

The PIPAH Study: Self-Reported Exposures and Ill-Health among Pesticide Users

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Introduction

The main aims of the PIPAH Study are to monitor the health of workers in Great Britain who use pesticides as a part of their job, and to gain a better understanding of the relationship between long-term exposure to pesticides and health. These aims will be achieved by establishing and following-up, on a long term basis, a cohort of pesticide users.

The sampling frames of the PIPAH Study are the operational databases of the National Register of Spraying Operators and the National Amenity Sprayer Operators Register. In addition, existing members of the Pesticide Users Health Study were invited to participate in the study. Baseline data was collected between 2012 and 2014 using a combination of paper and online questionnaires, with the overall response rate around 20 %.

The aims of this particular study are to investigate self-reported exposures and ill-health among the pesticide users at baseline.

Data Collection and Methods

Data were collected using a 12 page General Questionnaire that included sections on:

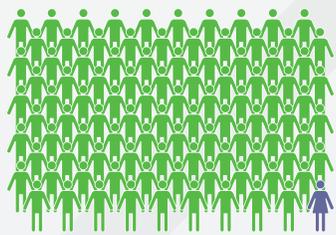
- Types of pesticides used and typical years of use
- General Health
- Family medical history
- Lifestyle
- Diet

Summary statistics were extracted from the baseline dataset describing key demographics, lifestyle data, prevalence of selected health conditions, pesticide and Personal Protective Equipment (PPE) use.

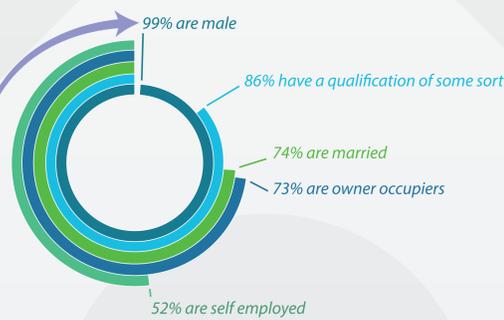
Logistic regression analyses were carried out using diagnosis of selected health conditions as the dependent variable. Independent variables included overall time using pesticides (herbicides and insecticides), age, use/non-use of PPE and family health history.

The cohort at March 2014 - key demographic statistics

5731 members



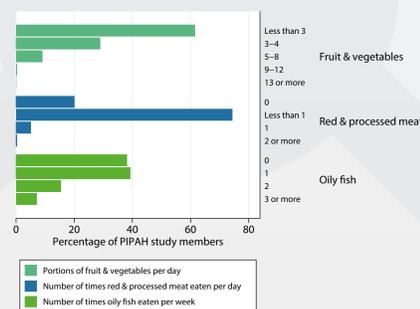
Mean age = 54.2 years



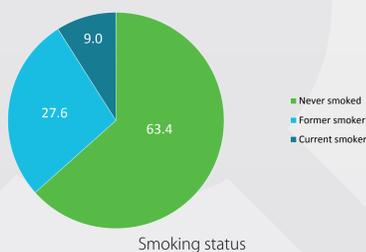
Cohort lifestyle data

Cohort members:

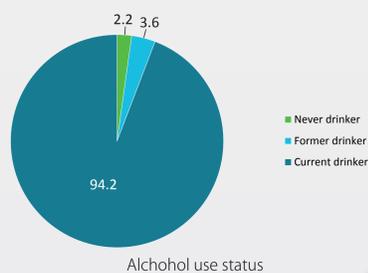
- Consume less than the recommended 5 daily portions of fruit and vegetables
- Eat less than one daily portion of meat
- Eat at least one portion of oily fish per week
- Drink alcohol – 94 % compared to 85 % described in the GB 2010 ONS General Lifestyle Survey
- Tend not to smoke – only 9 % of the cohort report that they are current smokers compared to a 19 % smoking rate in England in 2013 reported by the Health and Social Care Information Centre



Diet: Frequency of fruit and vegetable, red and processed meat, and oily fish consumption

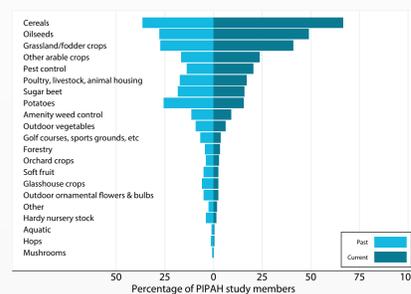


Smoking status

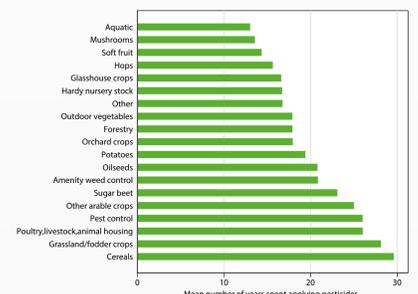


Alcohol use status

Pesticide use



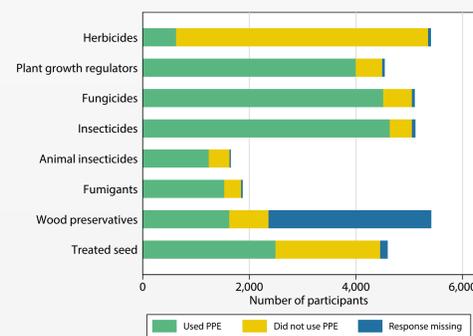
Past and Current areas of Pesticide use



Time spent in different areas of pesticide work

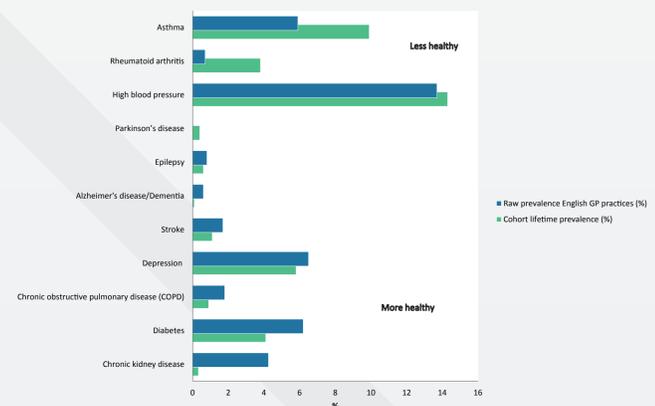
The main areas of current and past pesticide use is in growing cereals with cohort members spending an average of just under 30 years using pesticides in this area of work

Use of PPE when using pesticides



PPE is far less likely to be used by cohort members when applying herbicides compared to other pesticides, suggesting an investigation of an association between reporting ill health outcomes and herbicide use would be of value.

Relative health data



The cohort prevalence rates for asthma and rheumatoid arthritis are higher than rates recorded for England, and lower for diabetes and chronic kidney disease

In the logistic regression analysis, the only health outcome showing an association with pesticide use was high blood pressure (hypertension) and time using herbicides, odds ratio 1.05 (95% CI, 1.02 - 1.09)

These results imply a 5 % increase in the odds of reporting a diagnosis of hypertension for every year of herbicide use.

This analysis did not take into account possible confounding factors such as smoking status, alcohol consumption and diet.

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PIPAH website

