Adolescent self-harm & long-term outcomes: Health status, mental health, & healthcare utilisation

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Introduction

- Self-harm among young people = major public health challenge & poses sig. challenges for healthcare provision & policy formulation (Moran *et al.*, 2024; Mughal *et al.*, 2019; Xie *et al.*, 2025)
  - Definition: **non-fatal acts of deliberate self-harm/self-poisoning** irrespective of suicidal intent (*GUI: 'hurt yourself on purpose in any way'*)
  - 10-20% teenagers self-harm @ least once during adolescence (Farkas *et al.*, 2024)

- Extensive research on immediate psychiatric risk factors & short-term consequences of adolescent self-harm (Fox *et al.*, 2015; Hawton *et al.*, 2012; Mcevoy *et al.*, 2023; Richardson *et al.*, 2024)
  - Far less known how **different longitudinal trajectories** of self-harm e.g. desisting after adolescence, initiating in early adulthood, or persisting across both stages, **relate to broader health outcomes, health-related behaviours & patterns of healthcare utilisation** into adulthood

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Research Questions

1. What is the **prevalence** of self-harm among young people in Ireland by age 20 & how are these individuals **distributed across desisted, later-onset, & persistent** longitudinal trajectories?

2. How do distinct self-harm trajectories (desisted, later-onset, persistent) relate to **self-rated health, sleep difficulty, smoking & diagnoses of depression/anxiety** @ age 25, controlling for baseline status & socio-demographics?

3. To what extent do self-harm trajectories predict contact with primary care (GPs), community/specialist mental health professionals (psychologists, counsellors, psychiatrists) & A&E at age 25?

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Methods

- *Growing Up in Ireland* Cohort ’98: young people aged:
  - 17 in 2014/15 (Wave 3)
  - 20 in 2018/19 (Wave 4)
  - 25 in 2022/23 (Wave 5)

- 6,808 participants completed at least 1 of the 3 waves
  - 2,594 completed all 3
    - Cases exc. in 2 stages
      1. Participants missing self-harm trajectory classification removed (-150 cases)
      2. Listwise deletion across core covariates (respondent sex & primary-caregiver education) & all Wave 5 outcome measures (-537)
- Core analytical sample: **n=1,907**

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Exposure of interest: history of self-harm

- Captured across Wave 3 (age 17) & Wave 4 (age 20)
  - At 17 asked whether they had **"ever"** deliberately harmed themselves
  - At 20 asked if had deliberately harmed themselves **"in last 12 months"**
- **4-category** longitudinal trajectory variable constructed by combining responses across both waves:

1) **Never:** No self-harm @ 17 & 20
2) **Desisted:** Reported lifetime self-harm @ 17 but no past-year self-harm @ 20
3) **Later onset:** Reported no lifetime self-harm @ 17, but reported past-year self-harm @ 20
4) **Persistent:** Reported lifetime self-harm @ 17 & past-year self-harm @ 20

Outcomes of study

- Health & wellbeing aged 25

I. Self-rated general health: 5-point scale (treated as ordered categorical variable, modelled as generalised ordered logit (GOL))

II. Sleep difficulty: originally 3 ordinal categories ("yes, a lot", "yes, some", "no") → binary indicator (1 = yes [a lot/some], 0 = no, modelled as logit)

III. Smoking frequency: 5-point scale (1 = never, 2 = tried once/twice, 3 = used to smoke, 4 = occasionally, **5 = daily**), analysed as ordered categorical variable, GOL

IV. Depression/anxiety: binary indicator self-reported formal diagnosis by a medical doctor, psychologist, or psychiatrist, logit model

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Outcomes of study

- Healthcare utilisation contacts in previous 12 months aged 25
  I. GP
  II. Psychologists/counsellors
  III. Psychiatrists
  IV. A&E

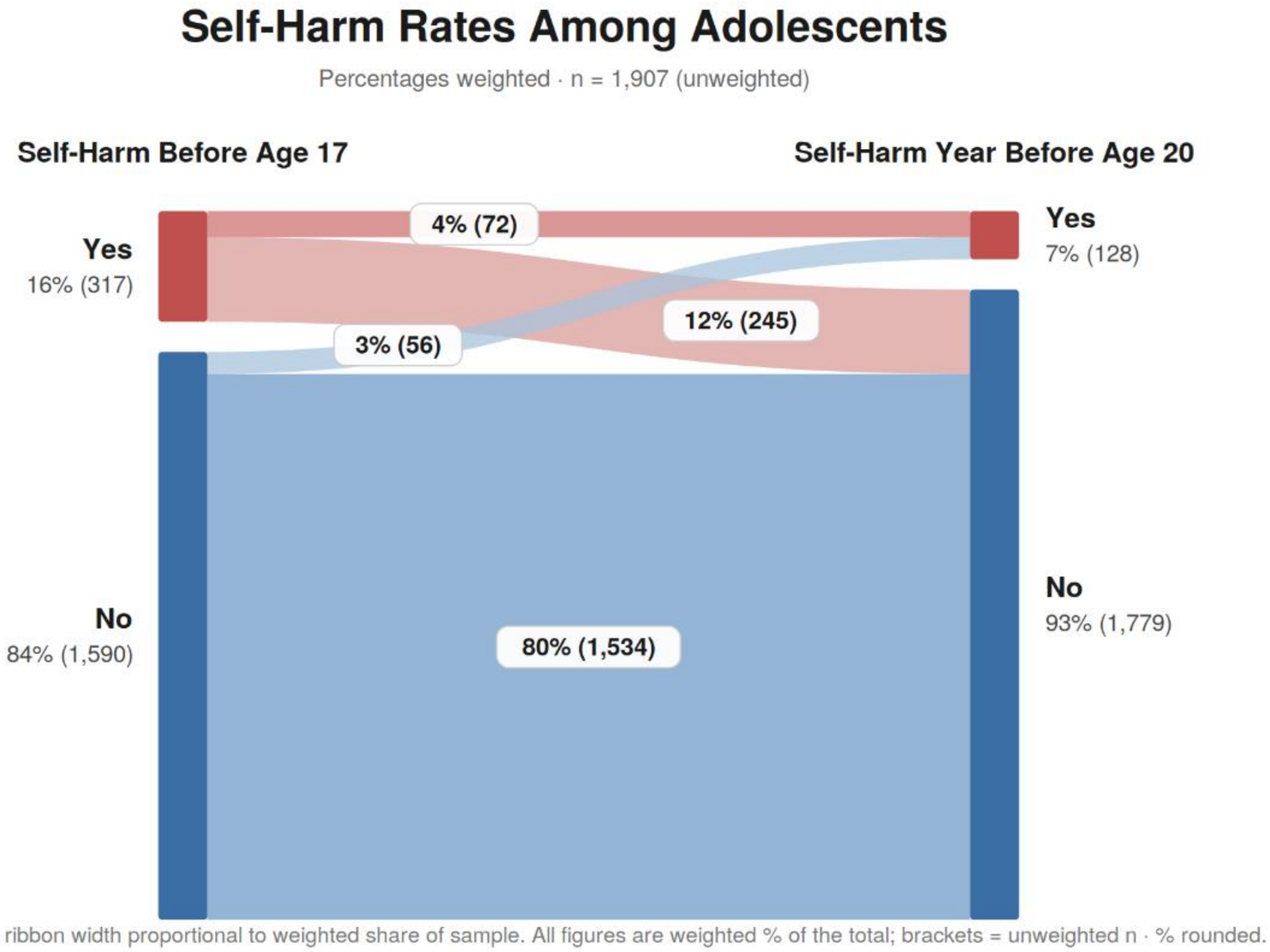
  {Negative binomial regressions}

  - Regression models control for sex & primary caregiver education + baseline of each outcome at age 17 years
  - Employ sample weights

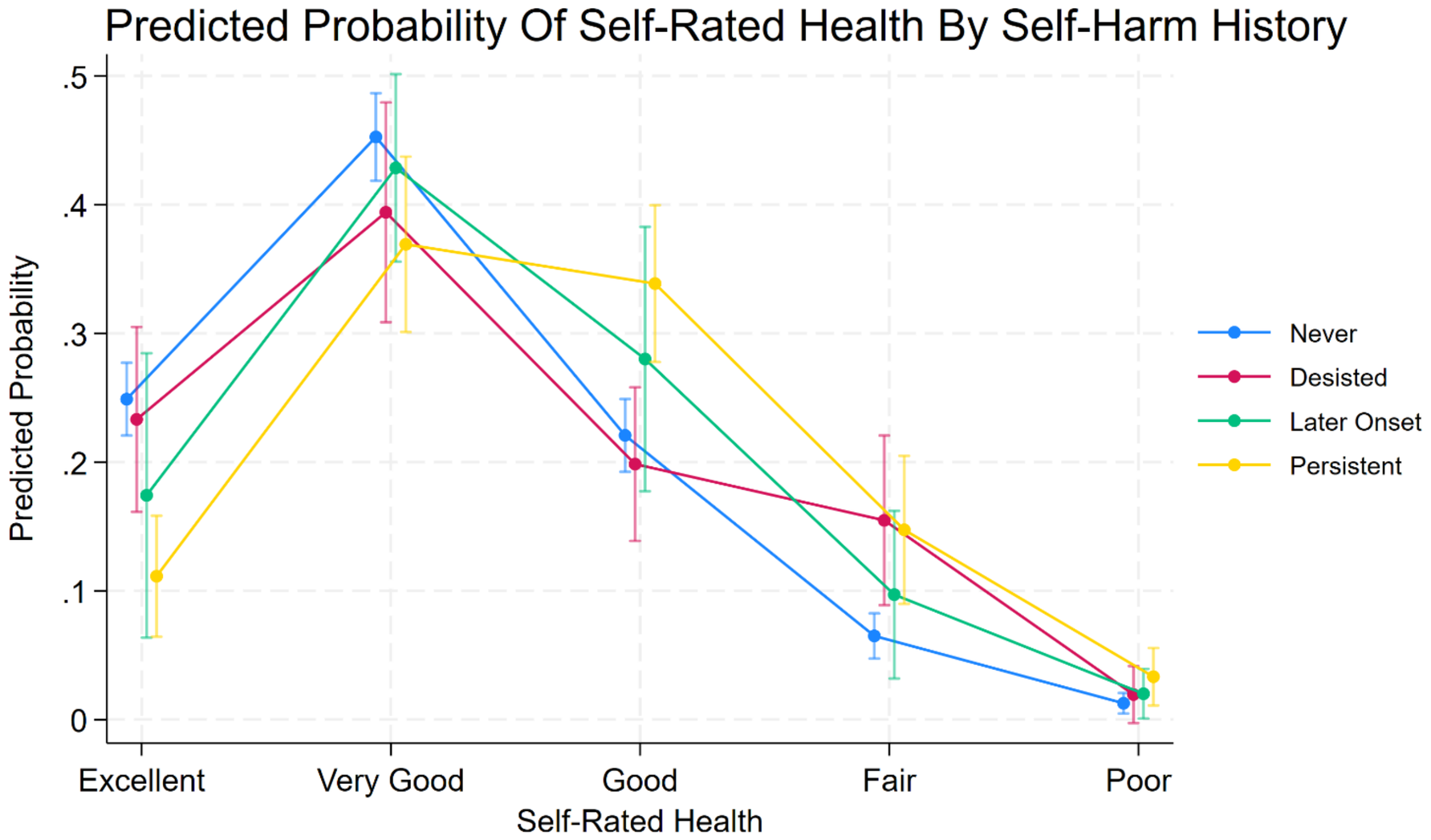
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Prevalence of self-harm at 17 & 20

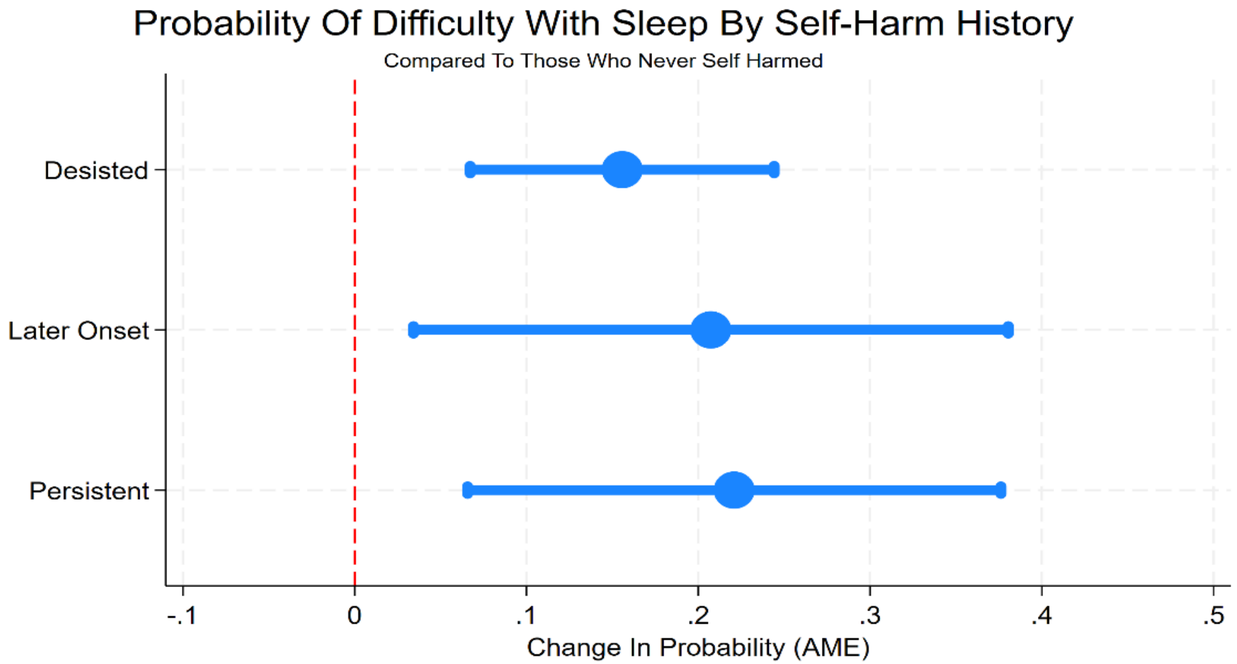
- At 17, 16% reported a lifetime history of self-harm
- B/t 17-20: 12% desisted
- 4% continued to report past-year self-harm @20
- An additional 3% reported later-onset self-harm
  - Combined, these 2 subgroups accounted for overall 7% past-year self-harm prevalence @20



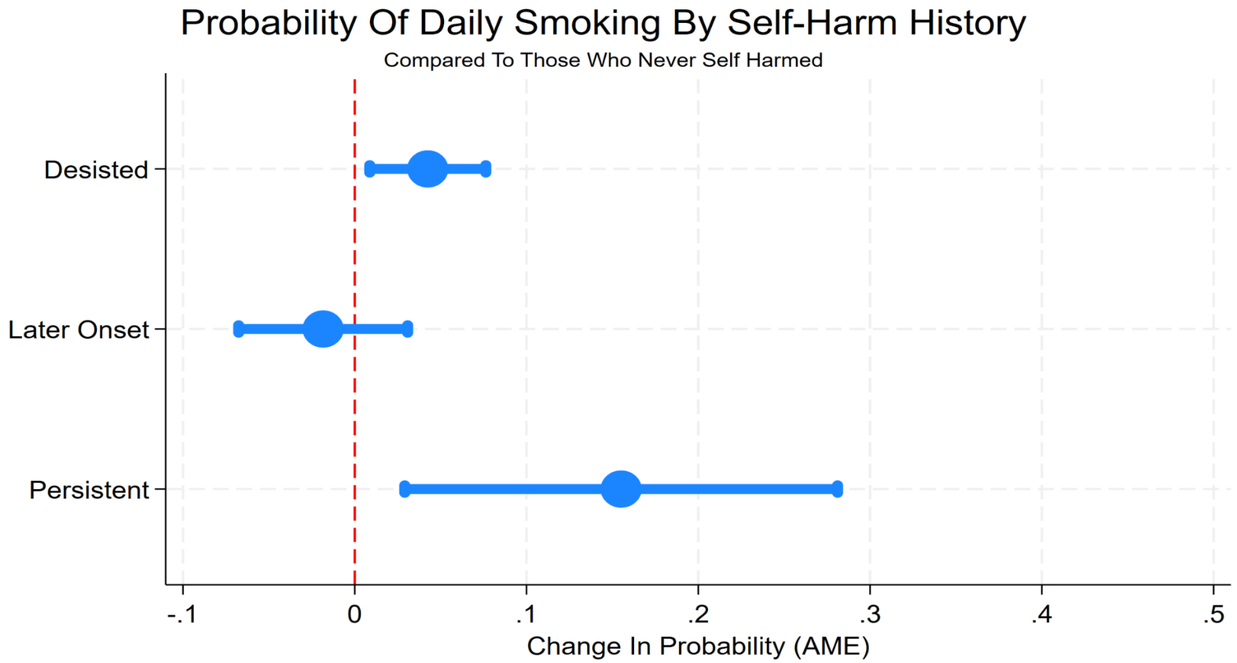
Self-harm categories association with self-rated health

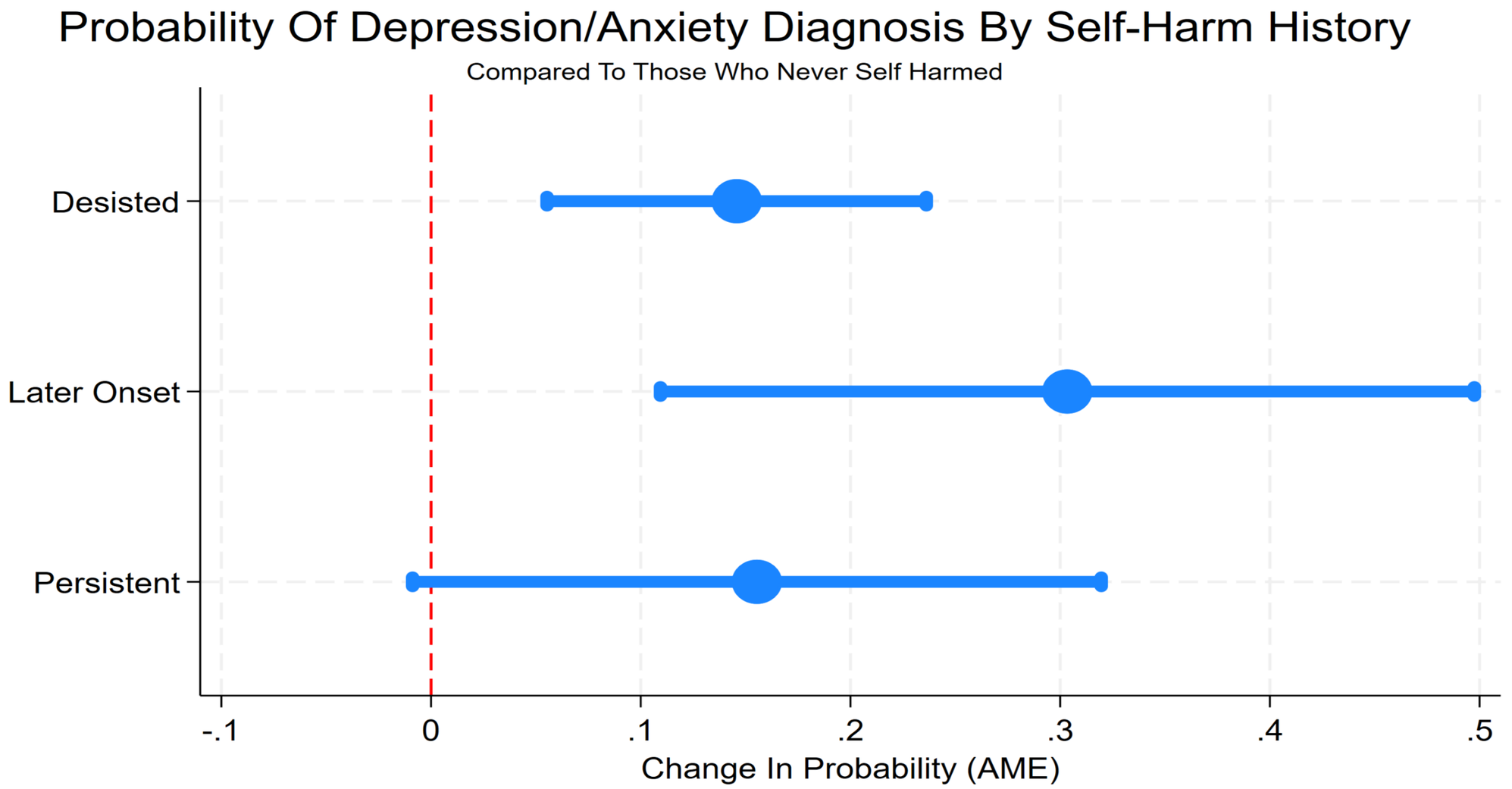


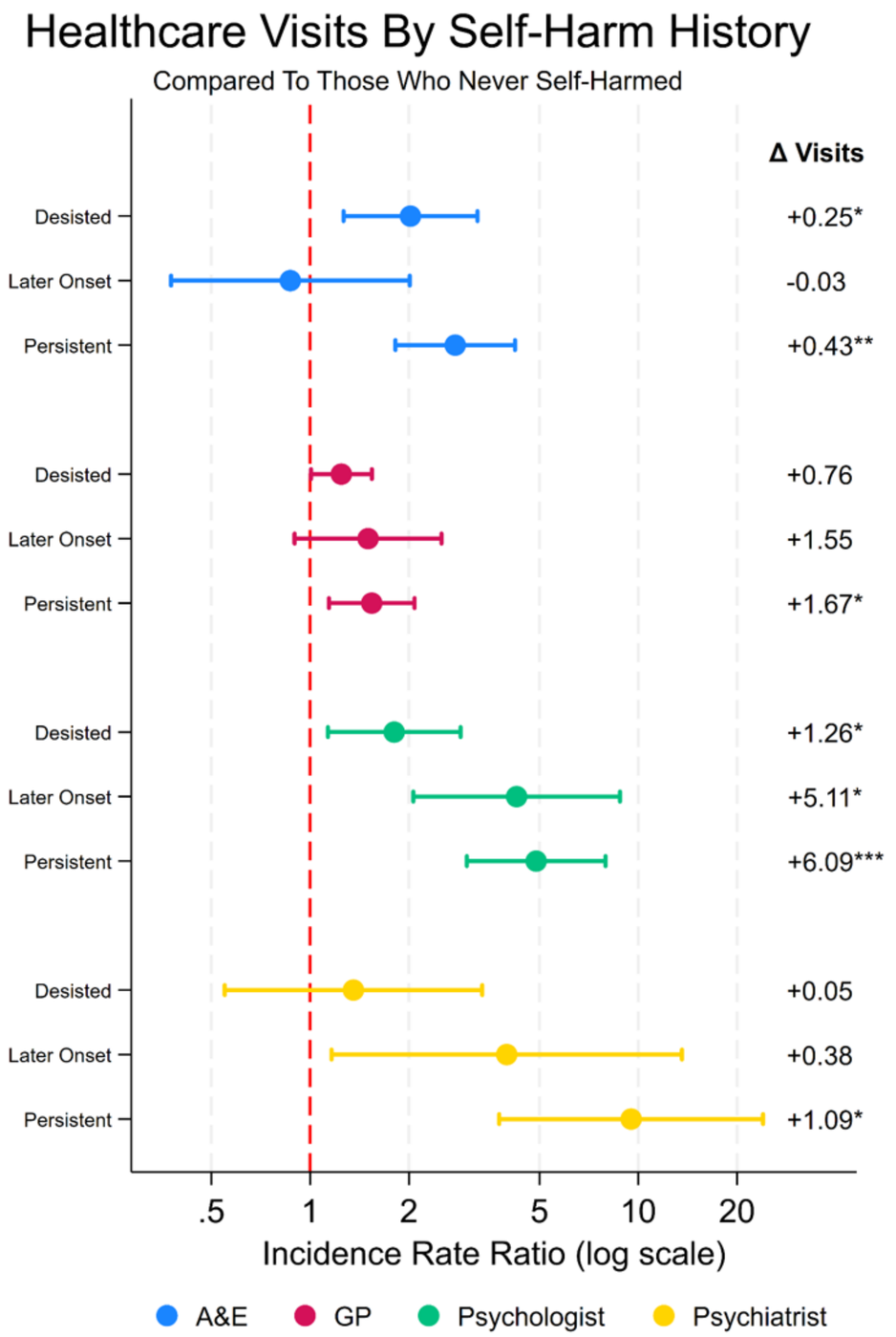
Sleep Difficulties



Daily Smoking




Probability Of Depression/Anxiety Diagnosis By Self-Harm History
Compared To Those Who Never Self Harmed
Desisted
Later Onset
Persistent
-.1
0
.1
.2
.3
.4
.5
Change In Probability (AME)


Healthcare Visits By Self-Harm History
Compared To Those Who Never Self-Harmed
Δ Visits
Desisted
Later Onset
Persistent
+0.25*
-0.03
+0.43**
Desisted
Later Onset
Persistent
+0.76
+1.55
+1.67*
Desisted
Later Onset
Persistent
+1.26*
+5.11*
+6.09***
Desisted
Later Onset
Persistent
+0.05
+0.38
+1.09*
.5
1
2
5
10
20
Incidence Rate Ratio (log scale)
A&E
GP
Psychologist
Psychiatrist

Discussion

- By 20 ≈ **20%** young people history of self-harm, aligns with global estimates 10–20% (Farkas *et al.*, 2024; Lim *et al.*, 2019)
- Self-harm **time-limited for most**: 12% desisted by 20
  - 4% persistent
  - 3% initiated

  {Strongly mirrors developmental patterns documented by Moran *et al.* (2012)}

- Persistent self-harm strongly linked to worse self-rated health @25, predicting 13.8 pp ↓ reporting excellent health
- Sleep difficulties elevated across all groups
- Daily smoking @25 elevated for adolescent-onset trajectories (desisted: +4.2 pp; persistent: +15.5)

- Diagnoses of depression/anxiety @25 higher in single-wave groups (desisted: +14.6 pp; later-onset: +30.3)

- Persistent self-harm predicted **1.67 additional ann. GP visits:** primary care = key continuous touchpoint for those managing persistent distress
- **Specialist community mental health use elevated across all self-harm trajectory groups:** ranging 1.8 times ↑ in desisted group to >4.8 times ↑ in persistent group
- Acute care concentrated **in persistent group:** attend A&E 2.8 & psychiatrists 9.5 rate of non-self-harming peers

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Policy implications

- Empirical findings have direct relevance for health policy, service planning & early intervention frameworks
- Public healthcare systems frequently face structural bottlenecks during transition Child & Adolescent Mental Health Services (CAMHS) → adult mental health services ~ ages 18-20
- Young people navigating this boundary often **experience service drop-offs**, precisely @ developmental stage where later-onset self-harm can emerge/persistent patterns become ingrained (McGorry *et al.*, 2024; Moran *et al.*, 2024)

- The observation that persistent self-harm drives multi-fold ↑ A&E attendances & psychiatric consultations indicates that inadequate **community-based early intervention** leads to acute, crisis-driven utilisation
- Strengthening **transitional care pathways**, **enhancing primary care capacity** to support young adults, & implementing **targeted interventions for sleep & somatic distress** could be prioritised to ↓ long-term morbidity & healthcare system pressure

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Go raibh maith agaibh

Self-harm trajectories

- Self-harm in youth = rarely a static condition (Nock, 2009; Plener *et al.*, 2015; Tilton-Weaver *et al.*, 2023)
- Longitudinal research over last 2 decades has est. that self-harm follows distinct temporal trajectories (Moran *et al.*, 2012; You *et al.*, 2026)

1. For a substantial portion, self-harming = **time-limited/episodic**, peaking around mid-to-late adolescence before desisting as emotional regulation, coping mechanisms, & social environments stabilise (Mars *et al.*, 2014; Moran *et al.*, 2012)
2. For a vulnerable minority, self-harm **persists** into early adulthood, often becoming a chronic response to ongoing psychological distress, trauma, or psychiatric illness (Daukantaitė *et al.*, 2020)
3. A 3rd trajectory involves **later-onset** self-harm, where individuals report no history of deliberate self-harm during early-to-mid adolescence but initiate the behaviour during transition into young adulthood (Moran *et al.*, 2012)

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