Non-communicable Diseases and Risk Factors among People Living With HIV in Cambodia

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BACKGROUND

HIV and antiretroviral therapy (ART) had been associated with increased risk of non-communicable diseases (NCDs) such as diabetes and hypertension alongside other well-established traditional risk factors. Empirical evidence from low- and middle-income countries (LMICs) on this relationship are scarce. Therefore, we examined the prevalence of NCDs in people living with HIV (PLWH) and the general population in Cambodia to assess the contribution of HIV and ART on NCDs and identify if locally adapted policies and/or interventions are needed.

METHODS

We merged data from two surveys conducted among PLWH (n=510) and the general population (n=2747) by KHANA Center for Population Health Research (nongovernmental organization) in 2015 and by the University of Health Sciences in 2016, respectively. Both employed a standardized questionnaire and physical/biochemical measurement protocols developed by the World Health Organization (STEPwise Approach to Surveillance or STEP survey or STEPS) and were conducted across selected provinces in Cambodia. We computed NCD prevalence and performed logistic regression to examine the relationship between NCDs and HIV while adjusting for age, sex, residence types, behavioral risk factors (such as smoking, heavy alcohol consumption, consuming less than 5 servings of fruits and vegetables and low physical activity) and body mass index (BMI).

Table 1: Distribution of NCDs among study participants.

Characteristics	PLWH (n=510)		General Population (n=2747)	
	n	%	n	%
Prediabetes	255	55.2	374	16.1
Diabetes	46	9.1	185	7.4
Prehypertension	148	33.5	810	38.0
Hypertension	67	13.2	600	22.0
Borderline-high cholesterolemia	93	18.9	671	32.3
High cholesterolemia	16	3.2	517	19.9

The prevalence of *prediabetes* and *diabetes* among PLWH was *55%* and *9%*, compared to *16%* and *7%*, respectively, among the general population.

RESULTS

The prevalence was 9% (n=46) for diabetes, 13% (n=67) for hypertension and 3% (n=16) for high cholesterolemia among PLWH, all of which (except diabetes) were lower than that of the general population. Half of PLWH had prediabetes compared with only 16% of the general population. In logistic regression, PLWH were more likely to present prediabetes, aOR=6.94 (95% CI: 5.41, 8.90) and diabetes, aOR=1.41 (95% CI: 0.95, 2.09), and less likely to present hypertension and high cholesterolemia, aOR=0.59 (95% CI: 0.42, 0.81) and aOR=0.13 (95% CI: 0.08, 0.23), respectively.

Figure 2: Blood glucose and total blood cholesterol among study participants by age.

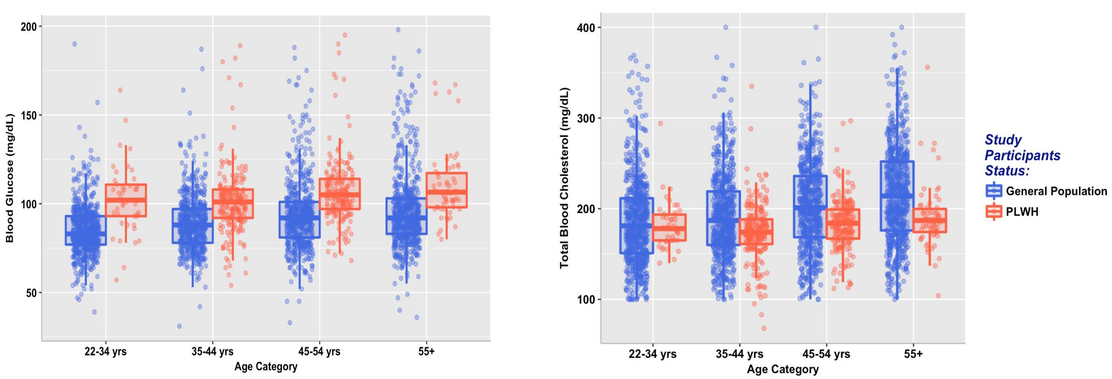
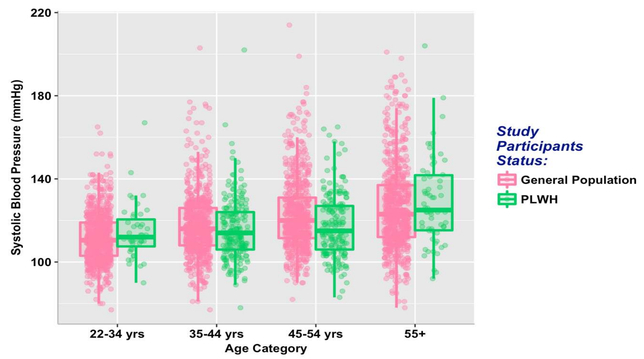


Figure 3: Systolic blood pressure among study participants by age.



CONCLUSIONS

In Cambodia, compared to the general population, PLWH had an alarmingly high prevalence of prediabetes and, to a lesser extent, diabetes, while hypertension, prehypertension, high and borderline-high cholesterolemia appeared to be significantly lower. Differences in the host factors, the ART regimen and the traditional risk factor distribution could explain these contrasting findings in certain conditions in most Western studies. Our findings underscore the need to put in place proper measures to address prediabetes to prevent or delay the onset of diabetes and other long-term complication such as cardiovascular disease.

ADDITIONAL KEY INFORMATION

Conflicts of Interests: None declared.

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