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THE ACCURACY OF SELF-REPORTED A1C AMONG PEOPLE WITH TYPE 2 DIABETES

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It is important that people with T2D know their blood glucose and A1c, but evidence is limited on whether they can accurately remember their A1c and whether accuracy is associated with characteristics of the individual. We analyzed baseline data from a study examining the impact of a diabetes self-management mobile app and coaching program on A1c. Study participants needed to have an A1c $\geq 7.5\%$ to be eligible for the study. Potential participants were asked to select a range of A1cs their A1c fell within. If they indicated an A1c $\geq 7.5\%$, they were sent an at-home A1c test kit that was returned to a lab to validate their A1c. Our study cohort for this analysis consists of 628 individuals who completed the A1c test kit. The positive predictive value (PPV) of self-reported uncontrolled A1c ($\geq 7.5\%$) was 79% for this cohort. The PPV of self-reported uncontrolled A1c for individuals who reported their A1c was between 7.5-8.4, 8.5-9.4, 9.5-10.4 and >10.4 was 63%, 85%, 94% and 95%, respectively. Accurate self-reporting of uncontrolled A1c was independently associated with taking insulin (OR 3.06, 95% CI 2.01-4.67) and experiencing moderate diabetes distress (OR 1.56, CI 1.05-2.33). The PPV of being able to accurately report one's A1c value, based on the range selected, was higher among those who self-reported an A1c $>10.4\%$ (PPV of 57%) compared to those who self-reported a lower A1c range (PPV 29-33%). Accurate reporting of one's A1c range was independently associated with taking insulin (OR 1.85, CI 1.33-2.58). Individuals taking oral medications were less likely to accurately report having uncontrolled A1c (OR 0.48, CI 0.27-0.84) or their A1c range (OR 0.58, CI 0.39-0.86). Age, comorbidities, and score on the diabetes empowerment scale were not associated with accurately self-reporting uncontrolled A1c or A1c range. These results suggest self-reported A1c is a reasonable measure of uncontrolled A1c and is more accurate for individuals with a higher A1c.