



# Comparing National Surveys on youth alcohol use in Italy: a matter of convergence

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# Introduction

## ***LONG TERM TRENDS SURVEYS***

### ***Prevalence***

Population surveys show prevalence as the most basic and concise information.

### ***Trends***

Evolution of prevalence over time comes next. Trends show evolution over time. A lot can be gained from the study of long terms trends based on the the analysis of simultaneous studies.

### ***Many surveys, greater informative power?***

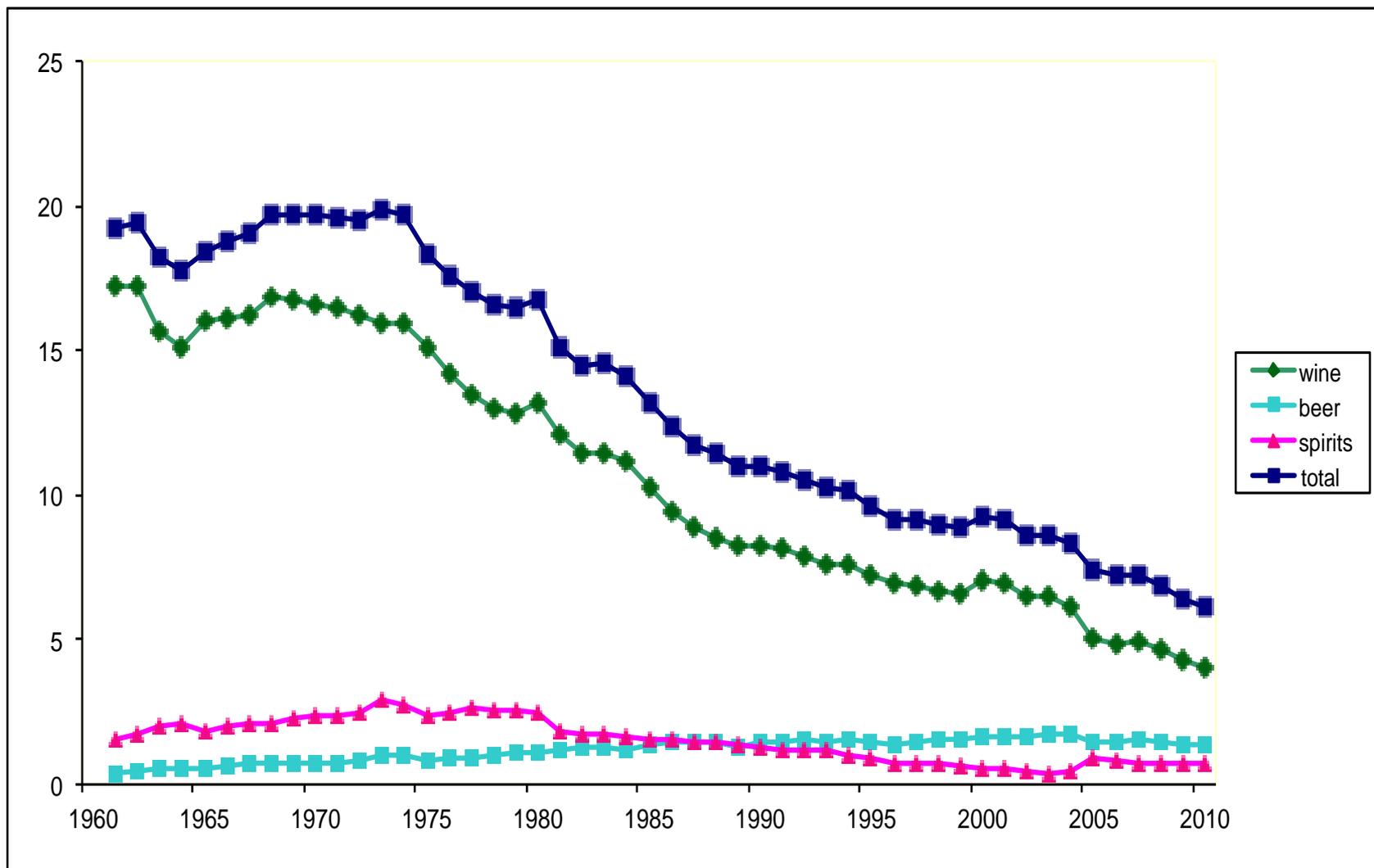
When several different studies on the same population are available it is tempting to look for a multiple confirmation. But this is tricky: integrating different simultaneous surveys can be challenging because of the differences of each survey etc.

### ***Simultaneous examination of different surveys***

To overcome this difficulties it is necessary an approach to trend evaluation capable of maximising the statistical significance of the data. When samples are representative, trends are evaluated on a simple year by year percentage change. This measure is often statistically significant but it cannot account for small year variations or, more importantly, for local inversions (upward or downward) of the trend over the period.

**This study explores the advantages and the limits of an approach to long term trends analysis based on Joinpoint regression technique.**

# Alcohol consumption trends (wine, beer, liquors) as litres of pure alcohol, 15 years and over, Italy, 1961-2010. (WHO, 2011)



# Research Questions

1. Does analysis of different surveys provide interesting insights to the study of trends?
2. To what extent analysing trends adds up to the understanding of relevant phenomena?
  1. What can be learned from such an analysis?

# Methods and Analyses

## *Survey data*

- ESPAD® Italia (*The European School Survey Project on Alcohol and Other Drugs*)
- IPSAD® (*Italian Population Survey on Alcohol and Other Drugs*)
- Multiscopo-ISTAT, Aspetti della vita quotidiana
- Doxa-OPGA Gli italiani e l'alcool. Consumi, tendenze e atteggiamenti in Italia
- HBSC (*Health Behaviour in School-aged Children*)

# Methods and Analyses

## Survey characteristics

**Table 1: Survey characteristics**

Survey	Organization	Target population	Timing	Age of investigation	Years of investigation	Setting	Study design
DOXA-OPGA	Osservatorio Permanente Giovani e Alcool	general population ≥13 years old	every 5 years (last available: 2010)	15-34 years	2000 2005 2010	Home	Face-to-face interview
MULTISCOPO-ISTAT	Italian National Institute of Statistics - ISTAT	general population ≥11 years old	every year	15-17 years 18-24 years 25-34 years	From 2000 to 2012 (except 2004)	Home	Face-to face interview + self-administered questionnaire
IPSAD®	Institute of Clinical Physiology of the National Research Council IFC-CNR	general population 15-64 years	every 2/3 years	15-17 years 18-24 years 25-34 years	2003-2004 2005-2006 2007-2008 2010-2011	Home	Anonymous self-administered postal questionnaire
HBSC	University of Turin and Istituto Superiore di Sanità	students population 11,13,15 years	every 4 years	15 years	2001-2002 2005-2006 2009-2010	School	Anonymous self-administered questionnaire
ESPAD®Italia	Institute of Clinical Physiology of the National Research Council IFC-CNR	students population 15-19 years	every year	15-17 years 18-19 years	From 2000 to 2013	School	Anonymous self-administered questionnaire

# Methods and Analyses

## *Joinpoint Analysis*

Joinpoint is a method used to improve the understanding of series of data in a trend. It allows a simultaneous treatment of each relevant variable in a time series and hence can be used to follow simultaneously data originating from different surveys (with the proviso that they describe similar populations).

### *Joinpoint in a nutshell*

- *For each survey's relevant variable the SW partitions the series of yearly values into segments. For each segment, observed values are modeled as a line and adjacent lines could meet at a "joinpoint".*
- *Trends for each series are represented as an estimated annual percentage (ACP) at the .05 level.*

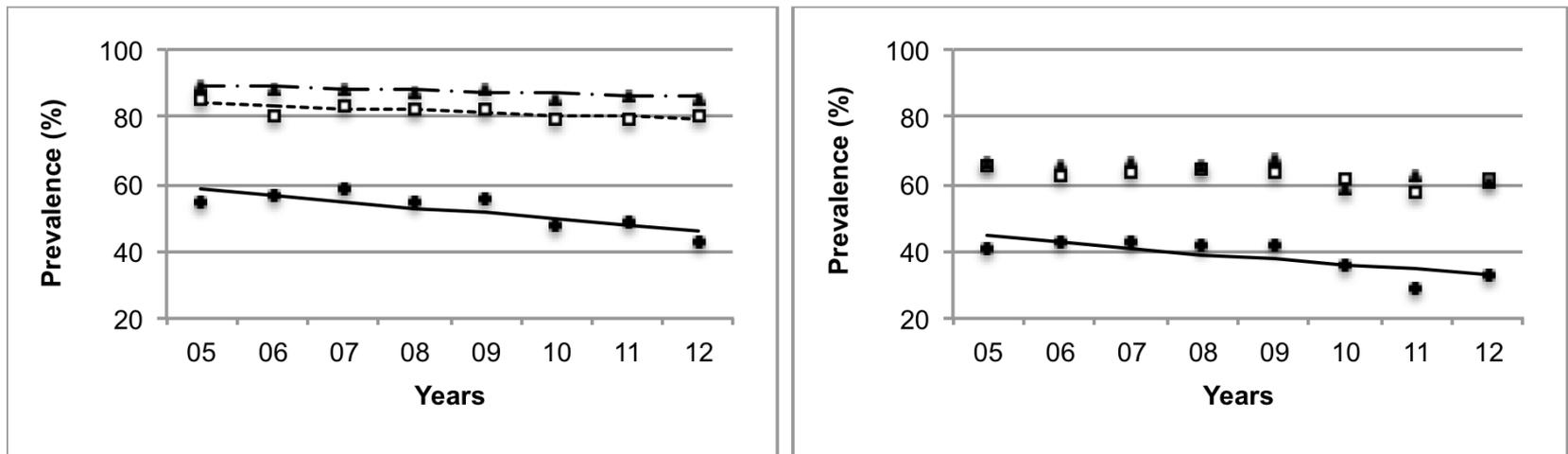
The analyses have been carried out using *joinpoint regression SW 4.4.1*.

# ISTAT and ESPAD: joinpoint analysis

For ISTAT and ESPAD Italia a joinpoint based prevalence trend calculation was done.

## *Alcohol Use (ISTAT)*

Figure 2. Multiscopo-ISTAT: last 12 months alcohol prevalence. Trend 2005-2012 (• 15-17 yrs, □ 18-24 yrs, ▲ 25-34 yrs). Left side: males; Right side: females.



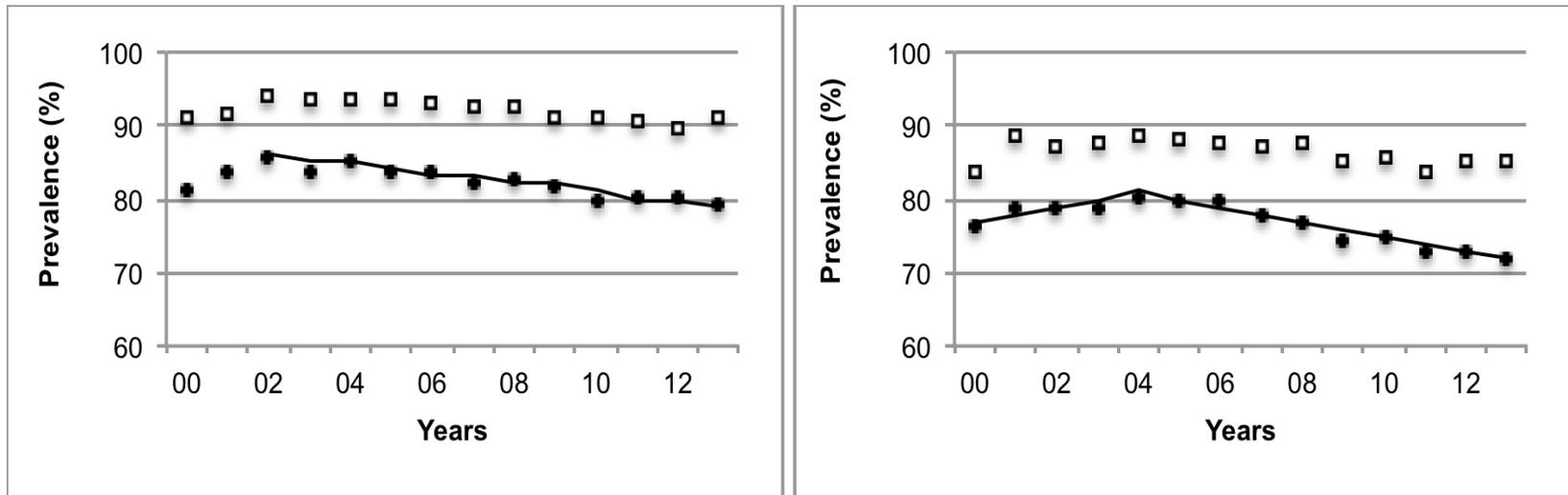
Prevalence in the ISTAT surveillance shows that *recent use* (last year) decreased between 2005 and 2012 for both sexes (Male, APC: -3,4%, Female, APC:-4,3%) in the 18-24 yrs interval. *Current Use* (last 3 days) decreased in the 15-17 interval (Male, APC: -1,2%, Female, APC: -2,3 %).

# ISTAT and ESPAD: joinpoint analysis

For ISTAT and ESPAD Italia a joinpoint based prevalence trend calculation was done.

## *Alcohol Use (ESPAD)*

Figure 1. ESPAD®Italia: last 12 months alcohol prevalence. Trend 2000-2013 (• 15-17 yrs, □ 18-19 yrs). Left side: males; Right side: females.



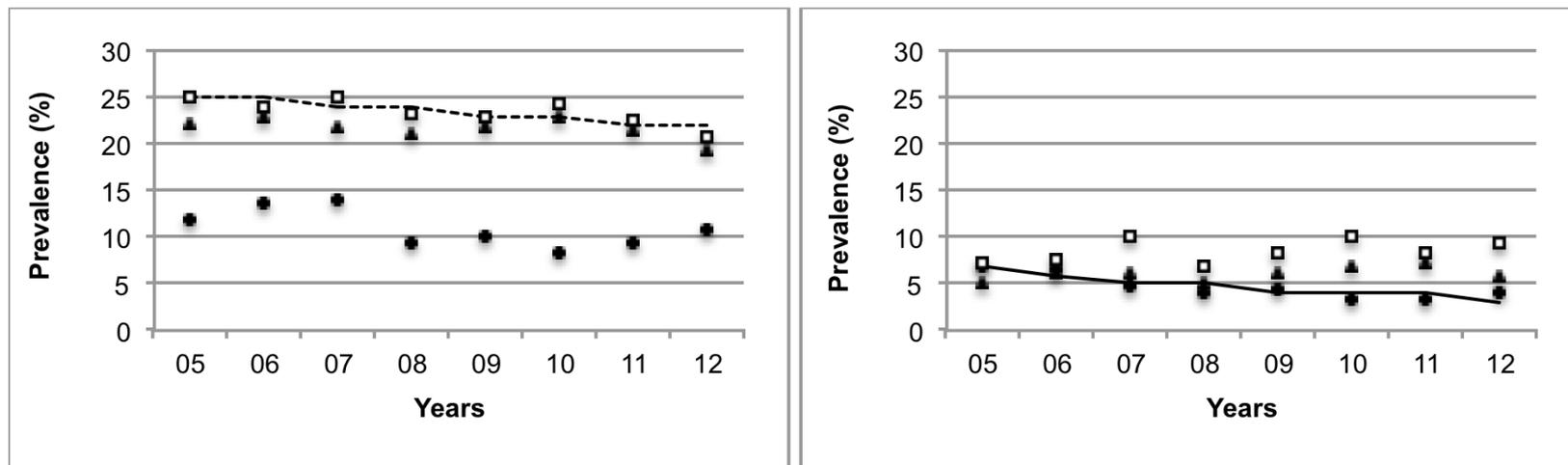
Prevalence in the ESPAD Italia study decreased in the observed period in the recent use of the 15-17 year old class: Males, APC: -0,7%, Females, APC: -1,3% ).

# Istat and ESPAD: joinpoint analysis

## *Ebriety, drunkenness, intoxication, heavy episodic drinking (ISTAT Multiscopo)*

Figure 5. Multiscopo-ISTAT: *episodic heavy drinking* in the last 12 months. Trend 2005-2012 (• 15-17 yrs, □ 18-24 yrs, ▲ 25-34 yrs)

Left side: males; Right side: females.



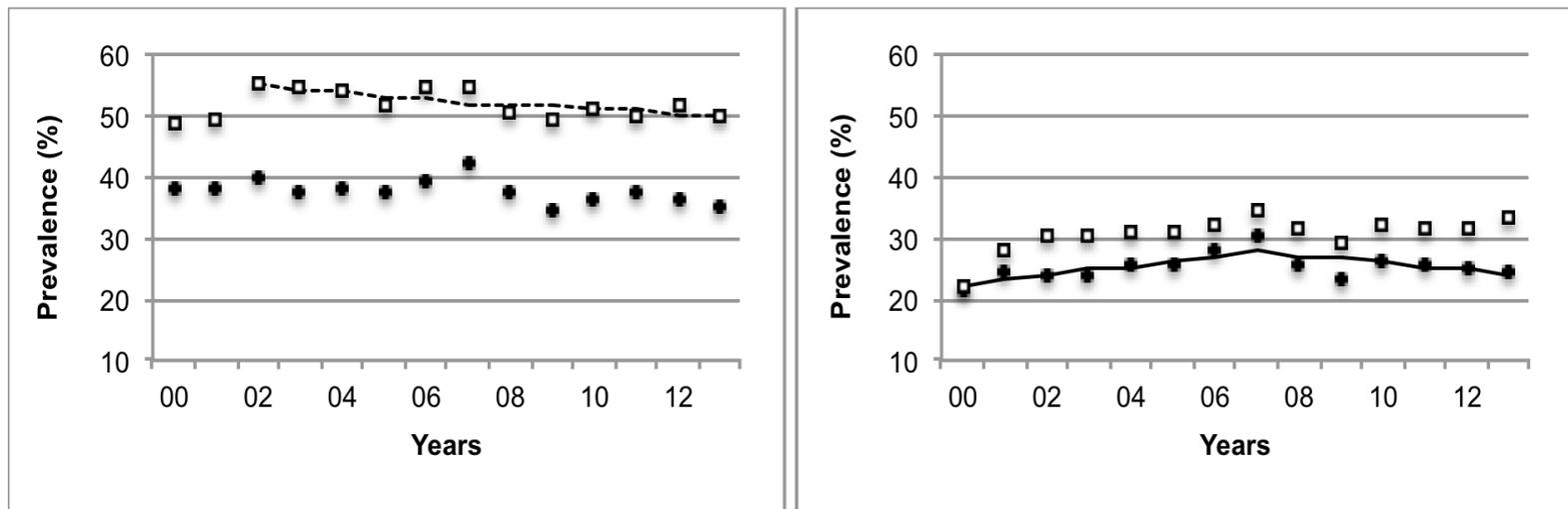
Heavy drinking prevalence in the ISTAT Multiscopo study there is a drastic decrease among females aged 15-17 ys (Females, APC: -9.8%) and males in the 18-24 ys, (Males: -1.9%).

# Istat and ESPAD: joinpoint analysis

## *Ebriety, drunkenness, intoxication, heavy episodic drinking (ESPADItalia)*

Figure 6. ESPAD®Italia: *episodic heavy drinking* in the last 30 days. Trend 2000-2013 (• 15-17 yrs, □ 18-19 yrs)

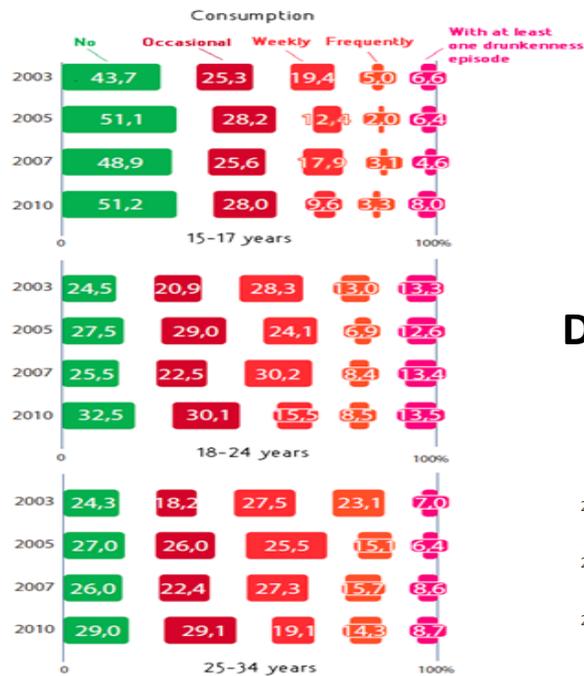
Left side: males; Right side: females.



Heavy drinking prevalence in the ESPAD Italia study shows among females in the 15-17 age interval a constant increase (Females, APC: 3,3%) until 2007 followed by reduction in the following period; the masculine population in the 18-19 age interval presented a slight decrease (Males, APC: -0,8%).

# ESPAD Italia, IPSAD, DOXA: cluster analysis

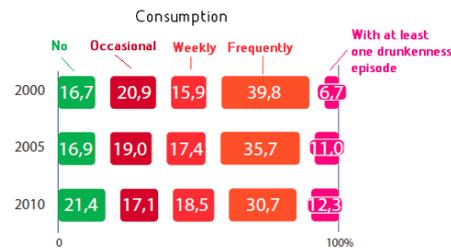
## IPSAD®: Drinking patterns



## ESPAD®Italia: Drinking patterns



## Doxa: Drinking patterns



# Discussion

Looking at different surveys covering comparable populations over time allows:

- a closer scrutiny of the aims of each survey focusing on the similarities and differences, allowing explanations that are common to several populations
- In some subpopulations a substantial convergence in the macro-trend appears confirmed, namely a continuous reduction of consumption and abuse with certainty from 2007 for younger females

...but...

*it is less clear how converging trends in prevalence can impact the understanding of associated outcomes, for instance alcohol mortality or health related outcomes in other epidemiological studies.*

# Conclusions

- time serialized data are welcomed by researchers because they provide trend analysis;
- putting together different trend analyses on the same population could be an option, provided certain conditions are met;
- when comparisons are possible, certain phenomena can be more properly understood and certain relation can be reinforced;
- grounded comparisons of trends help understanding differences not less than similarities;
- we can confirm that population surveys trends in Italian population alcohol consumption decline in several investigations;
- analysing trends within different typologies of consumers – not relying simply on prevalence – can help better targeting of interventions towards specific populations.

...and...

*policy evaluations can benefit from simultaneous long term analyses, although the underlying structure of alcohol use/abuse trends always require a mix of approaches both qualitative and quantitative.*

# Contacts

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