492,376	465,007	528,911
All Hispanic Reporting Single Ethnicity	26,349	76,519	15,466	68,583	66,320	78,285
Mexican	8,050	25,796	5,157	23,401	21,866	26,349
Puerto Rican	10,182	24,888	5,553	21,756	21,495	25,524
Cuban	1,498	4,338	743	3,842	3,717	4,434
Other Hispanic	6,619	21,497	4,013	19,584	19,242	21,978
Multiethnic	2,288	5,673	1,507	4,840	3,984	5,762

[a] A "positive depression screen" is determined using two depression screening questions based on the two-item Patient Health Questionnaire (PHQ-2). A positive depression screen on the PHQ-2 is related to a risk of depressive disorders, and respondents who report a positive depression screen are recommended for further screening. Responses to both questions are scored from 0 to 3. A positive depression screen refers to a score of 3 points or greater on the combined total points.

[b] VR-12 MCS = Veterans-RAND 12-Item Short Form Survey Mental Component Score. The score ranges from 0-100, with 100 representing better mental health status. A higher score is better.

[c] The overall results for all races versus all ethnicities do not precisely match because different sets of respondents may choose to self-report their race versus their ethnicity; these different sets of respondents may report different health results.

The Ns in this Appendix table (A1) are different from the overall Ns in Tables 1 and 2 due to missing data on the mental health indicators (i.e., not all beneficiaries who self-report their race or ethnicity respond to all mental health indicators).

The remaining Appendix tables, A2-A10, report additional frequencies, as well as a summary of statistically significant differences for all pairwise comparisons by race and ethnicity for the four mental health indicators: presence of depression (Tables A2-A3), positive depression screen (Tables A5-A6), days of activities missed because of poor physical and mental health (A7-A8), and average Veterans-RAND 12-Item Mental Component Score (A9-A10). Appendix Table A4 reports the frequency of responses for the two, separate Patient Health Questionnaire items comprising the positive depression screen indicator.

Table A2. Frequency of Depression Diagnosis: Summary of Differences by Race

	Frequency of Depression														
Difference from: [a]	White	Black	AI/AN	Asian Indian	Chinese	Japanese	Korean	Filipino	Vietnam-ese	Other Asian	Native Hawaiian	Guamanian or Chamorro	Samoan	Other Pacific Islander	Multira-cial
	24.5%	27.1%	35.5%	17.3%	12.4%	11.9%	14.4%	14.5%	21.8%	26.5%	23.2%	27.9%	31.5%	38.9%	36.2%
White: 24.5%	N/A														
Black: 27.1%	+	N/A													
American Indian or Alaska Native: 35.5%	+	+	N/A												
Asian Indian: 17.3%	–	–	–	N/A											
Chinese: 12.4%	–	–	–	–	N/A										
Japanese: 11.9%	–	–	–	–		N/A									
Korean: 14.4%	–	–	–	–		+	N/A								
Filipino: 14.5%	–	–	–	–	+	+		N/A							
Vietnamese: 21.8%	–	–	–	+	+	+	+	+	N/A						
Other Asian: 26.5%			–	+	+	+	+	+	+	N/A					
Native Hawaiian: 23.2%		–	–	+	+	+	+	+			N/A				
Guamanian or Chamorro: 27.9%				+	+	+	+	+				N/A			
Samoan: 31.5%				+	+	+	+	+	+				N/A		
Other Pacific Islander: 38.9%	+	+	+	+	+	+	+	+	+	+	+			N/A	
Multiracial: 36.2%	+	+	+	+	+	+	+	+	+	+	+			–	N/A

Notes: For frequency of depression, lower is better.

[a] Differences that are statistically significant at P<.0125 are denoted by – or +. A Bonferroni correction was applied to account for the assessment of four mental health indicators from the sample of Medicare Advantage members. Thus, at the alpha testing level of .05, only P values <.0125 (.05/4) were considered significant.

⁺ Denotes statistically significant race-race difference (P<.0125) of any size that favors the race in the horizontal row at top.

⁻ Denotes statistically significant race-race difference (P<.0125) of any size that favors the race in the vertical column at left (comparison group).

AI/AN = American Indian/Alaskan Native; N/A = not applicable.

Table A3. Frequency of Depression Diagnosis: Summary of Differences by Ethnicity

Difference from: [a]	Frequency of Depression					
	Non-Hispanic	Hispanic				
		Mexican	Puerto Rican	Cuban	Other Hispanic	Multiethnic
	24.2%	31.2%	40.9%	34.5%	30.8%	40.3%
Non-Hispanic: 24.2%	N/A					
Mexican: 31.2%	+	N/A				
Puerto Rican: 40.9%	+	+	N/A			
Cuban: 34.5%	+	+	–	N/A		
Other Hispanic: 30.8%	+	+	–	–	N/A	
Multiethnic: 40.3%	+	+		+	+	N/A

Notes: For frequency of depression, lower is better.

[a] Differences that are statistically significant at P<.0125 are denoted by – or +. A Bonferroni correction was applied to account for the assessment of four mental health indicators from the sample of Medicare Advantage members. Thus, at the alpha testing level of .05, only *P* values <.0125 (.05/4) were considered significant.

+ Denotes statistically significant race-race difference (P<.0125) of any size that favors the race in the horizontal row at top.

– Denotes statistically significant race-race difference (P<.0125) of any size that favors the race in the vertical column at left (comparison group).

N/A = not applicable.

Across the two depression screening questions, the frequency of responses demonstrated similar patterns (Table A2) and was consistent with the percentages reporting a positive depression screen. For example, among all races, Japanese beneficiaries reported the lowest percentage of a positive depression screen (6.9%) and the lowest frequency of answering "nearly every day" and "more than half the days" to both questions.

Table A4. Frequency of Positive Depression Screen and Responses to Two Screening Questions, by Race and Ethnicity

Race and Ethnicity	Positive Depression Screen and Screening Questions									
Category	N	Positive Depression Screen	Feeling down, depressed, or hopeless in past 2 weeks				Little interest or pleasure in doing things in past 2 weeks			
			Not at all	Several days	More than half the days	Nearly every day	Not at all	Several days	More than half the days	Nearly every day
Race										
White	523,137	12.1%	71.0%	18.7%	5.6%	4.8%	65.6%	19.4%	7.7%	7.3%
Black	82,852	22.8%	61.6%	20.5%	10.2%	7.7%	50.1%	22.6%	14.6%	12.7%
American Indian or Alaska Native	3,862	25.6%	55.5%	22.8%	11.3%	10.3%	48.2%	21.8%	14.6%	15.5%
Asian Indian	2,971	14.0%	71.9%	15.1%	7.4%	5.6%	63.9%	17.5%	10.1%	8.5%
Chinese	5,777	11.8%	68.9%	21.9%	6.1%	3.2%	59.3%	26.3%	8.9%	5.5%
Japanese	2,662	6.9%	78.9%	14.6%	3.5%	2.9%	75.6%	14.7%	4.8%	4.9%
Korean	1,666	11.2%	69.2%	22.3%	5.5%	3.0%	62.7%	24.3%	8.2%	4.8%
Filipino	5,473	12.3%	72.7%	15.6%	6.5%	4.3%	65.1%	19.6%	8.7%	6.6%
Vietnamese	2,159	17.7%	62.3%	23.6%	8.9%	5.1%	52.3%	28.3%	11.8%	7.6%
Other Asian	1,538	20.3%	59.2%	22.3%	9.8%	8.6%	53.5%	22.7%	12.2%	11.6%
Native Hawaiian	686	14.8%	63.8%	20.8%	7.3%	8.2%	58.5%	22.3%	10.2%	9.0%
Guamanian or Chamorro	72	21.9%	62.0%	*	*	*	53.6%	21.7%	*	*
Samoan	174	29.8%	45.6%	28.1%	14.0%	12.3%	36.5%	26.5%	18.8%	18.2%
Other Pacific Islander	1,835	28.4%	46.3%	27.0%	13.5%	13.1%	40.5%	26.4%	16.0%	17.1%
Multiracial	23,406	23.6%	58.9%	21.5%	9.2%	10.3%	50.4%	21.7%	12.8%	15.1%

Race and Ethnicity	Positive Depression Screen and Screening Questions									
Category	N	Positive Depression Screen	Feeling down, depressed, or hopeless in past 2 weeks				Little interest or pleasure in doing things in past 2 weeks			
			Not at all	Several days	More than half the days	Nearly every day	Not at all	Several days	More than half the days	Nearly every day
Ethnicity										
Not Hispanic	529,903	12.8%	71.1%	18.3%	5.7%	4.9%	65.0%	19.1%	8.2%	7.7%
Mexican	26,428	22.0%	59.6%	22.1%	9.8%	8.5%	52.4%	21.8%	12.9%	13.0%
Puerto Rican	25,617	25.5%	48.0%	28.2%	11.3%	12.4%	39.7%	30.2%	13.3%	16.8%
Cuban	4,457	19.3%	57.8%	23.0%	7.8%	11.5%	52.5%	23.7%	10.5%	13.3%
Other Hispanic	22,061	20.5%	59.4%	22.4%	9.5%	8.6%	52.5%	23.2%	12.2%	12.0%
Multiethnic	5,767	31.1%	52.1%	22.9%	11.1%	13.9%	41.4%	23.8%	14.0%	20.8%

***Cell sizes too small to report.**

Note: A positive depression screen is related to the risk of depressive disorders, and is based on responses to the two-item Patient Health Questionnaire (PHQ-2). The response choices for both items are the same (ranging from "nearly every day" to "not at all"), and are scored from 0 ("not at all") to 3 ("nearly every day"). A positive depression screen occurs when a respondent scores a total of 3 points or more across both items.

Table A5. Positive Depression Screen: Summary of Differences by Race

Difference from: [a]	Frequency of a Positive Depression Screen														
	White	Black	AI/AN	Asian Indian	Chinese	Japanese	Korean	Filipino	Vietnam-ese	Other Asian	Native Hawaiian	Guamanian or Chamorro	Samoan	Other Pacific Islander	Multi-racial
	12.1%	22.8%	25.6%	14.0%	11.8%	6.9%	11.2%	12.3%	17.7%	20.3%	14.8%	21.9%	29.8%	28.4%	23.6%
White:12.1%	N/A														
Black: 22.8%	+	N/A													
American Indian or Alaska Native: 25.6%	+	+	N/A												
Asian Indian:14.0%	+	–	–	N/A											
Chinese: 11.8%		–	–	–	N/A										
Japanese: 6.9%	–	–	–		–	N/A									
Korean: 11.2%		–	–	–		+	N/A								
Filipino: 12.3%		–	–			+		N/A							
Vietnamese:17.7%	+	–	–	+	+	+	+	–	N/A						
Other Asian: 20.3%	+	–	–	+	+	+	+	+	–	N/A					
Native Hawaiian: 14.8%		–				+	+				N/A				
Guamanian or Chamorro: 21.9%	+				+	+	+	+				N/A			
Samoan: 29.8%	+			+	+	+	+	+	+	+	+		N/A		
Other Pacific Islander: 28.4%	+	+	+	+	+	+	+	+	+	+	+			N/A	
Multiracial: 23.6%	+	+	+	+	+	+	+	+	+	+	+			–	N/A

Notes: For frequency of a positive depression screen, lower is better.

[a] Differences that are statistically significant at P<.0125 are denoted by – or +. A Bonferroni correction was applied to account for the assessment of four mental health indicators from the sample of Medicare Advantage members. Thus, at the alpha testing level of .05, only *P* values <.0125 (.05/4) were considered significant.

*** Denotes statistically significant race-race difference (P<.0125) of any size that favors the race in the horizontal row at top.**

– Denotes statistically significant race-race difference (P<.0125) of any size that favors the race in the vertical column at left (comparison group).

AI/AN = American Indian/Alaskan Native; N/A = not applicable.

Table A6: Positive Depression Screen: Summary of Differences by Ethnicity

Difference from [a]	Frequency of Positive Depression Screen					
	Non-Hispanic	Hispanic				
		Mexican	Puerto Rican	Cuban	Other Hispanic	Multiethnic
	12.8%	22.0%	25.5%	19.3%	20.5%	31.1%
Non-Hispanic: 12.8%	N/A					
Mexican: 22.0%	+	N/A				
Puerto Rican: 25.5%	+	+	N/A			
Cuban: 19.3%	+	–	–	N/A		
Other Hispanic: 20.5%	+	–	–		N/A	
Multiethnic: 31.1%	+	+	+	+	+	N/A

Notes: For frequency of a positive depression screen, lower is better.

[a] Differences that are statistically significant at P<.0125 are denoted by – or +. A Bonferroni correction was applied to account for the assessment of four mental health indicators from the sample of Medicare Advantage members. Thus, at the alpha testing level of .05, only *P* values <.0125 (.05/4) were considered significant.

+ Denotes statistically significant race-race difference (P<.0125) of any size that favors the race in the horizontal row at top.

– Denotes statistically significant race-race difference (P<.0125) of any size that favors the race in the vertical column at left (comparison group).

N/A = not applicable.

Table A7. Average Days of Activities Missed Due to Poor Physical and Mental Health: Summary of Differences by Race

Difference from: [a]	Average Days of Activities Missed due to Poor Physical and Mental Health														
	White	Black	AI/AN	Asian Indian	Chinese	Japanese	Korean	Filipino	Vietnamese	Other Asian	Native Hawaiian	Guamanian or Chamorro	Samoan	Other Pacific Islander	Multi-racial
	5.8	7.7	9.6	5.1	4.5	3.8	3.9	4.7	5.3	7.6	6.9	7.2	9.8	9.8	9.5
White: 5.8 days	N/A														
Black: 7.7 days	+	N/A													
American Indian or Alaska Native: 9.6 days	+	+	N/A												
Asian Indian: 5.1 days	–	–	–	N/A											
Chinese: 4.5 days	–	–	–	–	N/A										
Japanese: 3.8 days	–	–	–	–	–	N/A									
Korean: 3.9 days	–	–	–	–			N/A								
Filipino: 4.7 days	–	–	–			+	+	N/A							
Vietnamese: 5.3 days		–	–		+	+	+	+	N/A						
Other Asian: 7.6 days	+		–	+	+	+	+	+	+	N/A					
Native Hawaiian: 6.9 days	+		–	+	+	+	+	+	+		N/A				
Guamanian or Chamorro: 7.2 days						+	+					N/A			
Samoan: 9.8 days	+	+		+	+	+	+	+	+	+	+		N/A		
Other Pacific Islander: 9.8 days	+	+		+	+	+	+	+	+	+	+			N/A	
Multiracial: 9.5 days	+	+		+	+	+	+	+	+	+	+				N/A

Notes: For days of activity missed, lower is better.

[a] Differences that are statistically significant at P<.0125 are denoted by – or +. A Bonferroni correction was applied to account for the assessment of four mental health indicators from the sample of Medicare Advantage members. Thus, at the alpha testing level of .05, only *P* values <.0125 (.05/4) were considered significant.

+ Denotes statistically significant race-race difference (P<.0125) of any size that favors the race in the horizontal row at top.

– Denotes statistically significant race-race difference (P<.0125) of any size that favors the race in the vertical column at left (comparison group).

AI/AN = American Indian/Alaskan Native; N/A = not applicable

Table A8. Average Days of Activities Missed Due to Poor Physical and Mental Health: Summary of Differences by Ethnicity

	Average Days of Activities Missed due to Poor Physical and Mental Health					
	Non-Hispanic	Hispanic				
		Mexican	Puerto Rican	Cuban	Other Hispanic	Multiethnic
Difference from [a]	6.0	8.0	9.7	7.5	7.8	11.6
Non-Hispanic: 6.0 days	N/A					
Mexican: 8.0 days	+	N/A				
Puerto Rican: 9.7 days	+	+	N/A			
Cuban: 7.5 days	+	–	–	N/A		
Other Hispanic: 7.8 days	+	–	–		N/A	
Multiethnic: 11.6 days	+	+	+	+	+	N/A

Notes: For days of activities missed, lower is better.

[a] Differences that are statistically significant at P<.0125 are denoted by – or +. A Bonferroni correction was applied to account for the assessment of four mental health indicators from the sample of Medicare Advantage members. Thus, at the alpha testing level of .05, only *P* values <.0125 (.05/4) were considered significant.

*** Denotes statistically significant race-race difference (P<.0125) of any size that favors the race in the horizontal row at top.**

– Denotes statistically significant race-race difference (P<.0125) of any size that favors the race in the vertical column at left (comparison group).

N/A = not applicable.

Table A9. Average VR-12 MCS: Summary of Differences by Race

Difference from: [a]	Average VR-12 MCS														
	White	Black	AI/AN	Asian Indian	Chinese	Japanese	Korean	Filipino	Vietnamese	Other Asian	Native Hawaiian	Guamanian or Chamorro	Samoan	Other Pacific Islander	Multi-racial
	51.9	48.1	46.3	51.2	48.9	53.1	50.1	50.5	48.0	48.0	48.7	48.7	44.7	44.5	47.7
White: 51.9 MCS Score	N/A														
Black: 48.1 MCS Score	+	N/A													
American Indian or Alaska Native: 46.3 MCS Score	+	+	N/A												
Asian Indian: 51.2 MCS Score	+	–	–	N/A											
Chinese: 48.9 MCS Score	+	–	–	+	N/A										
Japanese: 53.1 MCS Score	–	–	–	–	–	N/A									
Korean: 50.1 MCS Score	+	–	–	+	–	+	N/A								
Filipino: 50.5 MCS Score	+	–	–	+	–	+		N/A							
Vietnamese: 48.0 MCS Score	+		–	+	+	+	+	+	N/A						
Other Asian: 48.0 MCS Score	+		–	+	+	+	+	+		N/A					
Native Hawaiian: 48.7 MCS Score	+		–	+		+	+	+			N/A				
Guamanian or Chamorro: 48.7 MCS Score	+					+						N/A			
Samoan: 44.7 MCS Score	+	+		+	+	+	+	+	+	+	+		N/A		
Other Pacific Islander: 44.5 MCS Score	+	+	+	+	+	+	+	+	+	+	+	+		N/A	
Multiracial: 47.7 MCS Score	+	+	–	+	+	+	+	+			+		–	–	N/A

Notes: For VR-12 MCS, higher is better.

[a] Differences that are statistically significant at P<.0125 are denoted by – or +. A Bonferroni correction was applied to account for the assessment of four mental health indicators from the sample of Medicare Advantage members. Thus, at the alpha testing level of .05, only *P* values <.0125 (.05/4) were considered significant.

*** Denotes statistically significant race-race difference (P<.0125) of any size that favors the race in the horizontal row at top.**

– Denotes statistically significant race-race difference (P<.0125) of any size that favors the race in the vertical column at left (comparison group).

AI/AN = American Indian/Alaskan Native; N/A = not applicable.

Table A10. Average VR-12 MCS: Summary of Differences by Ethnicity

	Average VR-12 MCS Score					
	Non-Hispanic	Hispanic				
		Mexican	Puerto Rican	Cuban	Other Hispanic	Multiethnic
Difference from [a]	51.8	47.4	44.3	47.6	47.6	44.8
Non-Hispanic: 51.8 MCS Score	N/A					
Mexican: 47.4 MCS Score	+	N/A				
Puerto Rican: 44.3 MCS Score	+		N/A			
Cuban: 47.6 MCS Score	+		–	N/A		
Other Hispanic: 47.6 MCS Score	+	–	–		N/A	
Multiethnic: 44.8 MCS Score	+	–	–	+	+	N/A

Notes: For VR-12 MCS, higher is better.

[a] Differences that are statistically significant at P<.0125 are denoted by – or +. A Bonferroni correction was applied to account for the assessment of four mental health indicators from the sample of Medicare Advantage members. Thus, at the alpha testing level of .05, only *P* values <.0125 (.05/4) were considered significant.

[+] Denotes statistically significant race-race difference (P<.0125) of any size that favors the race in the horizontal row at top.

[–] Denotes statistically significant race-race difference (P<.0125) of any size that favors the race in the vertical column at left (comparison group).

N/A = not applicable.