Effect of programmes on inequalities in colorectal cancer screening participation across Europe

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BACKGROUND

- **Socioeconomic position contributes to inequalities in colorectal cancer (CRC) screening participation**, as research has shown. Individuals with higher education level tend to participate more in cancer screening.
- **Screening programmes may help reduce such inequalities**, by systematically inviting all individuals in the target population for screening.
- Between 2014 and 2019, five European countries have implemented nationwide CRC screening programmes.

AIM

To assess how **education level** (a proxy for socioeconomic position) affects participation in **CRC screening** across European countries, and to what extent **nationwide population-based screening programmes** modify these inequalities.

METHODS

- Nationally representative data from two waves of the European Health Interview Survey: **EHIS 2014** (N=102,179) and **EHIS 2019** (N=116,021)
  - Analytical sample: **men and women aged 50-74 years** (based on CRC screening recommendations), from 24 countries
- Outcomes: 1) Ever had a faecal occult blood test (FOBT/FIT), (0) no, (1) yes; 2) Had a FOBT/FIT in the past 2 years, (0) no, (1) yes
- Predictor of interest: Education level, (0) high (tertiary), (1) middle (upper secondary), (0) low (lower secondary), based on ISCED-2011
- Classification of countries:
  - **Nationwide population-based CRC programme implemented 2014-2019**: Belgium, Czech Republic, Denmark, Luxemburg and Netherlands
  - No programme: Italy, Spain, Sweden, Austria, Germany, Portugal, Slovakia, Latvia, Lithuania, Hungary, Poland, Finland, Iceland, Norway, Romania, Bulgaria, Estonia, Greece and Cyprus
  - Excluded countries: Ireland, Croatia, Slovenia, France and Malta (these already had a programme before EHIS 2014)
- Statistical analysis: 1) Descriptive statistics; 2) Logistic regression adjusted for gender, age, living alone, self-reported health, GP visit in the past 12 months and country dummies. Predicted probabilities (PPs) were calculated based on adjusted odds ratios (ORs)
  - **Predicted probabilities plots: PPs for Middle and Low education groups, compared to High education (reference category)**

RESULTS

- In EHIS 2014, ever FOBT/FIT uptake was 38%, with 23% for FOBT/FIT in the past 2 years, increasing to 47% and 30% in EHIS 2019. Lower screening prevalence was observed among groups with lower education levels (Fig 1).
- Individuals with low and middle education had lower probabilities of screening uptake compared to those with high education in EHIS 2014 (Fig 2).
- In EHIS 2019, **education level was not associated with screening uptake in countries with population-based screening programmes**, while this association remained in countries without programmes (Fig 3).

Fig 1: Prevalence of FOBT/FIT uptake by education levels, EHIS 2014 & 2019

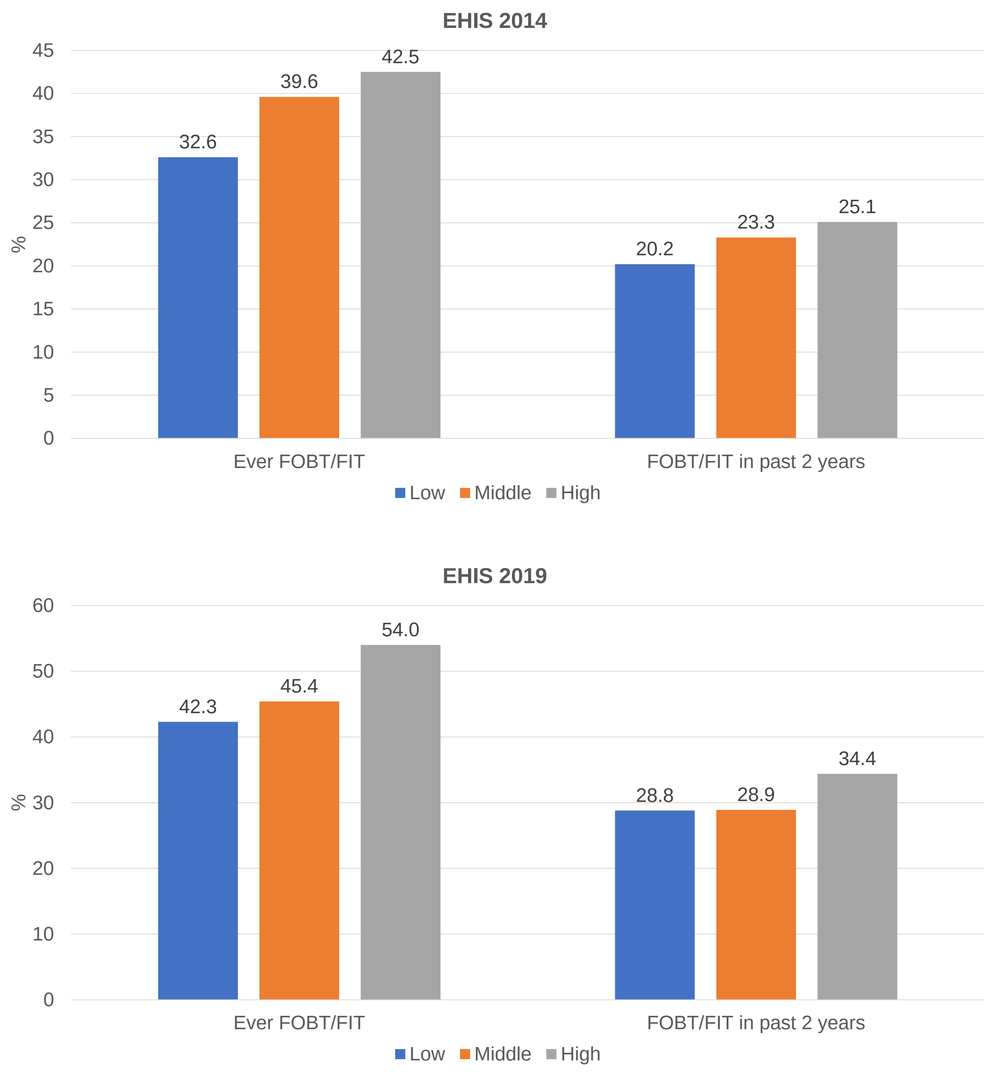


Fig 2: Predicted probabilities of FOBT/FIT uptake by education levels, EHIS 2014
Low and middle education levels compared to high education level

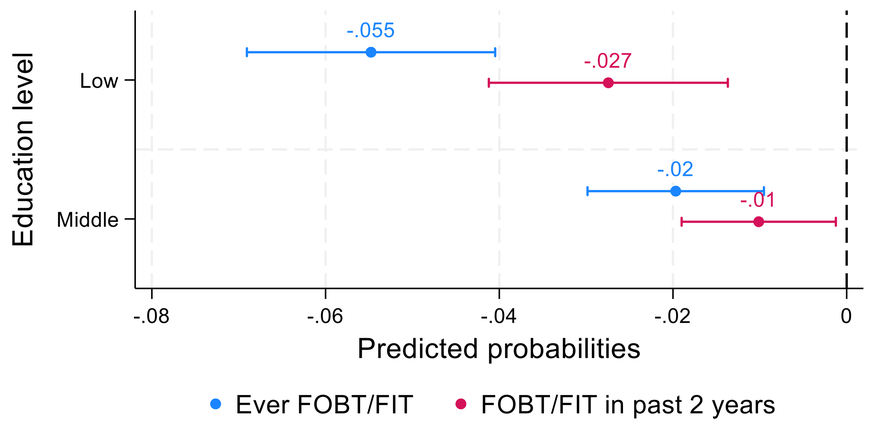
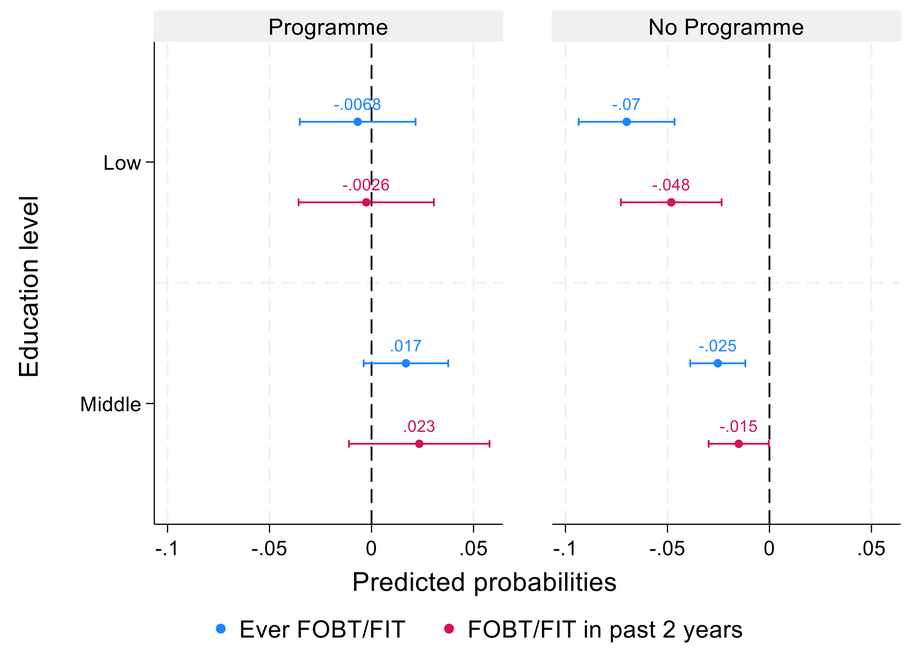


Fig 3. Predicted probabilities of FOBT/FIT uptake by education levels, EHIS 2019
Low and middle education levels compared to high education level



KEY MESSAGES

- Nationwide population-based CRC screening programmes may help reduce educational inequalities in screening participation.
- Preventive strategies should consider the influence of socioeconomic determinants on screening uptake to design effective cancer screening policies.

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