

## Concerning “The HEARTS app: a clinical tool for cardiovascular risk and hypertension management in primary health care”

Dear editor,

We read with interest the article entitled “The HEARTS app: a clinical tool for cardiovascular risk and hypertension management in primary health care” by Ordunez and colleagues, published on March 28<sup>th</sup>, 2022 (1). This article describes a recently developed app to assess cardiovascular disease (CVD) risk, as well as its use, potential functionality, and validation process. Despite the central role of the HEARTS initiative in the Americas and in the vulnerable region of Latin America and the Caribbean (LAC), we believe that the interpretation of the findings of this study requires some caution. There are some methodological issues in this manuscript that could compromise the strong conclusion that “the HEARTS app is an essential step in the journey towards eliminating preventable CVD in the Americas.”

First, the risk prediction models that inform this app are derived from 85 cohorts from high-income countries in the Emerging Risk Factors Collaboration study (2). Of these, we were only able to identify the Puerto Rico Heart Health Program study as directly representative of the LAC region. Therefore, the lack of representativeness of the models for risk-prediction should be made more explicit. At the same time, the important role of the STEPwise approach to surveillance to obtain population-level indicators and trends, as well as calibration of the risk-prediction models should be both considered as potential solutions to this issue.

Second, the authors state that “the app is intended to be used in clinical practice, especially at the primary health care level” although it can also “be used by anyone in the general population.” If the use of the app is available to the general public, this could systematically exclude underrepresented groups by creating differential engagement and generating digital inequity (3). Hence, the “ideal” target population of the app in low- and middle-income countries should be specified.

Third, the language of the article should reflect the uncertainty regarding the long-term success of this digital health application in the region, which will likely depend on how it is implemented and maintained over time, and the promptness of the initiation of effective pharmacological treatment after the

obtention of a risk score. Several barriers to the implementation of CVD risk calculators in primary care have been described, including time constraints, lack of electronic health records integration, and patient fears (4). Low-resource contexts potentially require tailoring of the app to address some of these barriers and ensure sustainability.

The burden of CVD in LAC, estimated at 3 497.14 disability-adjusted life years per 100 000 (range, 3 226.2 – 3 790.1), appears to be highly influenced by the years lived with disability due to ischemic heart disease (5) and by the increasing impact of high systolic blood-pressure ( $\geq 110$ -115 mmHg according to the Global Burden of Disease definition) as the leading mortality risk factor in the region. This public health scenario presents both a tremendous challenge and an opportunity for improvement. The HEARTS app is a promising driver of change. However, its validity should be evaluated in view of some methodological caveats and its implementation capacity should stress the letter “A” of its acronym to advocate for equitable “access to essential medicines and technology” in places where the availability and affordability of generic drugs is still scarce.

**Conflicts of interest.** None declared.

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A response to this letter is available at: <https://doi.org/10.26633/RPSP.2022.91>

## REFERENCES

1. Ordunez P, Tajer C, Gaziano T, Rodriguez YA, Rosende A, Jaffe MG. The HEARTS app: a clinical tool for cardiovascular risk and hypertension management in primary health care. *Rev Panam Salud Publica*. 2022 Mar 28;46:e12. <https://doi.org/10.26633/RPSP.2022.12>
2. World Health Organization cardiovascular disease risk charts: revised models to estimate risk in 21 global regions. *Lancet Glob Health*. 2019 Sep 2;7(10):e1332–45.
3. Timmermans S, Kaufman R. Technologies and Health Inequities. *Annu Rev Sociol*. 2020;46(1):583–602.

4. Tuzzio L, O'Meara ES, Holden E, Parchman ML, Ralston JD, Powell JA, et al. Barriers to Implementing Cardiovascular Risk Calculation in Primary Care: Alignment With the Consolidated Framework for Implementation Research. *Am J Prev Med.* 2021 Feb 1;60(2): 250–7.
5. Vos T, Lim SS, Abbafati C, Abbas KM, Abbasi M, Abbasifard M, et al. Global burden of 369 diseases and injuries in 204 countries and territories, 1990–2019: a systematic analysis for the Global

Burden of Disease Study 2019. *Lancet.* 2020 Oct;396(10258): 1204–22.

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