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Aspirin Use among Individuals with Diabetes in 48 Low-, Middle-, and High-income Countries

K. Yoo[a], S. Bahendeka[b], A. Damasceno[c], J. Davies[d], P. Geldsetzer[e], D. Guwatudde[f], M.D. Huffman[g], J. Manne-Goehler[h], S.S. Moghaddam[i], K. Singh[j], J.B. Sussman[a], D. Flood[a]

[a]*University of Michigan, Medicine, Ann Arbor, USA*
[b]*St Francis Nsambya Hospital, Diabetes & Endocrinology, Kampala, Uganda*
[c]*University of Porto, Department of Public and Forensic Health Sciences and Medical Education, Faculty of Medicine, Porto, Portugal*
[d]*Institute of Applied Health Research, University of Birmingham, Birmingham, United Kingdom*
[e]*Stanford University, Division of Primary Care and Population Health, Stanford, USA*
[f]*Makerere University, Department of Epidemiology and Biostatistics, Kampala, Uganda*
[g]*Washington University School of Medicine, Global Health Center, St. Louis, USA*
[h]*Massachusetts General Hospital, Medical Practice Evaluation Center, Boston, USA*
[i]*Endocrinology and Metabolism Clinical Sciences Institute, Endocrinology and Metabolism Research Center, Tehran, Iran*
[j]*Centre For Chronic Disease Control, New Delhi, India*

Background: In cardiovascular disease (CVD) secondary prevention, aspirin is recommended for most individuals. In the primary prevention of CVD, recent trials have called into question the role of aspirin among individuals with and without diabetes. Understanding population patterns of aspirin use can inform clinical and public health strategies to optimize its use.

Aim: To describe global patterns of aspirin use for the primary and secondary prevention of CVD in people with diabetes.

Method: We conducted a cross-sectional analysis of pooled, individual-participant data from 48 nationally representative health surveys conducted from 2013–2019 in low- (n = 6), lower-middle- (n = 21), upper-middle- (n = 15), and high-income (n = 6) countries. Our sample was non-pregnant individuals aged 40–69 years. Outcomes were the proportion of self-reported aspirin use among people with diabetes for primary prevention and secondary prevention of CVD. We estimated CVD risk among those using aspirin for primary prevention using the 2019 WHO risk prediction equations. Countries were weighted by adult population size.

Results: The pooled sample included 87,433 respondents, among whom 11,778 (15.9% [95% CI 15.0–16.8]) had diabetes. In the overall population with diabetes, aspirin use was 62.3% (54.3–69.7) among individuals with a history of CVD and 18.8% (16.2–21.7) among individuals without history of CVD. By income group, aspirin use among people with diabetes and a history of CVD was 42.2% (31.8–53.3) in low/lower-middle-income countries, 45.4% (33.7–57.6) in upper-middle-income countries, and 80.7% (69.4–88.5) in high-income countries. Among individuals with diabetes using aspirin for primary prevention, 32.5% (25.5–40.3) had CVD risk <10%, 52.7% (44.7–60.6) had CVD risk 10–20%, and 14.8% (11.3–19.2) had CVD risk >20%.

Conclusion: Aspirin was used by fewer than 50% of eligible people with diabetes for the secondary prevention of CVD in low- and middle-income countries, yet one-third of people with diabetes using aspirin for primary prevention are at low predicted CVD risk. There exists both an underuse and overuse of aspirin globally.

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Waist circumference-based measures and their relationship to diabetes risk in 50 low- and middle-income countries

J. Seiglie[a], T. Seuring[b], D. Flood[c], O. Woolcott[d], J. Manne-Goehler[e]

[a]*Massachusetts General Hospital, Department of Medicine, Boston, USA*
[b]*Luxembourg Institute of Socio-Economic Research, Economics, Esch-sur-Alzette, Luxembourg*
[c]*University of Michigan, Department of Internal Medicine, Ann Arbor, USA*
[d]*Ronin Institute, Ronin Institute, Montclair, USA*
[e]*Brigham and Women's Hospital, Department of Medicine, Boston, USA*

Background: Though widely used, body mass index (BMI) is a heterogeneously performing marker of diabetes risk. Waist circumference-based measures more accurately capture central adiposity and thus can improve the assessment of diabetes risk beyond BMI, but there is limited evidence to guide their use in tailored diabetes screening guidelines in many low- and middle-income countries (LMICs).

Aim: In this study, we sought to assess the relationships between two measures of central adiposity, waist circumference (WC) and relative fat mass (RFM), and risk of diabetes across 50 LMICs. We then compare the diagnostic performance of WC, RFM and BMI for diabetes screening.

Method: We performed a pooled, cross-sectional analysis of individual-level data from nationally representative, population-based surveys conducted from 2010–2019. Our sample included non-pregnant participants ≥18 years old who have a BMI ≥18.5 kg/m^2 and <30 kg/m^2. We first used logistic regression to evaluate the relationship between each of these three measures and diabetes status. We then conducted a receiving operating curve (ROC) analysis of each measure, overall and stratified by sex and geographic region. We compared the area under the ROC curve (AUC) for WC, RFM, and BMI using the Somer's D statistic.

Results: The final pooled sample included 133,644 adults among whom 10(%) had diabetes. The mean age of the sample was 45.6 and 54.9% were women. The results of the ROC analysis are shown in Figure 1. Overall, the AUC for WC and RFM were 0.69 for women and 0.67 for men, respectively, compared to 0.63 for BMI in both sexes. There was substantial variation in AUC and both WC and RFM thresholds identified via the Youden Index for each measure by sex and across six world regions.