

## INTRODUCTION

- Globally, tobacco and alcohol abuse are the most highly prevalent addictive behaviors and rank in the top ten addictive substances.
- In the Western Pacific Region, there is emerging data that cigarette smoking and alcohol use is a "polydrug" behavior among young men, and their initiation is occurring at about the same age.
- Such trends raise the possibility of targeting risk factors in prevention programs at the community and individual levels.
- We considered the association between alcohol and tobacco in the first nationally representative tobacco survey of Lao People's Democratic Republic.

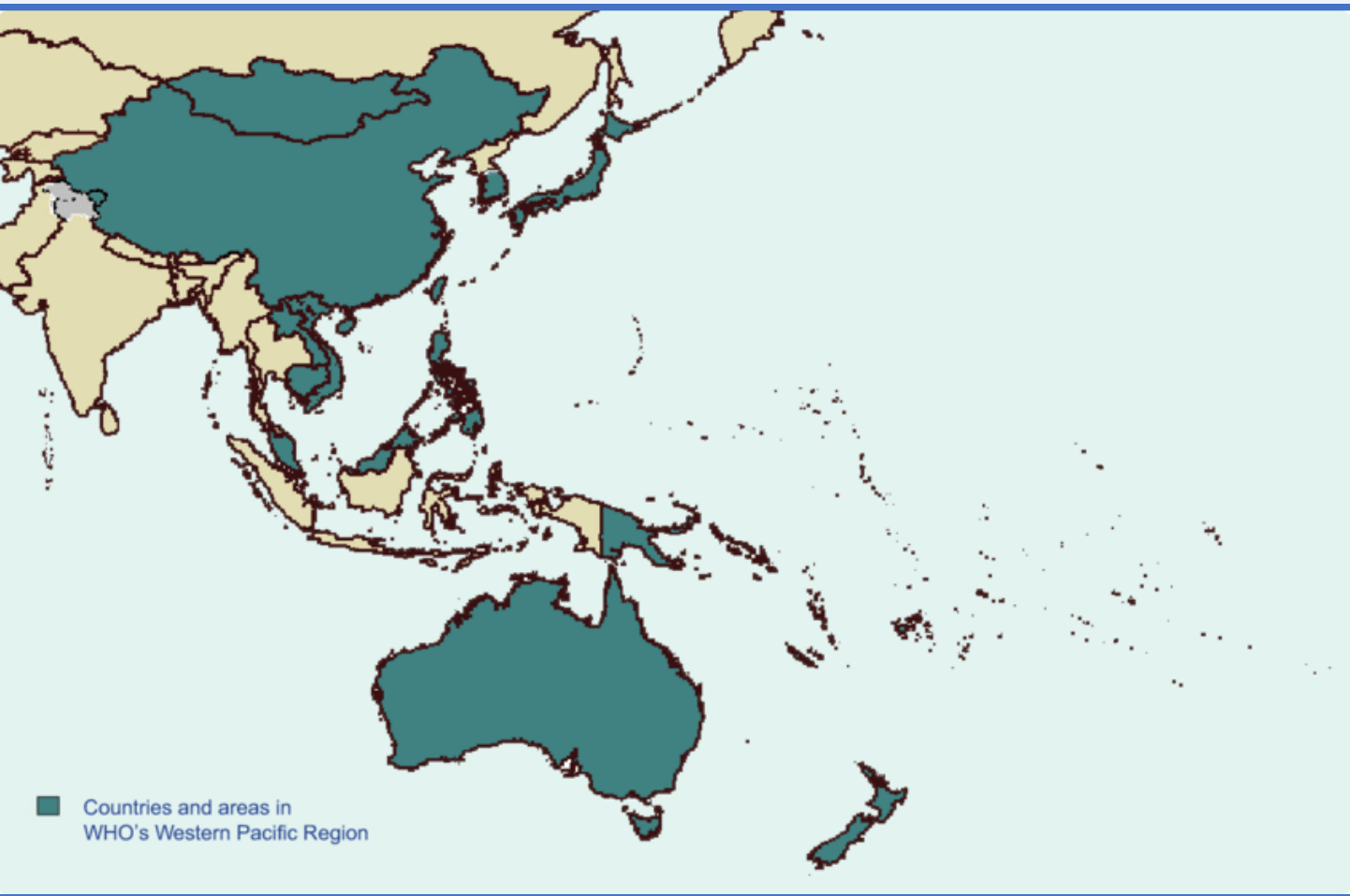


Figure 1. Western Pacific Region

## AIMS

1. Examine the association between current smoking and alcohol abuse
2. Examine the association between current smoking and alcohol abuse by demographic variables

## METHODS

- We analyzed data from the 2012 National Adult Tobacco Survey (NATSL) of Lao PDR
- NATSL completed in 2013 by Lao Statistics Bureau, Ministry of Health (CIEH Office), and Loma Linda University
- Multi-stage stratified cluster sample of 9706 subjects from 2822 households located in all 17 provinces.
- Tobacco items adapted from the Global Adult Tobacco Survey format and administered to all teens and adults ages 15 years and older.
- Smoking was defined as daily or less than daily smoking of cigarettes, cigars, or pipes.
- Alcohol measured in number of drinks over a 7-day interval (beer, wine, liquor, and homemade palm liquor)
- Alcohol abuse defined >14 drinks/week for males and > 7 drinks/week for females
  - National Institute on Alcohol Abuse and Alcoholism (NIAAA) definition.

**Presenters have no conflicts of interest to disclose.**  
**Funding:** This work was supported by NIH/Fogarty grants 5R03TW007345-03 (PI: Singh) and 2R01TW005964-06 (PI: Singh). Contact: psingh@llu.edu



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## RESULTS

- Alcohol abuse rates > among males vs females
- Sharp increase in alcohol abuse among 15-19 to 20-34-year-olds
- Highest rate alcohol abuse in >\$1.90/ day income level
- Current smoking is significantly associated with alcohol abuse among overall sample and male subpopulation but not female subpopulation
- Smokers and alcohol abusers tend to be rural older males earning <\$1.90/day
- Overall, significant 66% increase in odds of smoking if alcohol abuse is present
- Young lower-income level males with alcohol abuse have a 20 fold increase in odds of cigarette smoking
- Non-alcohol abuse males from the youngest subpopulation earning >\$1.90/day show a protective effect against smoking
- Overall increase in odds of smoking among alcohol abuse subpopulation with increase in age but not income

## DISCUSSION

- Clustering effect in lower-income young and older males with strong association between smoking and alcohol abuse allows targeted prevention programs.
- Possible interventions: 1) Increased taxation on cigarettes and alcohol; 2) Smoke-free areas
- Limitations: Temporal trends; Tobacco use items from validated survey while validity of alcohol items unknown

Table 1: Prevalence of current smoking presented by categories of alcohol abuse and demographic variables in a nationally representative sample from Lao PDR (N=9706)

Variable	Alcohol Abuse (n=1093) (SD)	No Alcohol Abuse (n=8389) (SD)
All	34.06% (0.31, 0.38)	23.74% (0.20, 0.28)
Gender		
Male	90.19% (0.85, 0.94)	79.60% (0.72, 0.85)
Female	9.81% (0.07, 0.15)	20.40% (0.15, 0.28)
Age		
15-19	3.52% (0.02, 0.07)	6.19% (0.03, 0.11)
20-34	33.01% (0.27, 0.39)	32.38 (0.29, 0.36)
35-44	31.31% (0.26, 0.37)	23.19% (0.21, 0.26)
45 >=	32.15% (0.26, 0.39)	38.24% (0.33, 0.44)
Income		
< \$1.90 per day	20.24% (0.14, 0.28)	42.31% (0.33, 0.52)
>= \$1.90 per day	79.76% (0.72, 0.86)	57.69% (0.48, 0.67)
Residence		
Urban	26.24% (0.17, 0.39)	18.18% (0.12, 0.26)
Rural	73.76% (0.61, 0.83)	81.82% (0.74, 0.88)

Table 2: Current Smoking Associated with Alcohol Abuse, Income and Age among Males (OR, 95% CI)

	Alcohol Abuse		No Alcohol Abuse	
	Income:		Income:	
Age	< \$1.90 per day	>= \$1.90 per day	< \$1.90 per day	>= \$1.90 per day
15-19	2.43 (0.65,9.05)	0.87 (0.18, 4.23)	-	0.43 (0.27, 0.70)
20-34	6.96 (2.44,19.79)	3.81 (1.74, 8.35)	4.44 (2.89, 6.83)	2.27 (1.17, 4.40)
>=35	16.24 (6.36, 41.48)	7.39 (3.64,15.01)	10.44 (6.25, 17.44)	5.89 (3.02, 11.48)

**Conclusion: Current Alcohol Abuse and Smoking are most common in older males living in poverty. Policy initiatives aimed at taxation of these products need further implementation.**