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## INTRODUCTION

Heat exposure is a common occupational health hazard for small-scale farmers<sup>1</sup>. However, little is known about heat-related illness (HRI) among farmers, especially in developing countries<sup>2</sup>.

## OBJECTIVE

This study aims to examine the prevalence of HRI and its associated factors among small-scale farmers in Central Vietnam.



## METHODS & MATERIALS

A cross-sectional study was conducted with **379** farmers from Aug-Sep 2021 in Hatinh province, Vietnam (Figure 1). The study use a structured questionnaire to collect demographic information, farming activities, the level of heat exposure, and participants' health issues over the previous harvest season (Aug 2021). Multivariate logistic regression was used to identify risk factors for self-reported HRI. SPSS 26 was used to analyse the data.

## RESULTS

Among farmers surveyed, 83.9% experienced at least one HRI symptom and 56.2% had two or more symptoms. The most common HRI symptom was Headache (69.9%) (Figure 2)

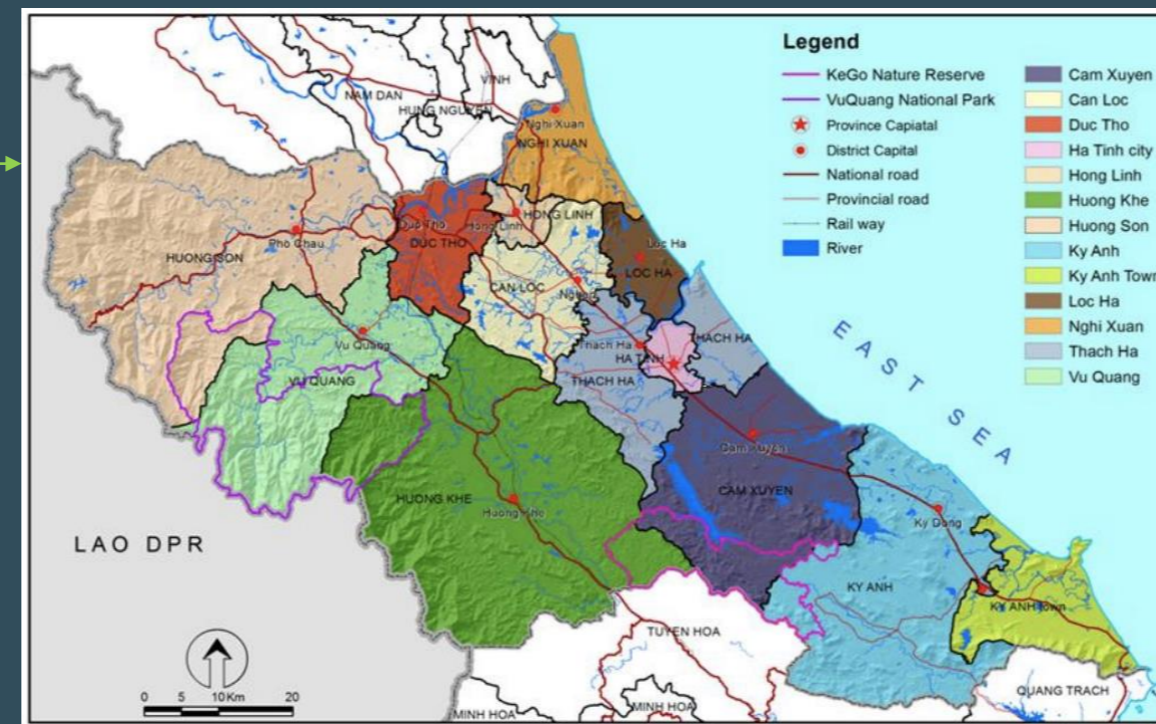


Figure 1- Map- Hatinh Province, Vietnam

Factors significantly associated with two or more HRI symptoms were age, farming tasks, having Cardiovascular disease, Hypertension, and the number of hours working in the heat (Table 1). Farmers working 4 hours or more between 8 am-4 pm were 2.3 times [95%CI: 1.2-4.2] more likely to experience HRI than those working less than two hours. A higher risk of HRI symptoms was also associated with the heavy working task: (OR=2.3 [1.4-3.9]), having cardiovascular diseases (OR= 2.6 [1.1-6.5]), and having Hypertension (OR=3.3 [1.7-6.4]). In contrast, a lower risk of HRI was found among those 60+ years old (OR=0.5, [0.3-0.9]).

Table 1- Factors associated with  $\geq 2$  HRI symptoms

Factors	Univariate logistic regression		Multivariate logistic regression		
	ORs	P value	Adjusted ORs	95%CI	
<b>Age over 60 years old</b>	0.602	0.019	<b>0.539</b>	0.327	0.890
<b>Male</b>	0.361	<0.001	0.602	0.286	1.267
<b>Married</b>	0.944	0.833			
<b>Higher education</b>	0.791	0.338			
<b>Religion (Others)</b>	0.616	0.476			
<b>BMI</b>	1.134	0.778			
<b>Overweight/obesity</b>					
<b>Heavy task</b>	2.783	<0.001	<b>2.330</b>	1.371	3.960
<b>Cardiovascular diseases</b>	3.158	0.009	<b>2.625</b>	1.058	6.513
<b>Hypertension</b>	2.727	0.001	<b>3.305</b>	1.701	6.422
<b>Diabetes</b>	0.694	0.417			
<b>Daily working in heat</b>		0.002			
	< 2 hours (Ref)	1.716	0.057	1.577	0.865
	From 2- ≤4 hours	2.739	<0.001	<b>2.262</b>	1.205
≥ 4 hours				2.827	4.247
<b>Drinking alcohol</b>	0.546	0.309			
<b>Current smoking</b>	0.155	0.004	0.455	0.054	1.085

## CONCLUSION

A high prevalence of HRI symptoms occurred among small-scale farmers in Vietnam. Changing the working schedule to reduce heat exposure should be considered in HRI prevention strategies, especially for farmers with chronic conditions such as Cardiovascular diseases and Hypertension

## Reference:

1. Heinzerling A, Laws RL, Materna B, Harrison R. Risk factors for occupational HRI among California workers, 2000–2017. AJIM. 2020;63(12):1145-54.
2. Sadiq LS, Osman M. The impact of heat on health among maize farmers in a tropical climate area. JEPH. 2019;1;2019.

Figure 2. Heat-related illness symptoms among farmers, Vietnam

