Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

accounting for established risk factors. Serum Cu is a potential prognostic marker or a risk factor for CVD mortality, however, further studies are needed.
Keywords: Serum copper; cardiovascular disease; obesity; risk factor

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ASPIRIN FOR CARDIOVASCULAR DISEASE PREVENTION AMONG ADULTS IN THE UNITED STATES: TRENDS, PREVALENCE, AND PARTICIPANT CHARACTERISTICS ASSOCIATED WITH USE

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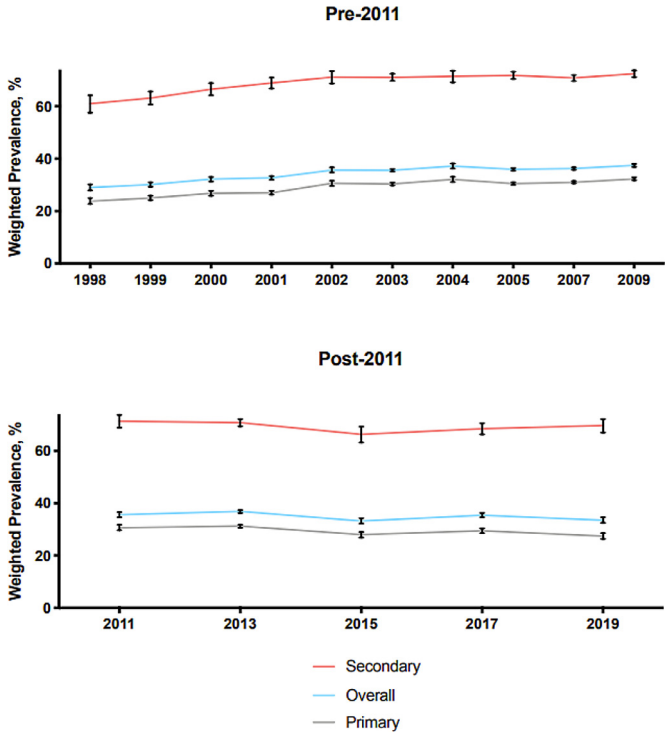
Therapeutic Area: CVD Prevention – Primary and Secondary
Background: Despite the widespread use of aspirin for atherosclerotic cardiovascular disease (ASCVD) prevention in the U.S., limited detailed data exist on trends in use over the last two decades. We examined trends in aspirin use for ASCVD prevention from 1998-2019, and assessed factors associated with its use for primary and secondary prevention.
Methods: Using Behavioral Risk Factor Surveillance System data (1998-2019), we obtained the weighted prevalence of aspirin use for each year and examined trends in use over this period. We used multivariable logistic regression to assess factors associated with aspirin use for secondary prevention, and for primary prevention stratified by low-risk (no traditional ASCVD risk factor) and high-risk (≥3 traditional ASCVD risk factors) groups. We performed all analyses in 2020.



Results: Aspirin use prevalence among adults ≥40 years increased from 29.0% (95%CI, 27.9%-30.2%) in 1998 to 37.5% (36.9%-38.0%) in 2009. However, use has slightly declined over the last decade: 35.6% (34.6%-36.6%) in 2011 to 33.5% (32.5%-34.6%) in 2019. In 2019, 23.4% of adults ≥18 years, reported aspirin use for ASCVD prevention. Among respondents without CVD, 18.6% (17.9%-19.3%) reported aspirin use. Concerningly, 45.6% of adults ≥70 years without CVD reported regular aspirin use, contrary to current guideline recommendations. Additionally, male sex, age ≥70 years, and overweight/obesity were associated with higher odds of primary prevention aspirin use among low-risk individuals. Females and persons <40 years were less likely to report secondary prevention aspirin use.
Conclusion: Despite the slight declines in use over the last decade, aspirin is still widely utilized for ASCVD prevention. There is suboptimal concordance between current guideline recommendations and actual use patterns.
Keywords: Aspirin, Primary Prevention, Secondary Prevention, Trends

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AMERICAN JOURNAL OF PREVENTIVE CARDIOLOGY 7 (2021) 100269

NOVEL TIERED HEART FAILURE STAGING, RISK, AND SOCIAL DETERMINANTS OF HEALTH OF AN URBAN COMMUNITY CLINIC BEFORE AND DURING COVID-19

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Therapeutic Area: Heart Failure
Funding: National Minority Forum for Quality
Background: Heart failure (HF) is a debilitating condition, often preceded by the escalation of cumulative risk over time. The American Heart Association/American College of Cardiology devised a staging classification where Stage A indicates patients (pts) at risk for HF. However, it is unclear whether the degree of HF risk, based on the number of risk factors (RFs) in a population, has any association with indicators of social determinants of health (SDoH) in the era of the COVID-19 pandemic. We sought to examine a novel tiered staging HF risks and the association to SDoH indicators in an urban community clinic between the years 2019 and 2020.
Methods: A clinic cohort-based, cross-sectional sample of 2577 new pts ≥ 18 years of age was identified in a community clinic in Atlanta, GA for the years of 2019 and 2020. Participants were classified by review of electronic health record as follows: Stage 0, healthy; Stage A1, 1 HF RF; Stage A2/B, ≥ 2 RFs OR asymptomatic cardiac structural abnormalities; or Stage C, symptomatic HF per medical history. Selected indicators of SDOH were obtained from medical chart review of social history (22 pts excluded for missing data). Likelihood-ratio Chi-square tests were analyzed to detect an association between SDOH and stages of HF.
Results: The new patients presenting to the clinic in 2019-2020 were primarily African American (93% n=2362), female (72% n=1837), age 49.9±16.4, and single (58% n=1480). In 2019, of the new pts presenting to the clinic (n=1712), 52% (n=894) were Stage 0, 29% (n=480) were Stage A1, 15% (n=261) were Stage A2/B, and 4% (n=77) were Stage C. In comparison with new pts (n=833) in 2020, 58% (n=484) were Stage 0, 22% (n=299) were Stage A1, 16% (n=48) Stage A2/B, and 3% Stage C (p-value 0.005). Overall, pts with A1 or A2/B HF were less likely to present as new pts in 2020, yet more likely to report issues of financial strain when compared to Stage 0 HF pts (p-value 0.001). However, pts with any risk factor for HF were more likely to report issues with transportation and food insecurity in 2020 (p-value 0.001).

Table 1. Baseline Demographics

Demographic, physiological and socioeconomic factors for study sample and comparison between 2019 and 2020 data.

	All	2019	2020
n	2,545	1,712	833
Age (years) mean±SD	49.9±16.4	50.0±16.3	49.6±16.5
Gender (n/%)			
Female	1837 (72.2)	1250 (73.0)	587 (70.5)
Male	707 (27.8)	461 (26.9)	246 (29.5)
Race (n/%)			
African American	2,362 (92.8)	1,590 (92.9)	772 (92.7)
White	87 (3.4)	61 (3.6)	26 (3.1)
Other	96 (4.8)	55 (3.2)	32 (3.8)
Marital (n/%)			
Single	1,480 (58.2)	1004 (58.6)	476 (57.1)
Married	469 (18.4)	289 (16.9)	180 (21.6)
Divorced/Separated	414 (16)	288 (16.8)	126 (15.1)
Widowed	130 (5.1)	95 (5.5)	35 (4.2)
Systolic BP (mmHg) (mean±SD)	129±18	128.2±17.2	130.4±18.8
Diastolic BP (mmHg) (mean±SD)	79±12	78.7±11.9	80.3±12.3
Body Mass Index (mean±SD)	32.0±9.0	32.2±9.1	31.8±8.9
Normal (BMI<25) (n/%)	567 (22.3)	396 (23.1)	171 (20.5)
Overweight (25≤BMI<30) (n/%)	601 (23.6)	390 (22.8)	211 (25.3)
Obese (BMI ≥30 kg/m^2) (n/%)	1,362 (53.5)	919 (53.7)	443 (53.2)
eGFR (mL/min/1.73m^2) AA * (n/%)	98.2±22.7	97.9±23.9	98.5±21.5
≥ 90	120 (4.7)	59 3.4	61 7.3
≥ 60 and ≤ 89	50 (2.0	28 1.6	22 2.6
≥30 and ≤59	8 (0.3	4 0.2	4 0.5
< 30	1 (0.0	1 0.1	0 0
eGFR (mL/min/1.73m^2) non AA* (n/%)	84.9±19.7	84.7±20.7	85.2±18.7
≥ 90	71 (2.8)	39 (2.3)	32 (3.8)
≥ 60 and ≤ 89	91 (3.6)	44 (2.6)	47 (5.6)
≥30 and ≤59	15 (0.6)	7 (0.4)	8 (1.0)
< 30	2 (0.1)	2 (0.1)	0 (0)
Medical history (n/%)			
Hypertension	1,037 (40.7)	735 (42.9)	302 (36.3)
Type 2 Diabetes	437 (17.2)	289 (16.9)	148 (17.8)
Coronary artery disease	74 (2.9)	44 (2.6)	30 (3.6)
Atrial fibrillation	47 (1.8)	28 (1.6)	19 (2.3)
Chronic renal insufficiency	128 (5.0)	92 (5.4)	36 (4.3)
COPD	61 (2.4)	42 (2.5)	19 (2.3)
Heart failure stage (n/%)			
Stage 0	1381 (54.3)	894 (52.2)	484 (58.1)
Stage A/1	1022 (40.2)	480 (28.9)	186 (22.3)
Stage A2/B	142 (5.6)	261 (15.2)	135 (16.2)
Stage C (Heart Failure)	105 (4.1)	77 (4.5)	28 (3.4)
Social, Economic Characteristics**			
Insurance status (n/%)			
Private or commercial	1,242 (48.8)	744 (43.5)	498 (59.8)
Medicare	505 (19.8)	338 (19.7)	167 (20.0)
Medicaid	367 (14.4)	245 (14.3)	122 (14.6)
None	431 (16.9)	385 (22.5)	46 (5.5)

Table 2. Indicators of SDOH

Financial Strain (n/%)			
Yes	194.0 (17.5)	136 (18.9)	58 (14.8)
No	897.0 (80.8)	571 (79.5)	326 (83.2)
Transportation (Medical) (n/%)			
Yes	71 (6.4)	40 (5.6)	31 (7.9)
No	993 (89.5)	654 (91.1)	339 (86.5)
Transportation (Other) (n/%)			
Yes	64 (5.8	36 (5.0)	28 (7.1)
No	980 (88.3)	643 (89.6)	337 (86.0)
Food Insecurity (n/%)			
NO	866 (78.0)	567 (79.0)	299 (76.3)
YES	210 (18.9)	132 (18.4)	78 (19.9)

*eGFR data available for 179, 92 and 87 patients for the entire sample, 2019 and 2020 respectively.
**Social determinants of health data available for 1,110 patients only.

Conclusion: Pts with varying risk for HF are likely to present with SDoH challenges. Understanding the tiered risk of pts at risk for HF in relation to indicators of SDoH and shifts in clinic characteristics during the COVID-19 pandemic may inform future HF prevention strategies of high-risk populations.

Keywords: Heart Failure, Prevention, African American, Social Determinants of Health, Ambulatory Cardiology.

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PERFORMANCE OF EXISTING CARDIOVASCULAR RISK ASSESSMENT TOOLS IN SUB-SAHARAN AFRICA: A SYSTEMATIC REVIEW

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Therapeutic Area: ASCVD/CVD Risk Assessment

Background: Cardiovascular diseases (CVD) are a major public health concern in low- and middle-income countries. Numerous risk assessment tools have been developed, validated, and incorporated into practice in various world regions. However, little is known about the performance of these tools in Sub-Saharan Africa (SSA).

Methods: We conducted a systematic review according to the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines (Figure 1), to identify citations reporting validation data of CVD risk assessment tools SSA. We searched MEDLINE/Pubmed and Embase from inception, through final search updates on May 10, 2021. We also screened the reference lists of included articles. Dual screening, data extraction, and risk of bias assessment were conducted. We followed the Critical Appraisal and Data Extraction for Systematic Reviews of Prediction Modelling Studies (CHARMS) checklist and the Prediction Model Risk of Bias Assessment Tool (PROBAST) for data extraction and risk of bias assessment, respectively.

Results: Out of 3,155 unique citations, we identified three risk assessment tools reported in two citations (Table 1). The three tools included 3,084 participants in total and differed in study design, population, predictors, validation methods and results, and outcome types (Table 2). The INTERHEART Modifiable Risk Score (IHMRS) showed the best discrimination (C-statistic: 0.74 [0.68, 0.79]), followed by the Fasting Cholesterol INTERHEART (FC-IHRS) (C-statistic: 0.66 [0.61, 0.71]), and the Non-Laboratory INTERHEART (NL-IHRS) (C-statistic: 0.62 [0.58, 0.66]). The IHMRS was well-calibrated, while the FC-IHRS and NL-IHRS had to be recalibrated. The NL-IHRS was the only tool that does not require blood collection. All three tools suffered from low event rates. The IHMRS had the highest risk of bias and least applicability to address our research question, due to its non-nested case-control design, while the FC-IHRS and NL-IHRS showed the lowest risk of bias and most applicability due to its prospective cohort design (Table 3).