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Ethnic-specific Variation in Body Mass Index among Middle-aged Asian Americans with Diabetes
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Background: Obesity is associated with an increased risk of diabetes, yet Asian Americans have a higher burden of diabetes at lower BMI. Hence, the ADA recommends BMI intervention thresholds for Asians that are 2-2.5 kg/m² lower than those for other race/ethnicities. This study uses data from a large and diverse healthcare system to examine weight distribution of middle-aged adults with diabetes by race/ethnicity and Asian subgroups to highlight ethnic-specific variation.

Methods: Using electronic record databases, we consolidated BMI data from 60,535 adults aged 45-64 years with diabetes (Diabetes Registry identification of diabetes diagnosis, qualifying laboratory data, and/or pharmacotherapy), excluding those with missing or underweight BMI. Self-reported race/ethnicity data was assigned as Non-Hispanic white, Hispanic/Latinx, Black, and Asian/Pacific Islander (Asian), further categorized as Chinese, Japanese, Filipino, other Southeast Asian, South Asian, Hawaiian/Pacific Islander (PI), and all other/unspecified Asian. Standard and [Asian-specific] BMI cut-points (18.5 to <25 [<23], 25 to <30 [23 to <27.5], 30 to <35 [27.5 to <32.5], 35 to <40 [32.5 to <37.5], ≥40 [≥37.5] kg/m²) were used to characterize normal, overweight, and class 1-3 obesity. Curvilinear graphs representing BMI distribution were utilized to examine weight patterns by race and ethnicity.

Results: Middle-aged Asian adults with diabetes (N=15,997) had lower average BMI (28.4 ±5.2) compared to their non-Hispanic white (34.7 ±7.6), Hispanic/Latinx (33.6 ±6.9) and Black (34.8 ±7.7) counterparts (p<0.05). Utilizing standard BMI cut-offs, 25-30% of Asian females and males were normal weight, 38-45% were overweight, and only 29-32% were obese. These same cut-offs identified 72%, 71%, and 66% of non-Hispanic White, Black, and Hispanic/Latinx with obesity. In comparison, the Asian-specific BMI cut-offs identified 9-14% of Asian females and males with normal weight, 36-41% with overweight, and 51% with obesity; the majority had class 1 obesity. When we further examined weight distribution by Asian subgroup, there were notable similarities between the following subgroups: Filipino and South Asian, Chinese and other Southeast Asian, Japanese and Hawaiian/PI. The Asian subgroups with the highest BMI, Hawaiian/PI (32.1 ±6.9) and Japanese (31.0 ±6.3), more closely resembled non-Asian populations with respect to weight distribution than Asian subgroups with the lowest BMI, Chinese (27.2 ±4.8) and other Southeast Asian (26.2 ±4.0). Using standard/Asian-specific BMI cut-offs, 55/71% and 49/69% of Hawaiian/PI and Japanese adults with diabetes had obesity, compared to only 23/40% and 15/32% of Chinese and other Southeast Asian, respectively.

Conclusions: These data highlight inherent differences between ethnic groups and underscore the importance of disaggregating Asian subgroups when characterizing weight status in this heterogeneous population. Our findings in Asians with diabetes support consideration of optimal BMI intervention thresholds by ethnicity. Further studies should also explore differences by nativity and acculturation on the patterns observed, as well as the influence of weight trajectory on clinical outcomes.

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