

Effect of occupational health & safety education during schooling on the occurrence of workplace injuries in young people starting their professional career

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Background

- Young people are more injured than the other employees from all age groups, but workplace injuries (WIs) are usually less serious
- Employments and working conditions are strong determinants of WI
- Standard profile : man, labour worker, young, temporary worker, recently hired
- Prevention program=> Occupational Safety and Health (OSH) education
 - In France, INRS participates in a partnership between the ministry of education and the national health insurance fund
 - > INRS participates in OSH skills integration into vocational education diplomas
- However, the contribution of OSH education in reducing WIs incidence is not known

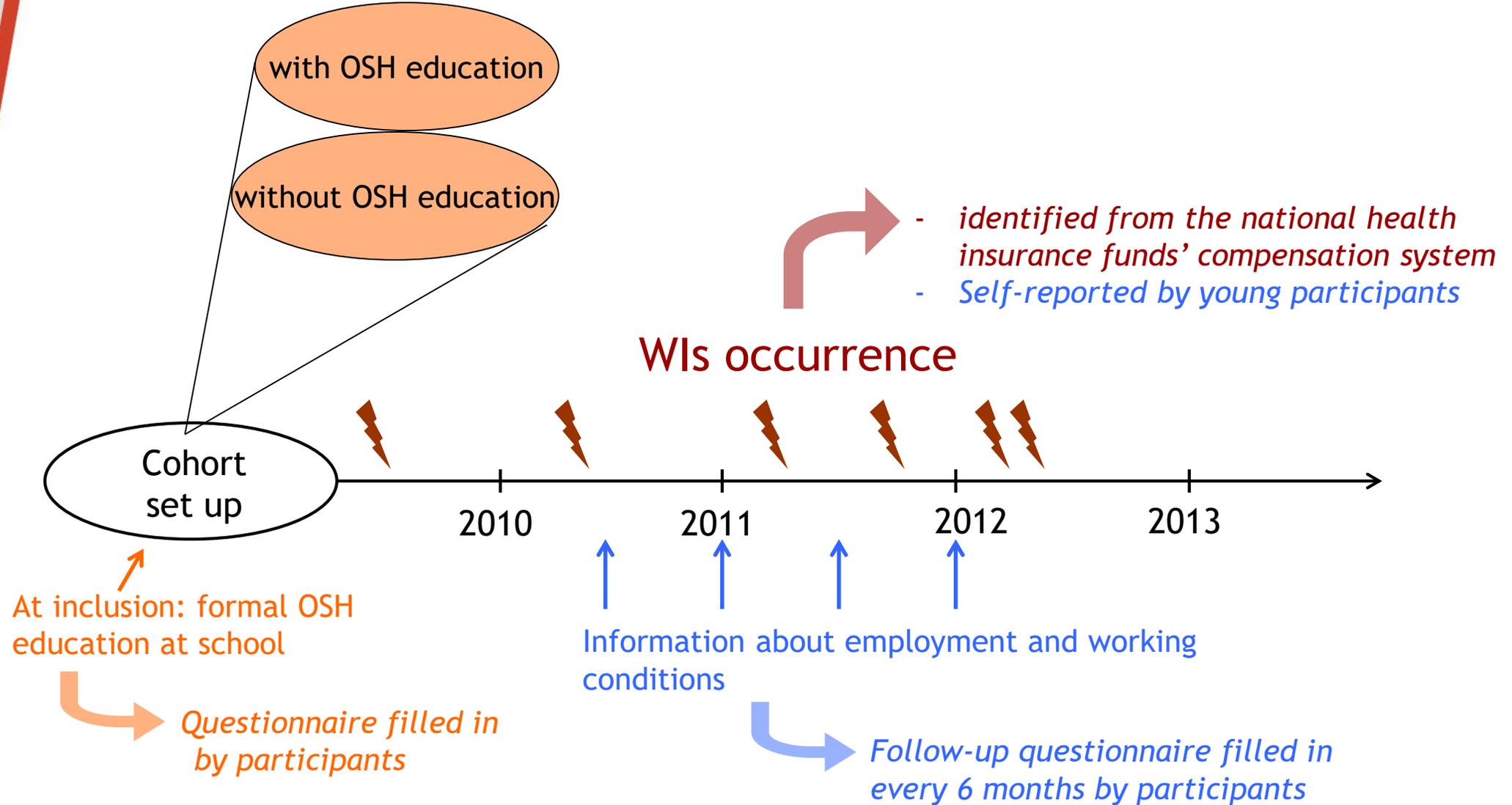
Objectives

- To assess the effect of OSH education during formal schooling on the incidence of workplace injuries (WIs) in young people starting their careers
 - => The hypothesis is that young people who had **received OSH education** during their schooling would have **fewer WIs than** those who received **no OSH education**
- Secondary objectives: effect of
 - “First aid at work” training during schooling
 - the conditions encountered upon arrival in the company
 - > occupational hazard information
 - > safety training
 - > job task training

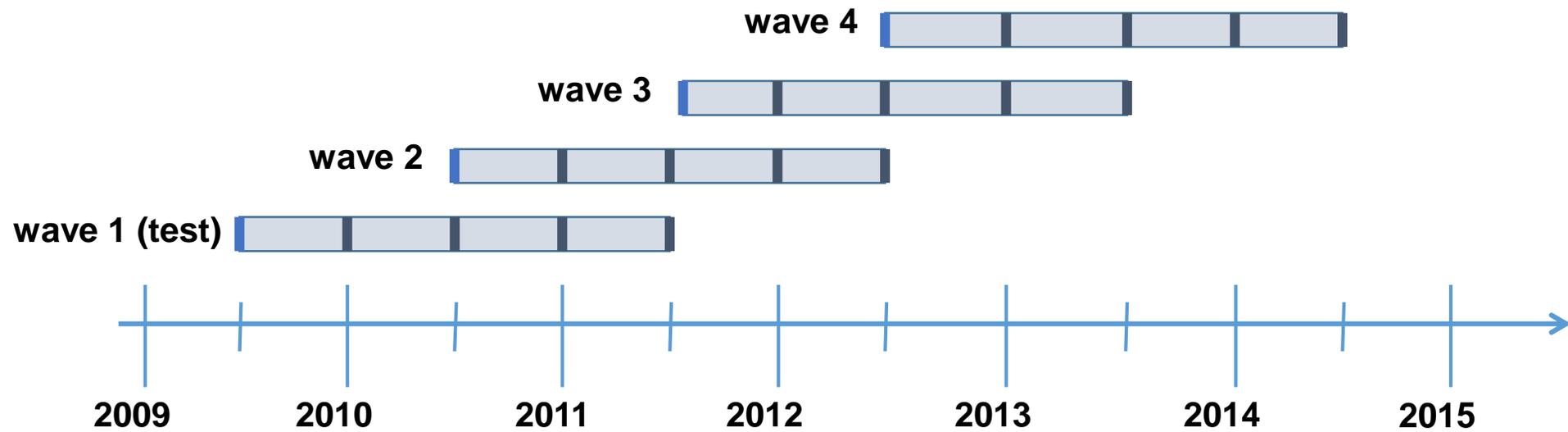
Methods

- Prospective cohort study, with a follow-up period of 2 years
- Study population:
 - French young people at the end of their vocational education before entering working life
 - apprentices (spending about 50% of their time at school) or students (with only limited internships in companies)
- Inclusion criteria:
 - In paid employment less than 2 years after leaving school
- Exclusion criteria:
 - Return to education after inclusion
 - Unemployed during 2 years

Study design and data collection

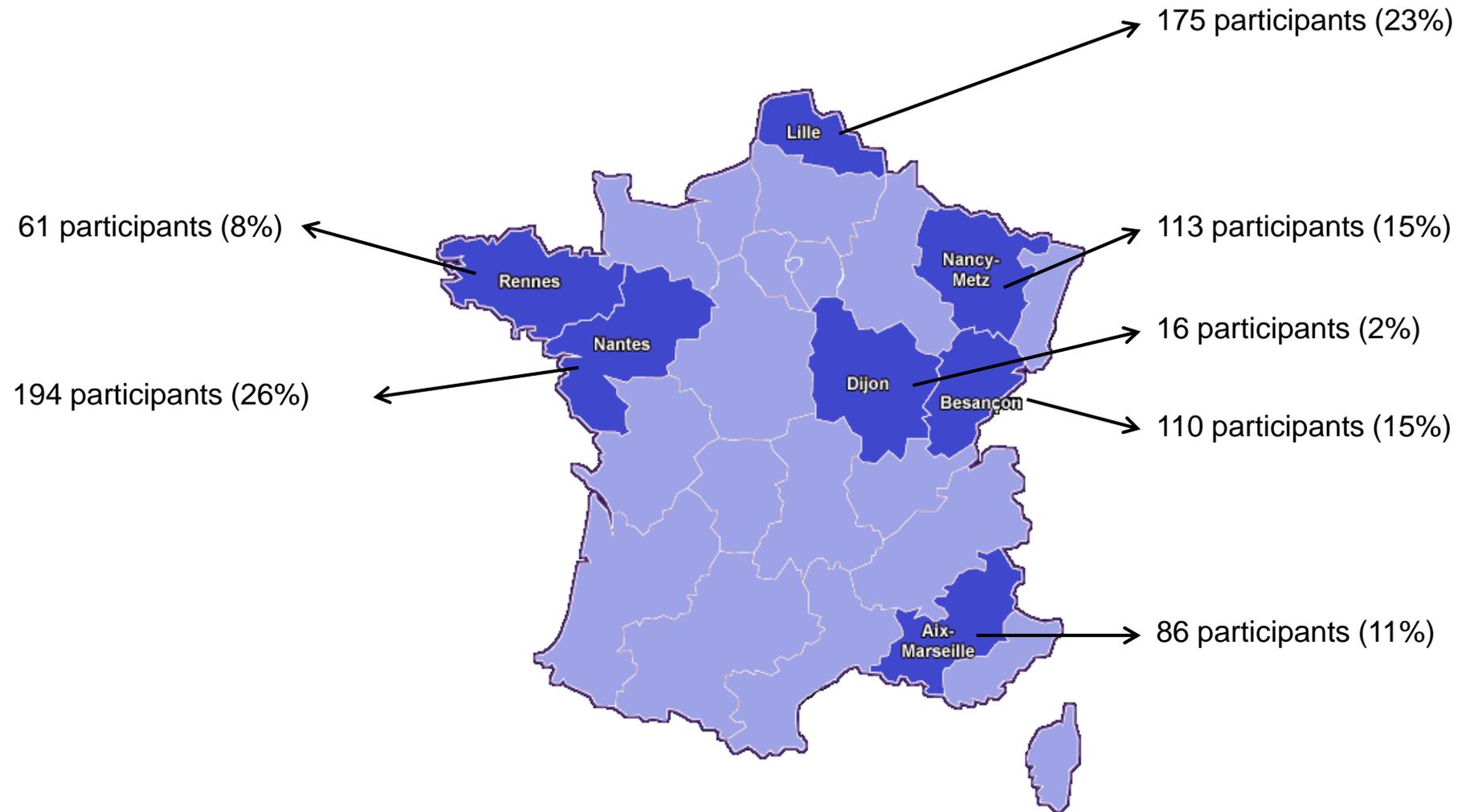


Inclusion process: from June, 2009 to June, 2014



- Inclusion questionnaire
- Follow-up questionnaires

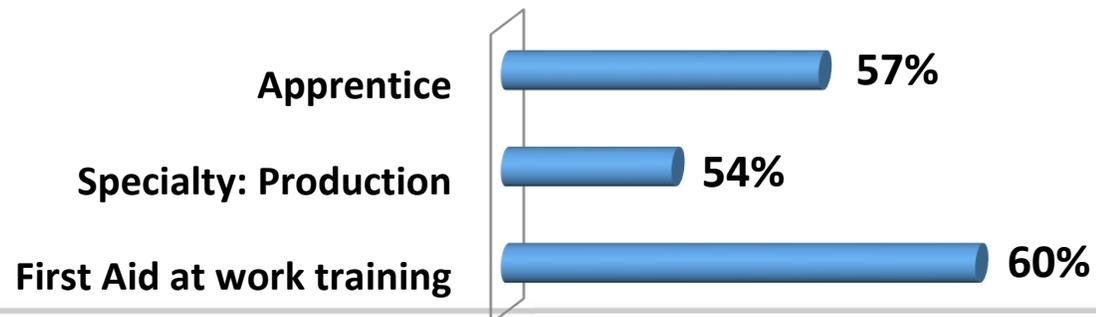
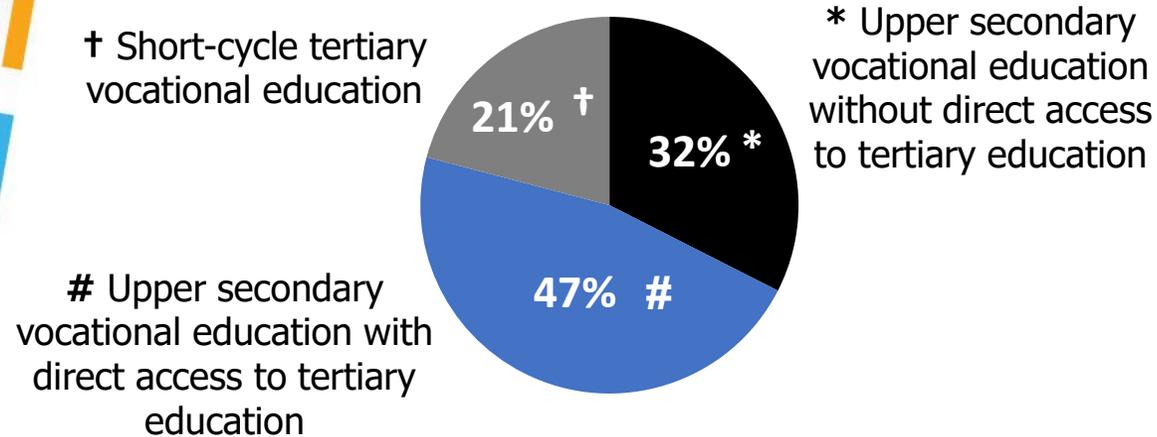
755 participants in 7 academic regions



Educational courses

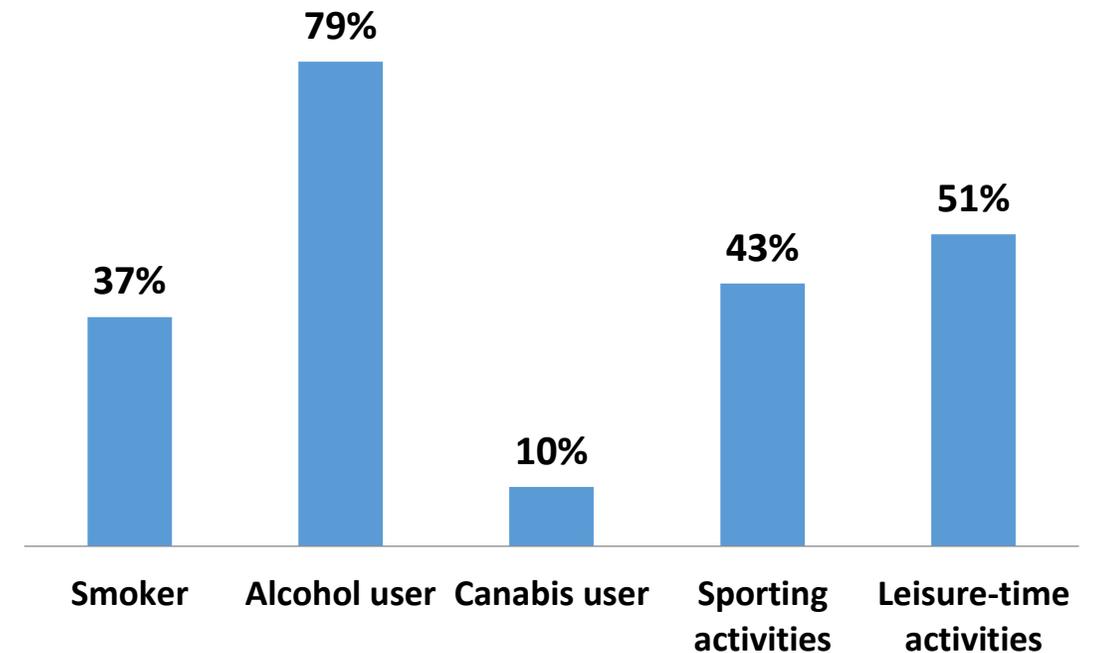
OSH education	n	%
yes	687	91.4
no	38	5.0
don't remember	27	3.6

Level of diploma



Individual characteristics

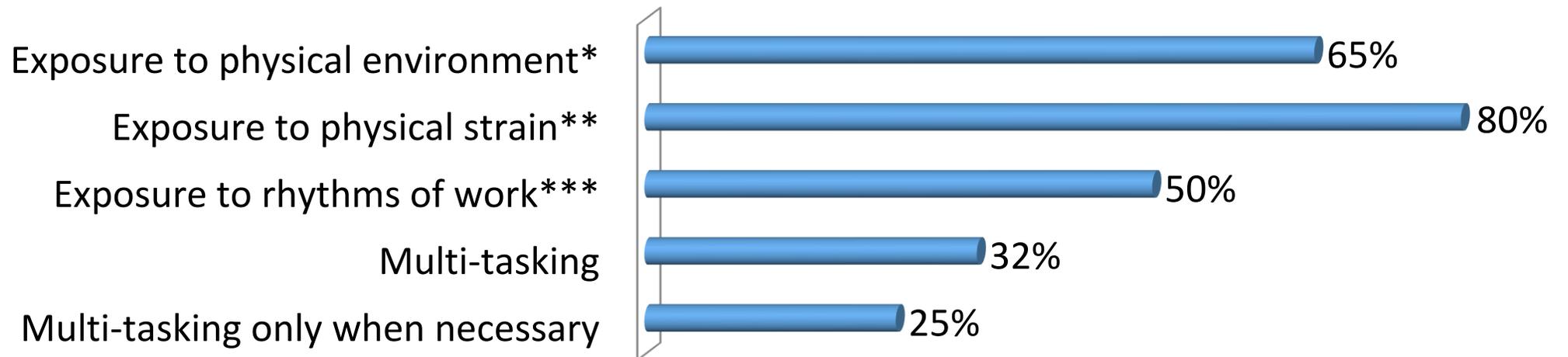
- 437 male (58%), 318 female (42%)
- 20.5 ± 2.7 years old
- 70% live with parent(s)



Characteristics of jobs (n=1290)

- 1.7±1.0 jobs / participant
- 41% production; 59% service
- 45 % fixed-term, 36 % permanent, 16% temporary
- 70 % of jobs in small companies
- 69 % of jobs correspond to initial education

Working conditions



* noisy environment, outside work, work in warm or cold, work with chemicals

** manual handling, strained postures, vibration

*** repetitive movements, night work, shift work

Conditions encountered upon arrival in the company



Characteristics of WIs

- **158 WIs over the 2 years of follow-up**
 - 77 reported only by participants
 - 27 identified by both sources
 - 54 identified only through the National Health Insurance Funds' databases
- **Overall WI rate : 0.12 [0.10–0.14] WIs per full-time worker**
 - 64.9 [54.4-77.4] WIs per million of worked hours
 - occurred 6 months after arrival
- **Nature of WIs ***
 - wounds and superficial injuries (n=22, 32%), external or internal trauma (n=13, 19%)
 - sprains and strains (n=6, 9%), traumatic shock (n=5, 7%)
- **Jobs most frequently associated with injury**
 - construction worker (n=28, 19%), maintenance worker (n=18, 12%)
 - cook / food service assistant (n=18, 12%), butcher (n=15, 10%)

* Based on the 69 injuries where the nature was known

Statistical analyses

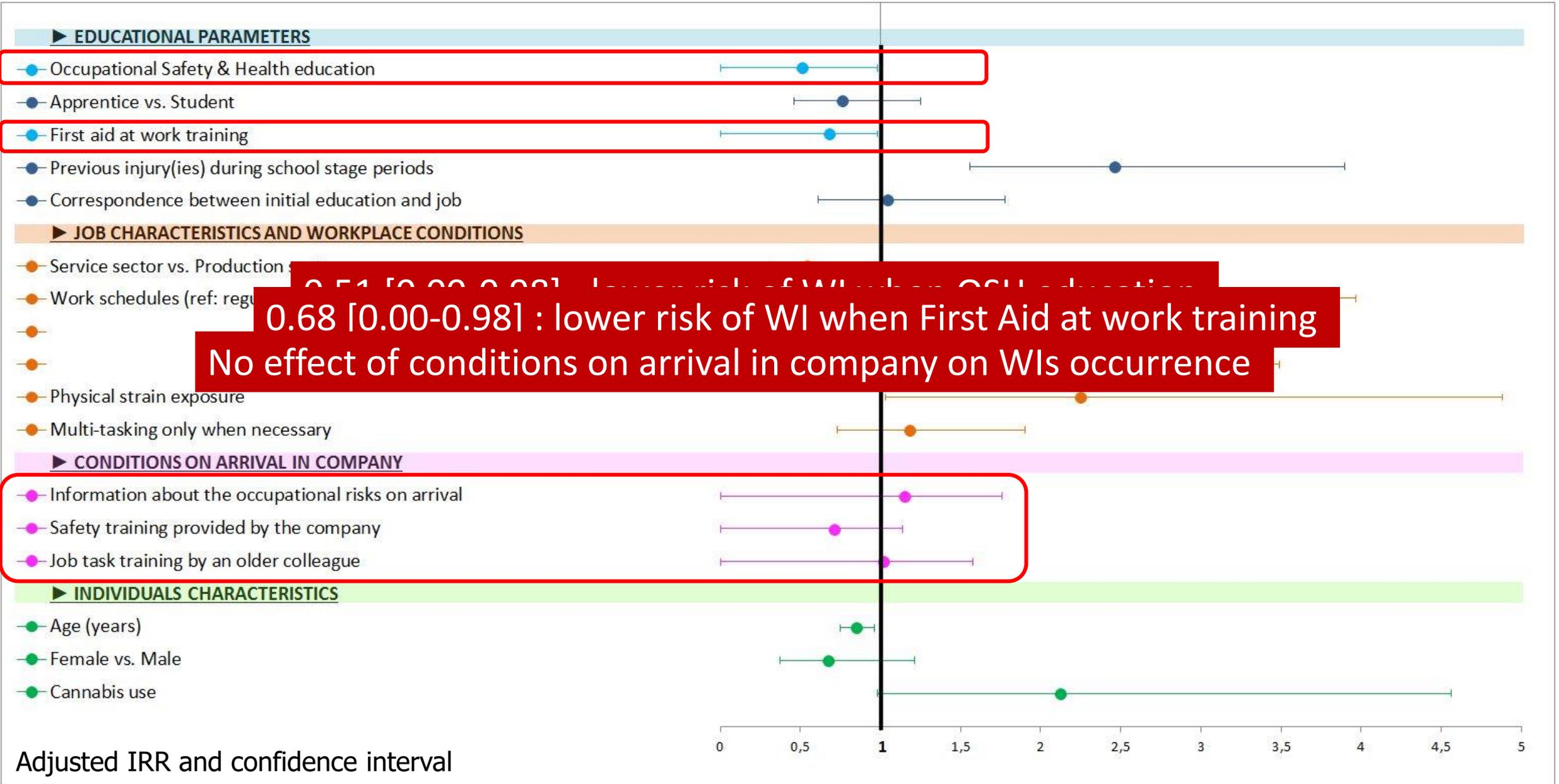
- Estimation of WIs incidence rate
 - Multiple Poisson regressions
 - OSH training as main explicative factor of interest
 - Secondary explicative factors
 - > “First aid at work” training during schooling
 - > the conditions encountered upon arrival in the company (occupational hazard information, safety training, and job task training)
- For each explicative factor: Incidence rate ratio (IRR) 95% confidence interval [95% CI]
 - If $IRR < 1$ and $1 \notin [95\% \text{ IC}]$ 
 - If $IRR > 1$ and $1 \notin [95\% \text{ IC}]$ 

Statistical analyses

- Adjustment factors:

- > apprentice,
- > correspondence between initial education and job,
- > activity sector,
- > work schedules,
- > exposure to carrying heavy loads, strained postures or vibration,
- > multi-tasking only when necessary,
- > previous WIs during school internships,
- > age,
- > gender
- > and cannabis use

Results of the multiple Poisson regression analysis of the



Discussion

- Few prospective studies focused on the effect of OSH education on WIs occurrence
- In France, OSH skills taught in vocational diplomas with a comprehensive approach
 - wider than the specific risks related to the profession learned
- We observed a decrease in the risk of WI for participants who received OSH education
 - Decrease in the risk of WI for participants who received the First aid at work training
 - No effect of the (non-)correspondence between initial education and job

Our results suggest that

- => OSH education during schooling helps protect against WI
- => There could be advantages in strengthening a comprehensive approach

Reference :

Boini S, **Colin R**, Grzebyk M. Effect of occupational safety and health education received during schooling on the incidence of workplace injuries in the first 2 years of occupational life: a prospective study. *BMJ Open* 2017;7:e015100. doi:10.1136/bmjopen-2016-015100

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Thanks for your attention

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