

Disparities in the Perception of Care by Patients Diagnosed With Type 1 and Type 2 Diabetes: Results From an Independent National Survey

Vikram Kanda, PhD and Kathryn Wilson, MBA. VUE Health, Boston MA.

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Abstract

Although we are celebrating 100 years since the first insulin injection, there is still so much about diabetes that we don't know. It is our responsibility as members of the healthcare community to continually conduct research on populations that may be left behind or unaware of the care available to them. This poster describes results of an independent, statistically powered survey using Qualtrics of ~2000 patients in the United States with type 1 diabetes (T1D) and type 2 diabetes (T2D), crossing Black, Asian, White, and Hispanic populations, to uncover insights related to patients' perceptions on their care and management. More than 50% of our respondents, regardless of ethnic background, believed that their doctor was not familiar with their family, their history, or their background, affecting their adherence to the treatment course.



Background

Diabetes is a significant source of healthcare burden in the United States that is disproportionately shared by racial minorities. The latest estimates from the American Diabetes Association reported that the cost for diagnosed diabetes in 2017 was \$327 billion, driven by \$90 billion of lost productivity and \$237 billion in direct medical costs.¹ In the Centers for Disease Control and Prevention's (CDC) National Diabetes Statistics Report from 2017-2020, prevalence was highest among non-Hispanic Black Americans (17.4%), followed by non-Hispanic Asian Americans (16.7%), Hispanic Americans (15.5%), and non-Hispanic White Americans (13.6%).²

Control of risk factors, comorbidities, and outcomes differ between racial groups, as well. In a National Health and Nutrition Examination Survey study (2021), odds of meeting HbA1c (OR 0.64; 95% CI, 0.53-0.77) and blood pressure (OR 0.65; 95% CI, 0.55-0.78) targets were lower for non-Hispanic Black patients compared with non-Hispanic White patients.^{3,4} The CDC's National Diabetes Statistics Report from 2017-2020 showed a higher prevalence of chronic kidney disease among non-Hispanic Black diabetes patients (46.6%) compared with non-Hispanic White (38.2%), Hispanic (38.5%), and non-Hispanic Asian patients (35.1%).² In one study of 150,701 hospital admissions for diabetic foot infection from 2002 to 2015, odds of major amputation were higher for non-Hispanic Black (OR 1.44; P<.001), Hispanic (OR 1.33; P<.001), and Native American patients (OR 1.47; P<.001) compared with White patients.⁵

Race is also associated with differences in diabetes treatment. In an analysis of claims from Optum® Clinformatics® Data Mart from 2015-2019, there were lower odds of glucagon-like peptide 1 (GLP-1) agonist being prescribed among non-Hispanic Black (OR 0.81; 95% CI, 0.79-0.83), non-Hispanic Asian (OR 0.59; 95% CI, 0.56-0.62), and Hispanic patients with diabetes (OR 0.91; 95% CI, 0.88-0.93) than among non-Hispanic White patients.⁶ A secondary analysis of rates of GLP-1 agonist, sodium-glucose co-transporter-2 inhibitor (SGLT2), and dipeptidyl peptidase 4 (DPP-4) inhibitor use in the Look AHEAD (Action for Health in Diabetes) trial found that Black (HR 0.81), Hispanic (HR 0.88), and American Indian or Alaskan Native (HR 0.51) patients were less frequently prescribed these medications compared with White patients (P = .019).⁷ In an analysis of Medicare data collected between July 2020 and December 2020 in patients who had acquired a continuous glucose monitoring device (CGM), rates of use for non-Hispanic Black (0.5%) and Hispanic (2.9%) patients were lower than for White patients (91%).⁸

Understanding differences in health-related characteristics of each racial subgroup could present new opportunities to overcome specific barriers to healthcare engagement and guide the development of individualized healthcare interventions. Therefore, further study was warranted to understand between-group differences in diabetes patients' perceptions of their healthcare.

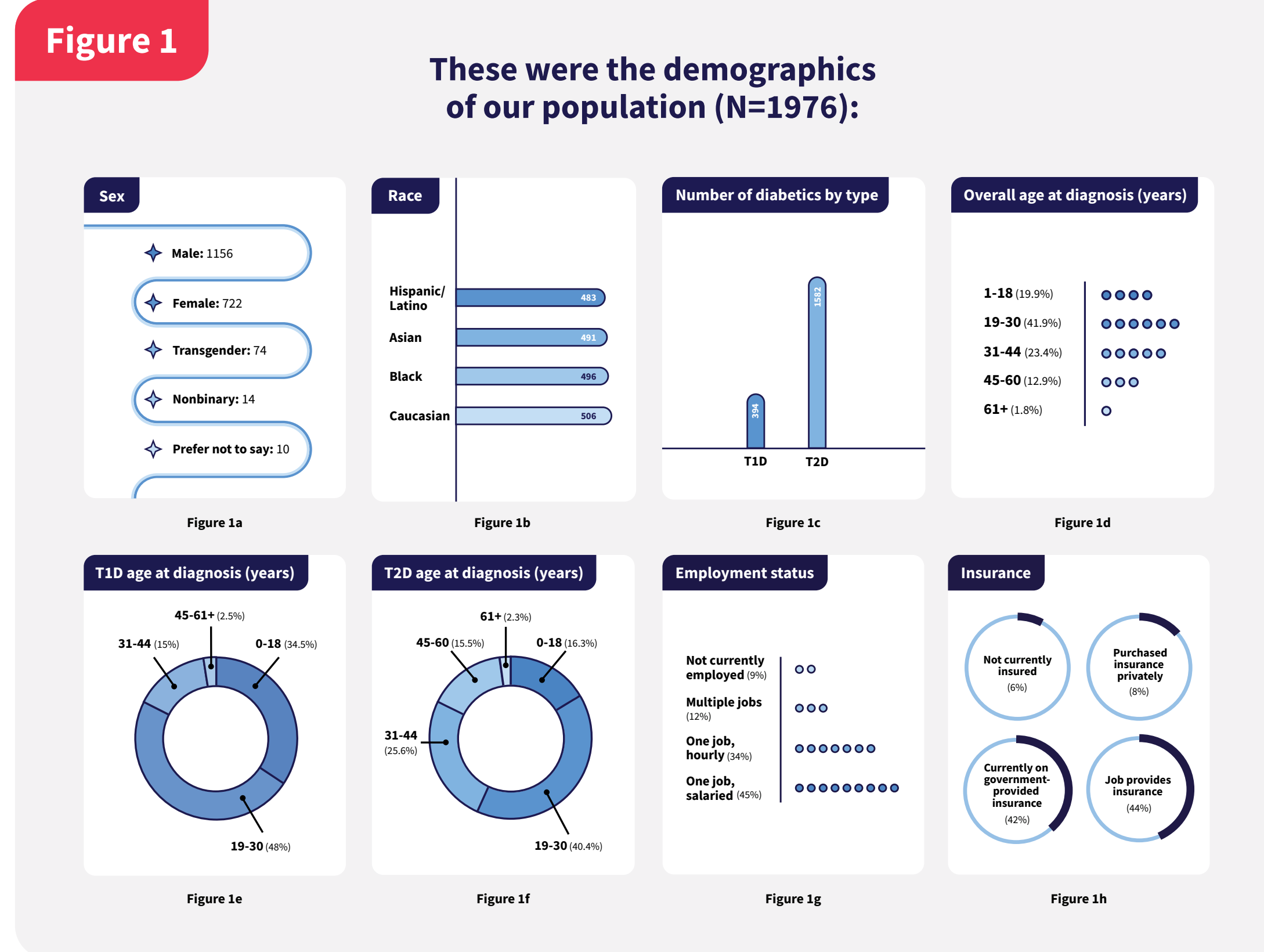
Methods

In June 2022, we conducted an independent, statistically powered survey using Qualtrics of ~2000 patients in the United States with T1D and T2D, crossing Hispanic/Latino, Asian, Black, and Caucasian populations, to uncover insights related to patients' perceptions of their care and management. Our goal was to recruit 400 patients with T2D and 100 patients with T1D or their caregivers from each cohort. Survey participants were awarded a \$5 gift card upon survey completion. A Facebook ad ran for approximately 7 hours on the first day of the campaign, netting almost all of the responses required. A nonpowered subanalysis of different Asian and Hispanic subpopulations was also included. Asian subpopulations included Chinese, Japanese, Filipino, Laotian, Vietnamese, Indian, Thai, Taiwanese, Bangladeshi, Burmese, Cambodian, Malaysian, and Korean. Hispanic subpopulations included Mexican, Cuban, Puerto Rican, Dominican, other Central American, and other South American. Statistical significance was confirmed via Chi-squared test using the Stats IQ platform provided by Qualtrics.

Results

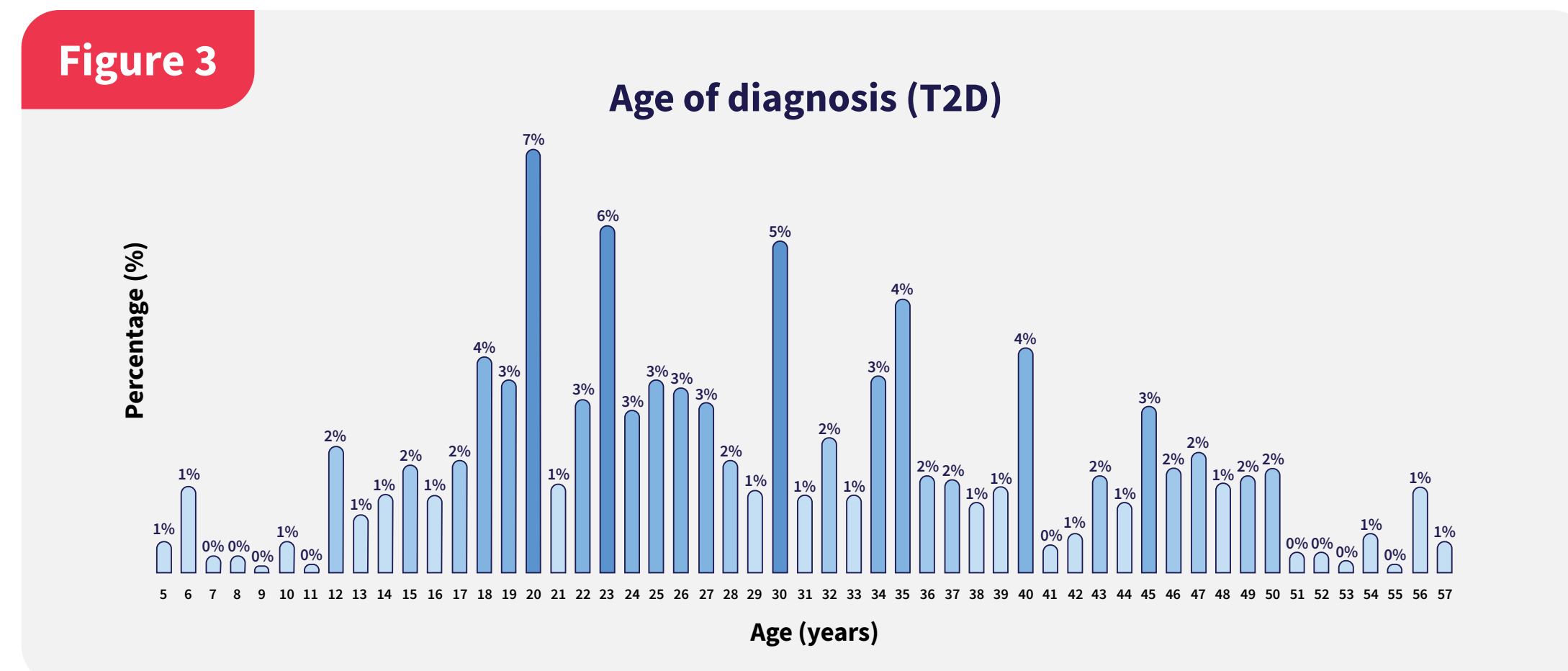
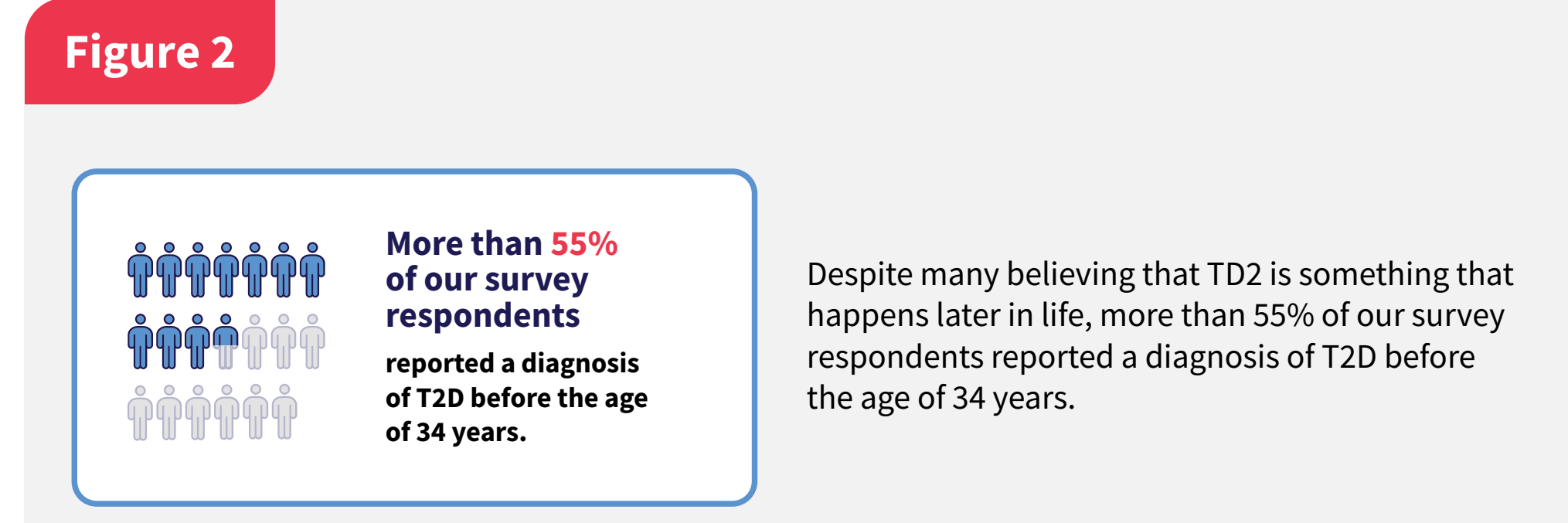
Study population characteristics

- The population was well balanced, with similar representation across ethnicities (Figure 1b)
- As it was powered to, the survey recruited more patients with T2D (n=1582) than T1D (n=394) (Figure 1c)
- The age of diagnosis was ≤30 years in most patients (61.8%) (Figure 1d)
- More patients with T1D (~73%) than T2D (~57%) received a diagnosis at an age ≤30 years (Figures 1e, 1f)
- 91% of the survey participants were employed (Figure 1g)
- 94% of the survey participants were insured; of those who responded as uninsured, 50% were Hispanic (Figure 1h)



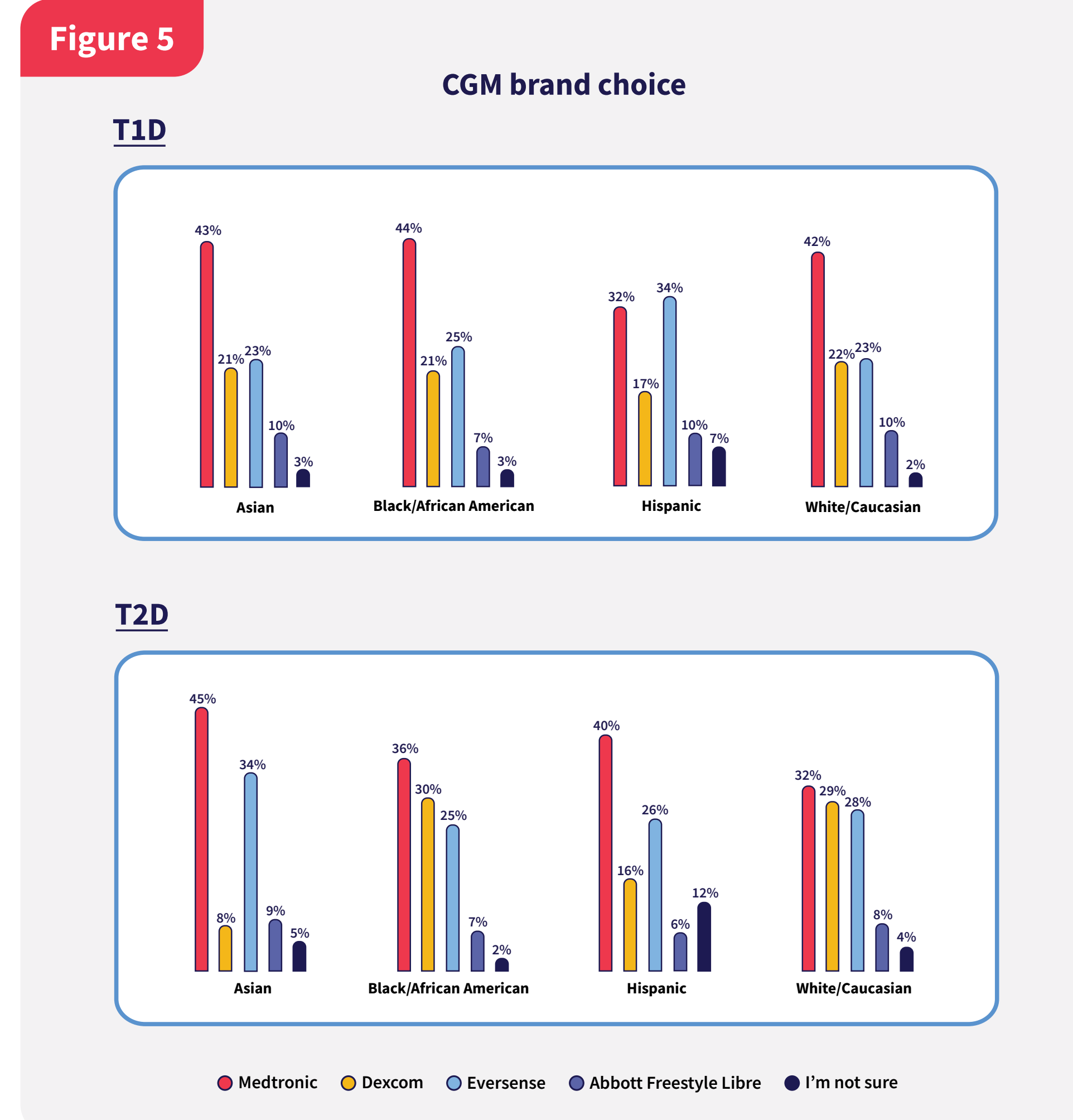
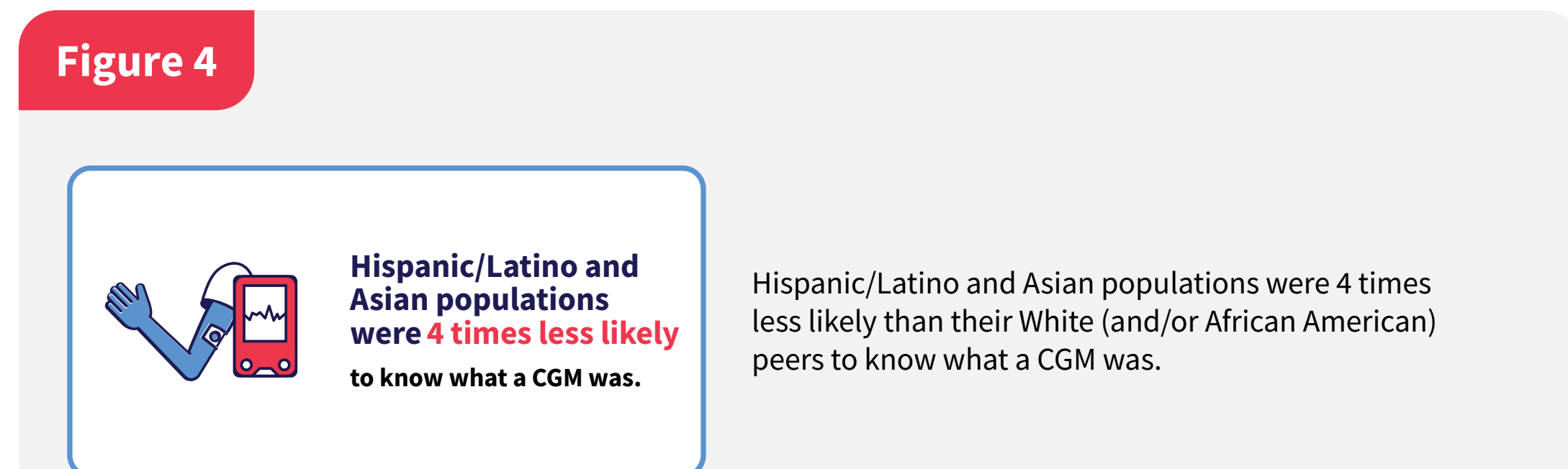
Age of diagnosis for T2D was younger than expected

- Most respondents diagnosed with T2D had an age of diagnosis of ≤30 years (n=896/1581; 56.1%), which was younger than expected, even for an online survey (Figures 2, 3)

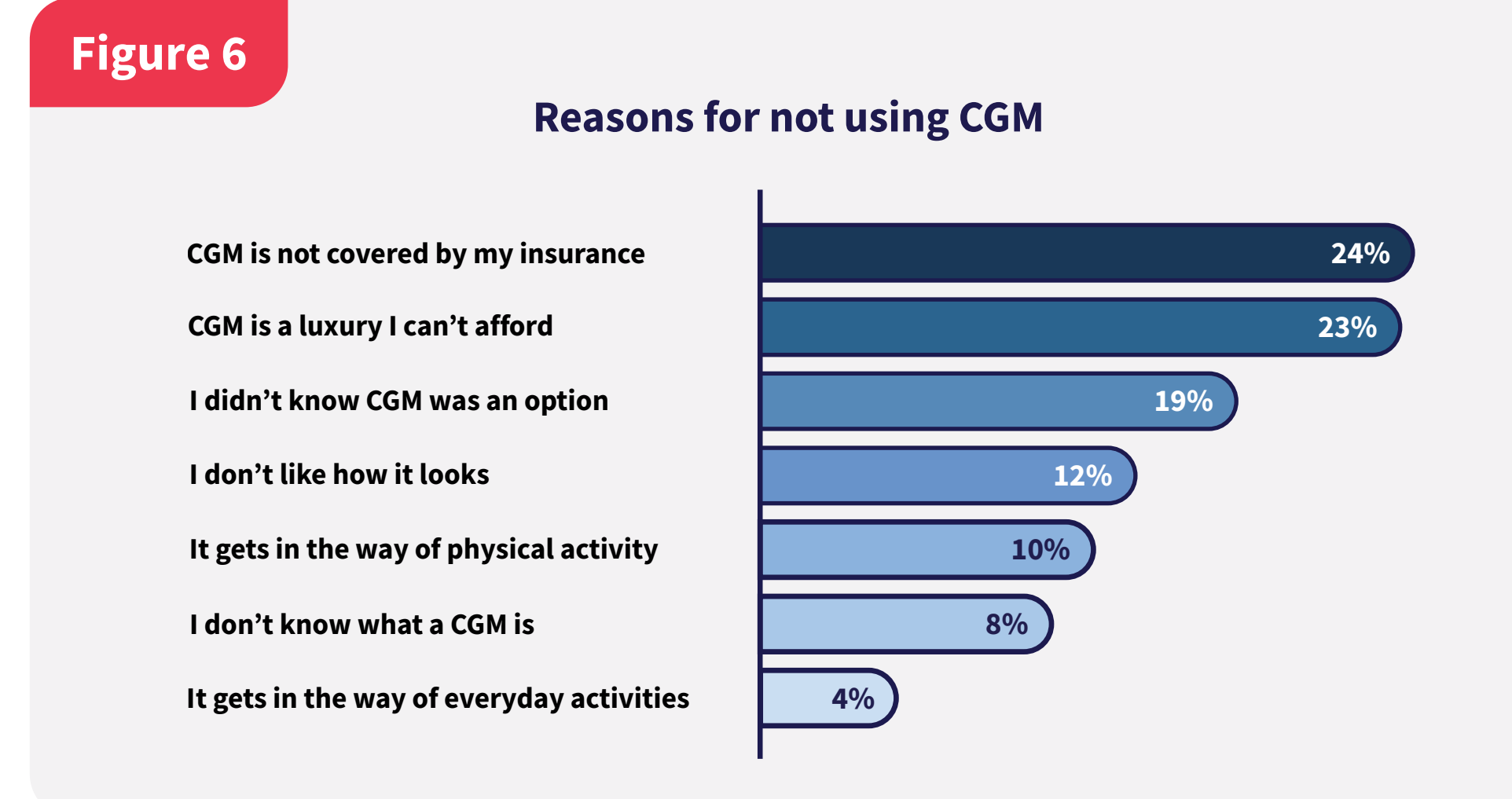


Awareness regarding modern diabetes management techniques could be lacking among Hispanic/Latino and Asian populations

- Most patients (~60%) were likely to use CGM; however, Hispanic and Asian cohorts were less likely to know what a CGM was than their White/Caucasian or Black/African American counterparts (Figure 4)
- More patients noted using a Medtronic CGM; however, usage differed by type of diabetes (Figure 5)

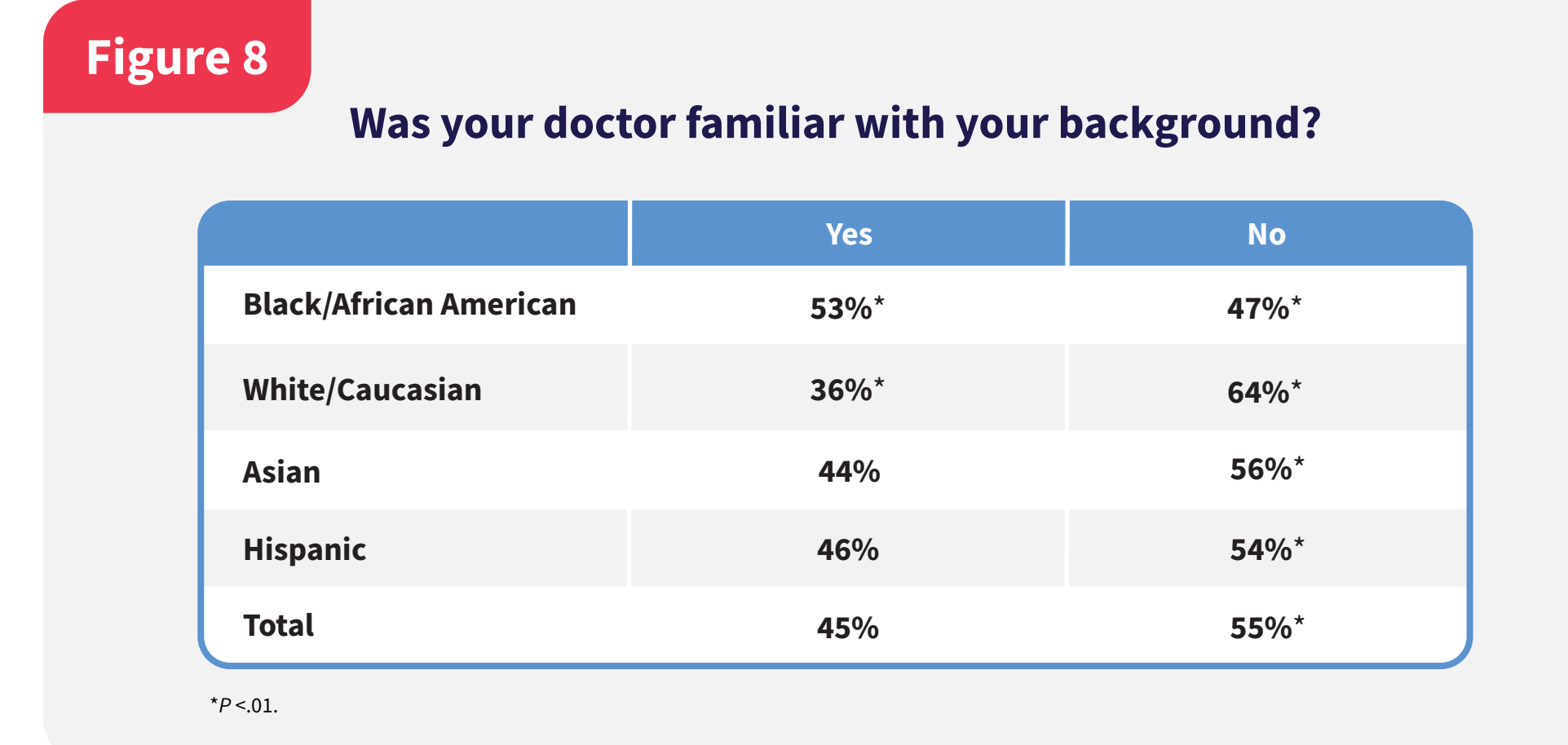
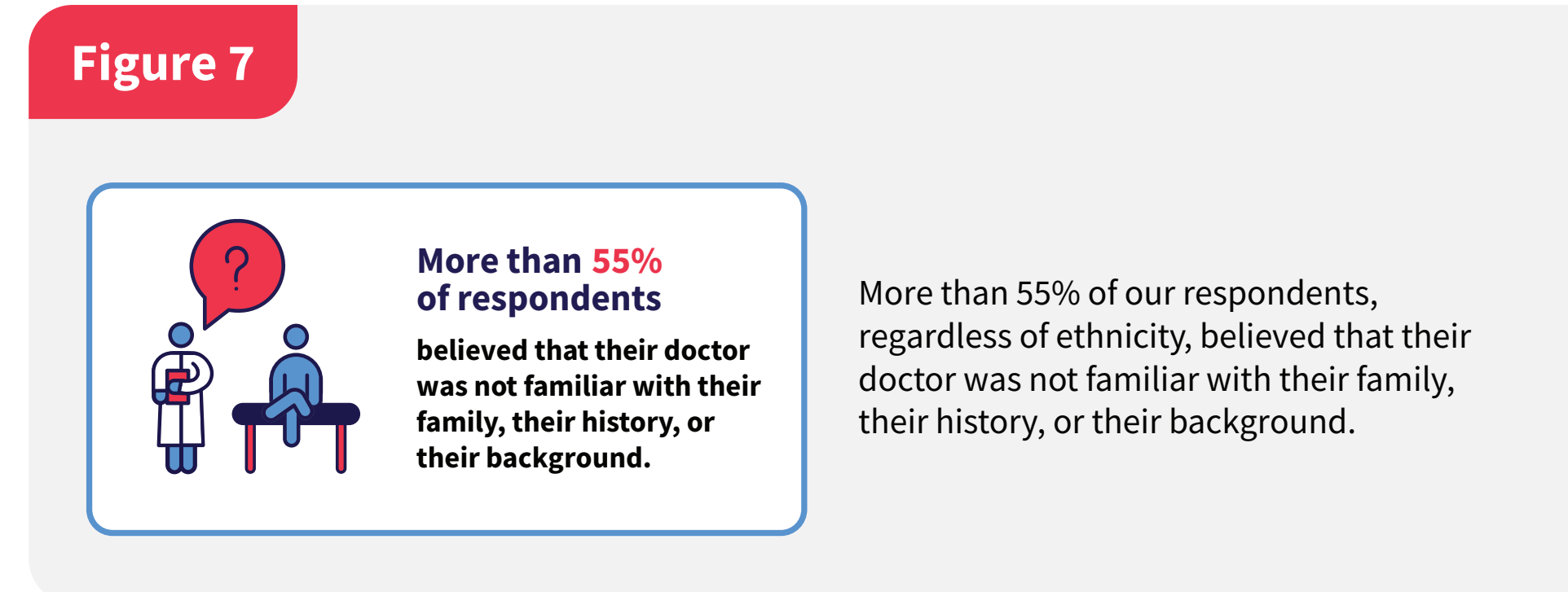


- At least 1 in 4 respondents reported that insurance coverage was a barrier for using CGM (Figure 6)
- At least 1 in 5 respondents did not know that CGM was an option (Figure 6)

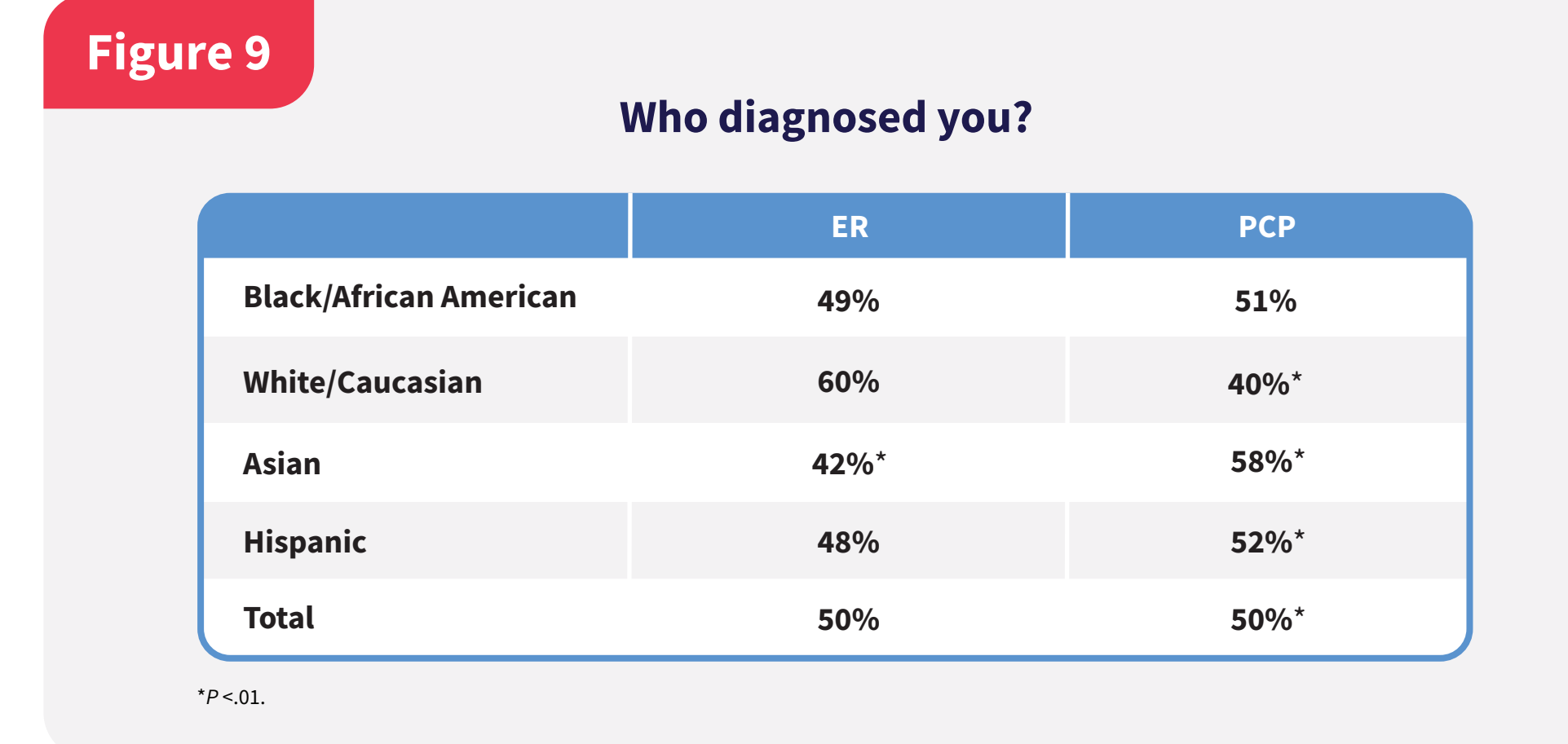


Perceptions regarding HCP interactions may contribute to difficulty in disease management

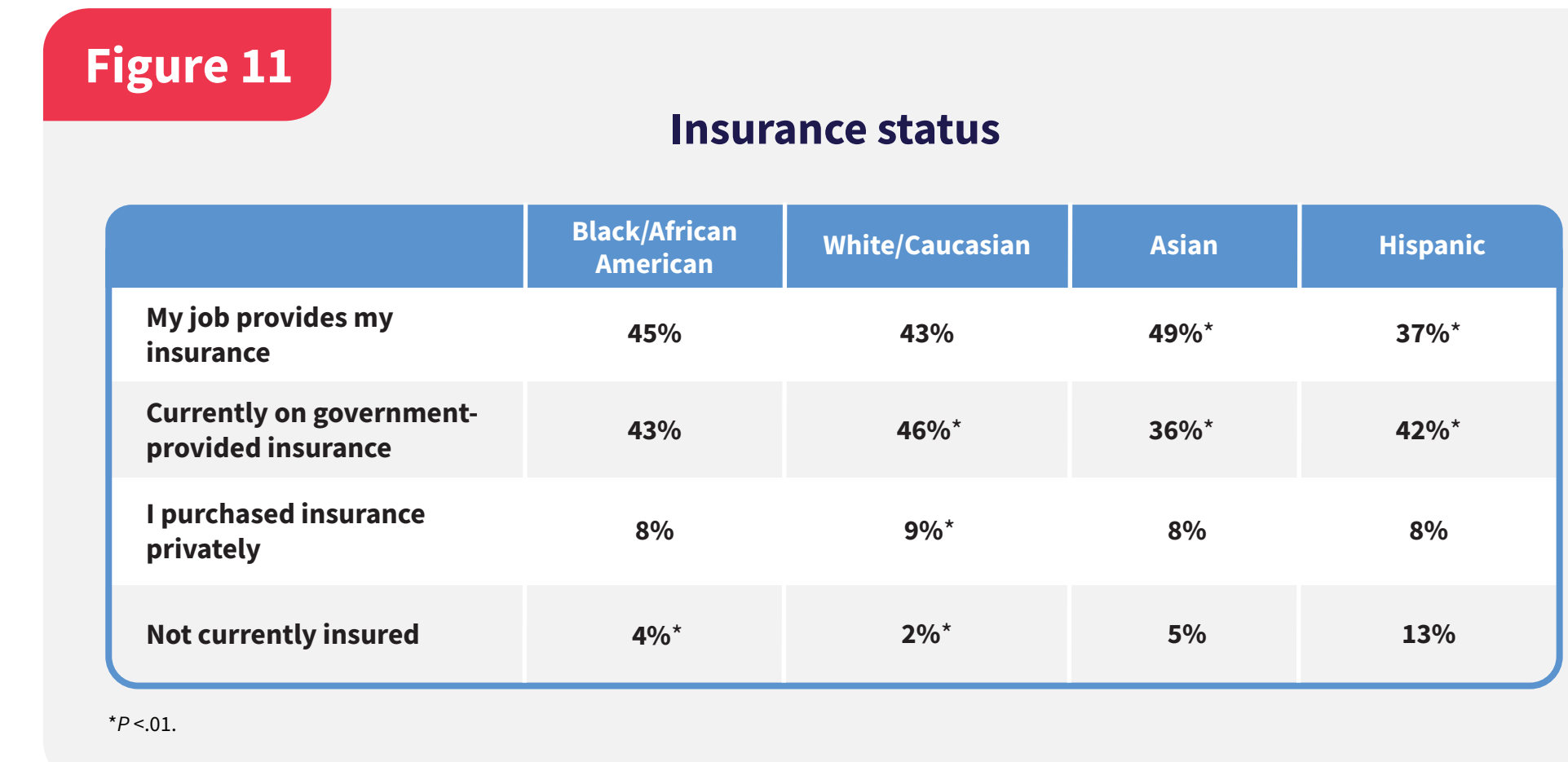
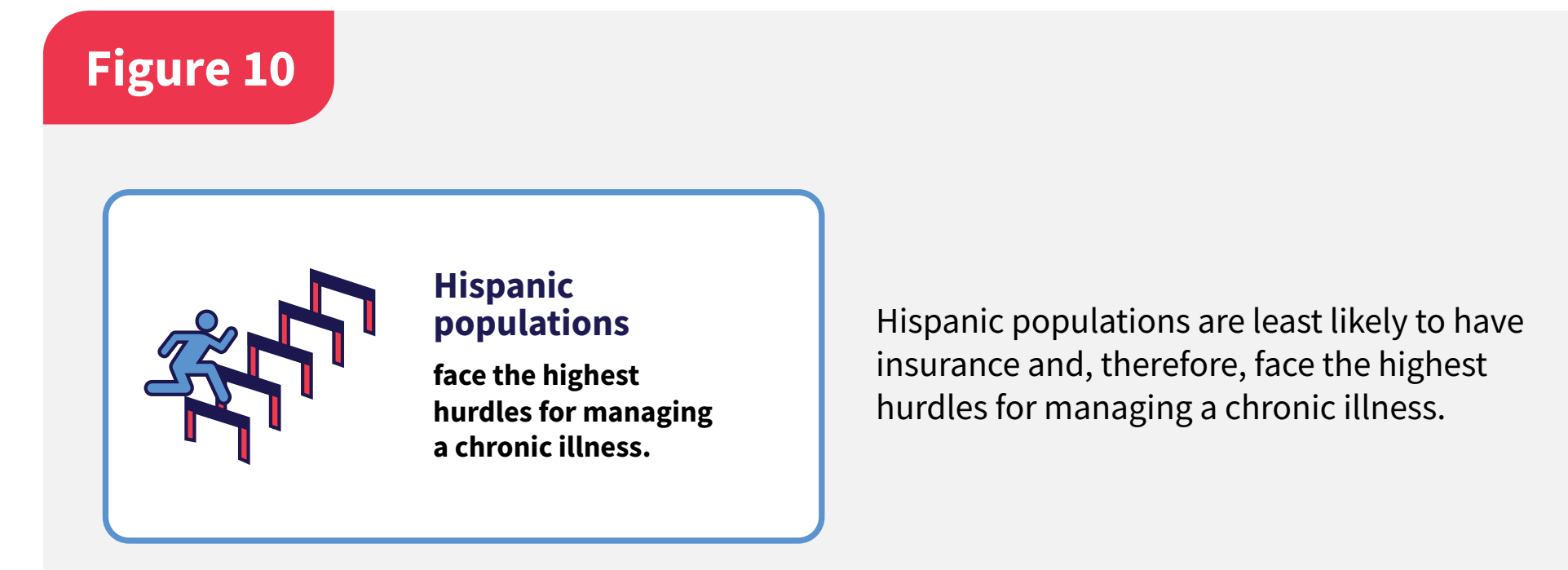
- Most respondents believed that their doctor was not familiar with their background (Figures 7, 8)
- White/Caucasian patients were more likely than other ethnicities to report challenges with interacting with HCPs
- Hispanic respondents were the least likely to report challenges interacting with their HCPs
- Black/African American patients were more likely to have an HCP familiar with their background



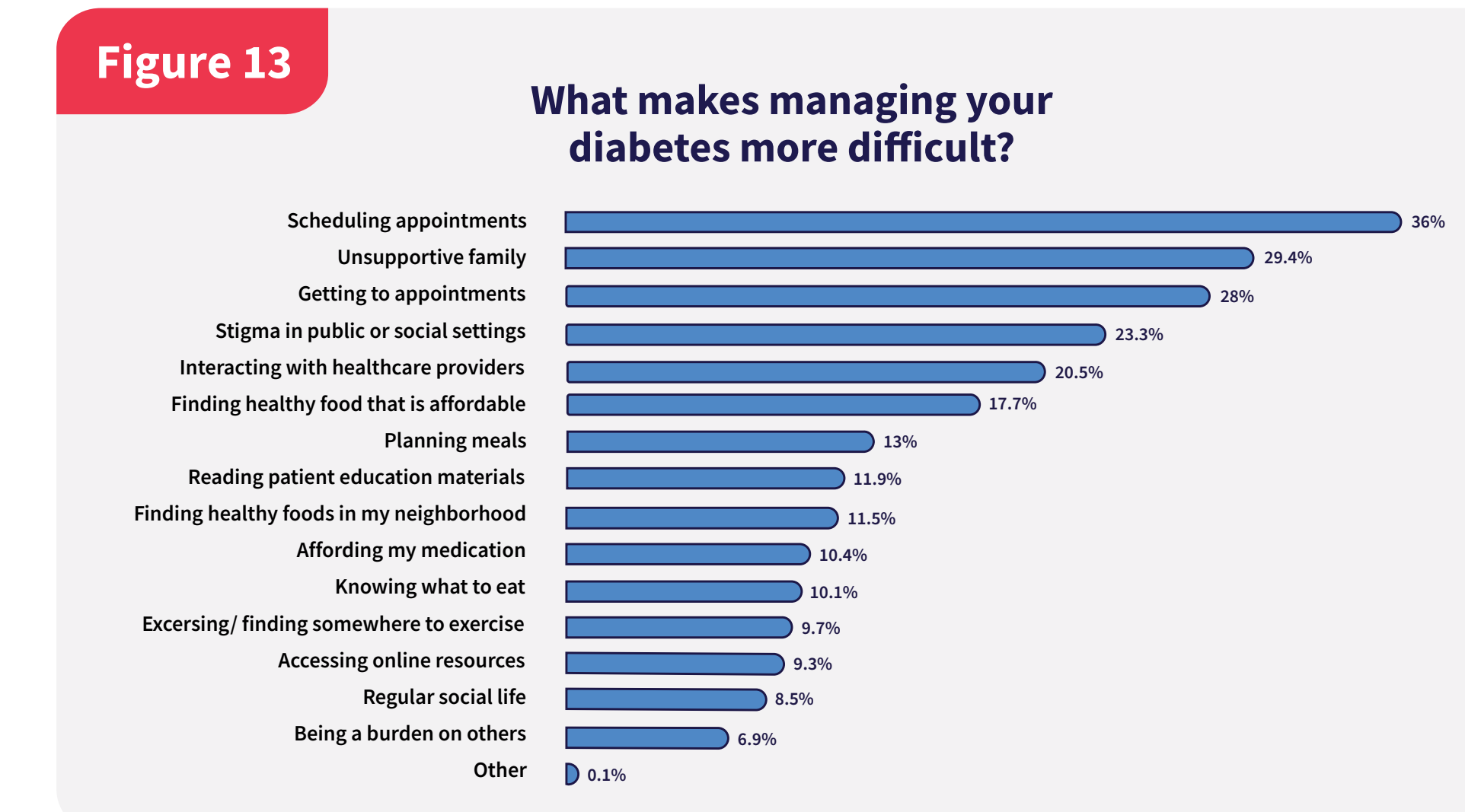
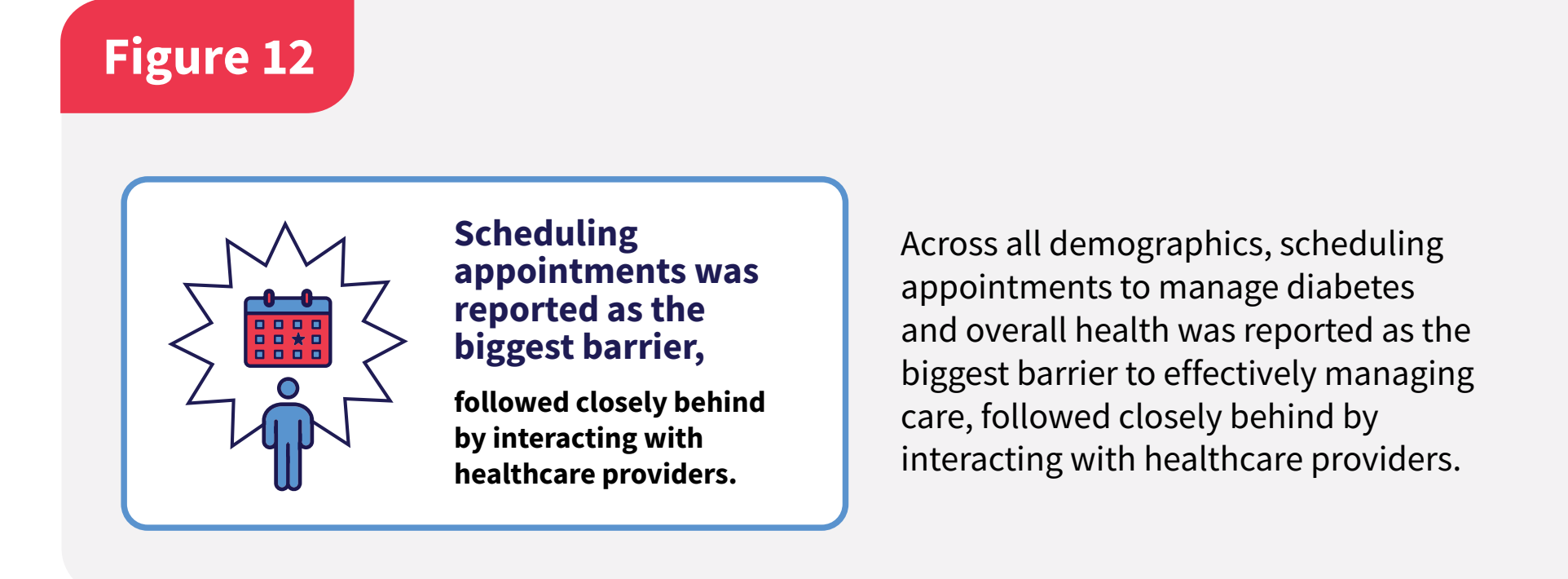
- White/Caucasians were more likely to be diagnosed in the emergency room (ER) than by their primary care physician (PCP) (Figure 9)
- Asian respondents reported that they were more likely to be diagnosed by their PCP
- In our subpopulation analysis, Filipino, Vietnamese, Thai, Taiwanese, and Bangladeshi respondents were more likely to have been diagnosed by their PCP, while Indian respondents were more likely to be diagnosed in the ER



- Lack of insurance coverage likely contributes to hurdles in diabetes management for Hispanic patients
- 1 in 8 Hispanic patients reported that they did not have insurance (Figures 10, 11)
- >50% of the noninsured survey population were Hispanic



- Barriers in the management of diabetes**
- The top barriers to diabetes management (>20% of the respondents) were scheduling appointments (36%), unsupportive family (29%), getting to appointments (28%), stigma in social settings (23.3%), and interacting with HCPs (20.5%) (Figures 12, 13)



Cultural influence in the management of diabetes

- 361/1998 (18%) of participants noted that aspects of their culture affected their management of diabetes
- All respondents who noted a cultural influence had T2D, and there was no pattern related to ethnicity
- 45% of participants noted a positive impact to their culture, relating to support with diet, exercise, and motivation
- 55% reported a negative impact, highlighting lack of support at work, criticism and stigma of the diagnosis, and a negative impact of diet and exercise.

Study Limitations

- Our study population may have skewed younger as an artifact of conducting an online survey, although ad placements ranged age groups
- Education level was not determined as a part of the study and may dictate some level of understanding of diabetes
- Although powered to get insights at a large subpopulation level, we did not recruit enough patients to get statistically powered information for Asian and Hispanic subpopulations

Conclusions

- Despite significant advances in treatment, there remains a true disparity in the dissemination of information and education to all patients diagnosed with diabetes, particularly among Hispanic and Asian populations, in whom prevalence is higher
- For the clinician, awareness of the patient's background and how they obtain information can help maximize the understanding of the disease, treatment, and lifestyle modifications that can optimize the care journey

Key Takeaways

- The age of diagnosis of T2D is getting younger
- Although there is a higher prevalence of T2D among Hispanic and Asian populations, our survey found that these populations were less likely to be aware of recent advances, such as CGM
- More than 50% of our respondents, regardless of ethnic background, believed that their doctor was not familiar with their family, their history, or their background, affecting their adherent implementation of the treatment course.

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