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Substance use disorders among migrant groups in Sweden

PLOS MEDICINE

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RESEARCH ARTICLE

Substance use disorders in refugee and migrant groups in Sweden: A nationwide cohort study of 1.2 million people

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The situation globally

- **100 million+** people forcibly displaced by persecution, conflict, violence, human rights violations or events seriously disturbing public order (UNHCR, 2022)
- Sweden among countries who have taken in most refugees per capita (NRC, 2020)
- Individuals with a refugee background face higher risk of post-traumatic stress disorder (PTSD)
 - Prevalence rates vary (Richter et al., 2018; Zipfel et al., 2018; Georgiadou et al., 2017)

PTSD and substance use disorders (SUD)

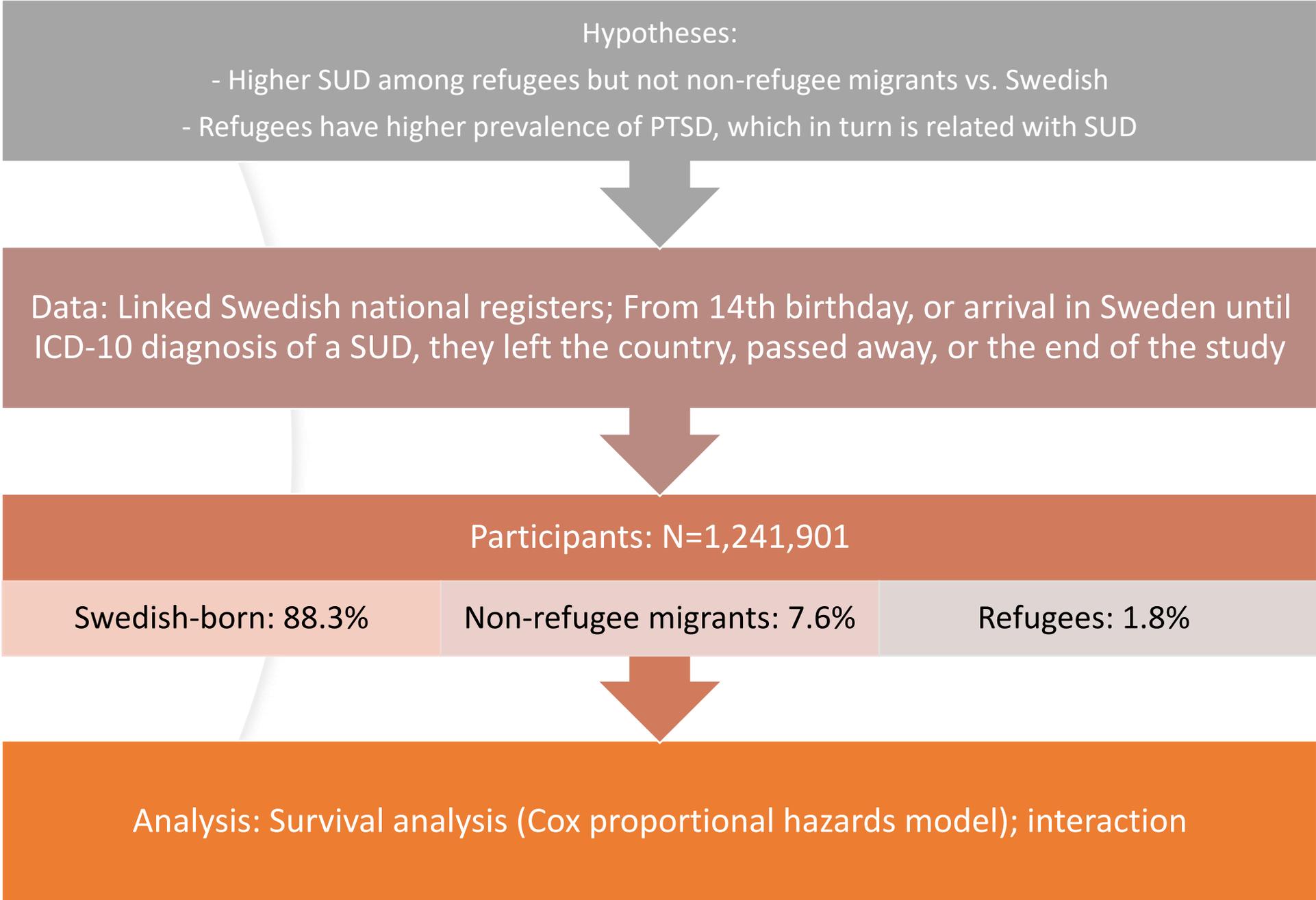
General population	Non-refugee migrants	Individuals with a refugee background
Comorbidity between SUD and PTSD has been reported (Goldstein et al., 2016; Mills et al., 2006)	Lower/similar rates of substance use vs. majority population (Hjern & Allebeck, 2004; Qureshi et al., 2014; Taieb et al., 2012)	Higher rates of substance use disorders (Ezard, 2012) - to avoid thinking about the past or 'an unhappy present' (Lee et al., 2008)



Lack of epidemiological, longitudinal studies on SUD comparing refugee, non-refugee groups and the majority population

Little known about the interplay of PTSD and SUD among migrant groups compared to the majority population

Methods

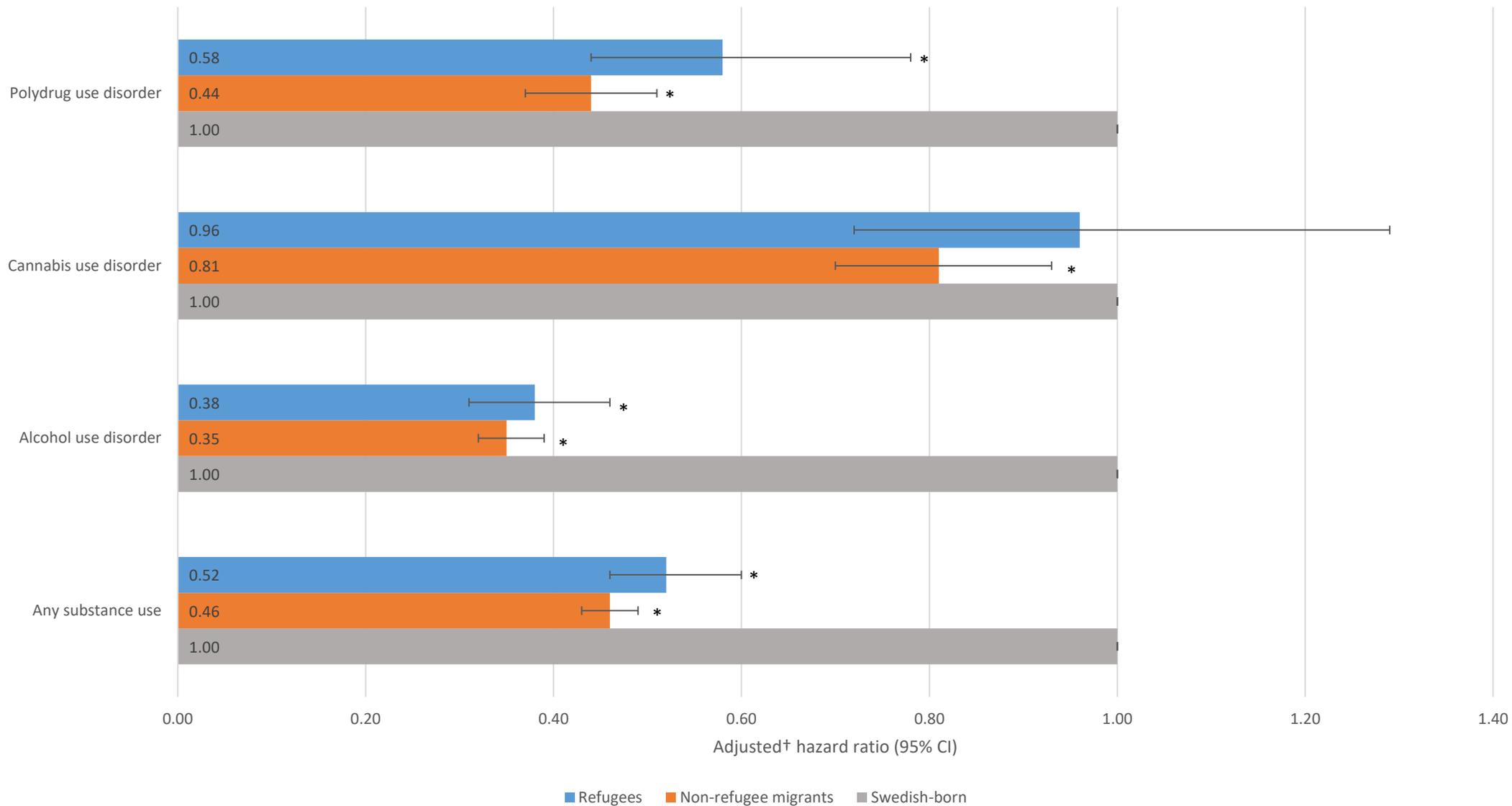


Prevalence of PTSD

- Refugees: 1.3% *
- Non-refugee migrants: 0.6% *
- Swedish: 0.2%*

*(χ^2 $p < 0.001$)

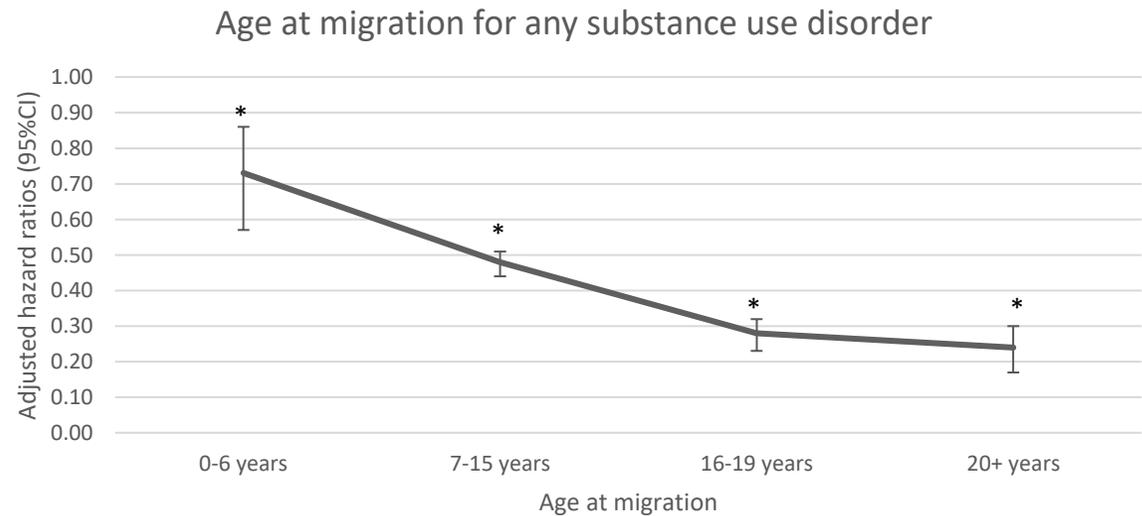
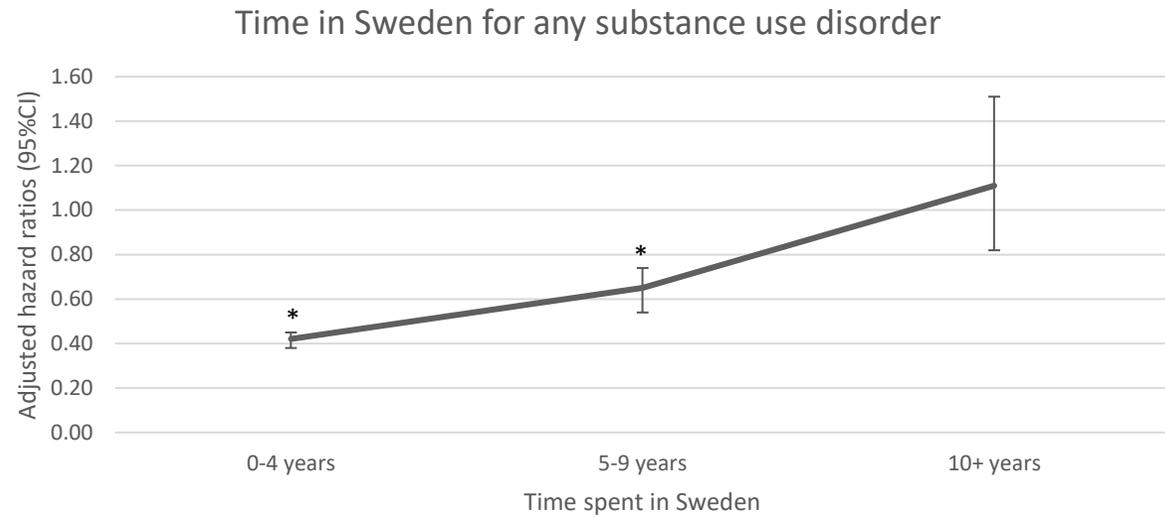
Rates of substance use disorders by migrant status



* p<.003

†Adjusted for age, sex, birth year, family income, family employment, population density, and PTSD diagnosis

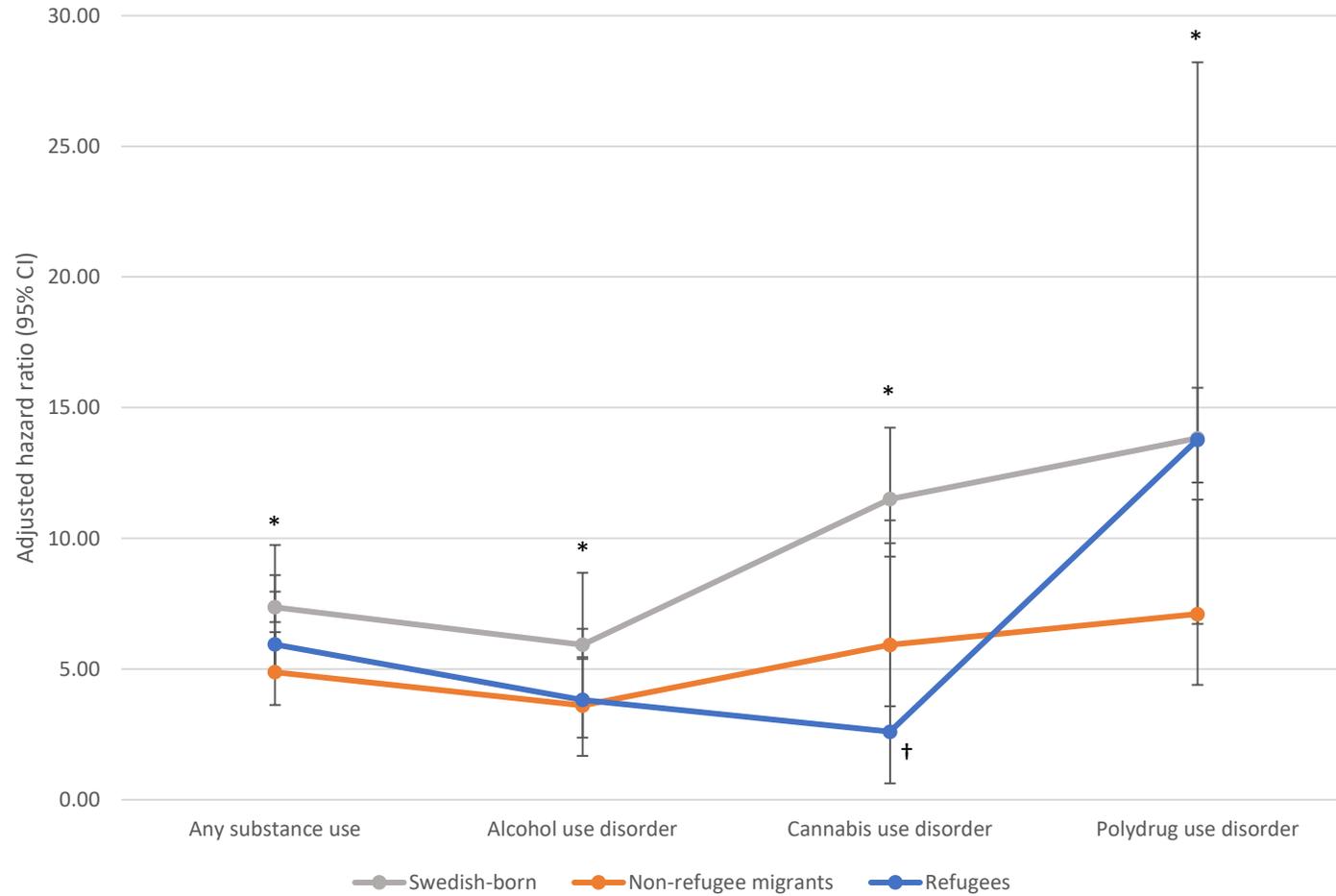
Rates converge on Swedish rates



* p<.002

HRs adjusted for age, sex, birth year, family income, family employment, population density, and PTSD diagnosis

Migrant status and PTSD



PTSD
associated
with larger
risk of SUD
among
Swedish

* p<.001

† HR of PTSD among refugee group, p=.19 based on N=2

Summary of the findings

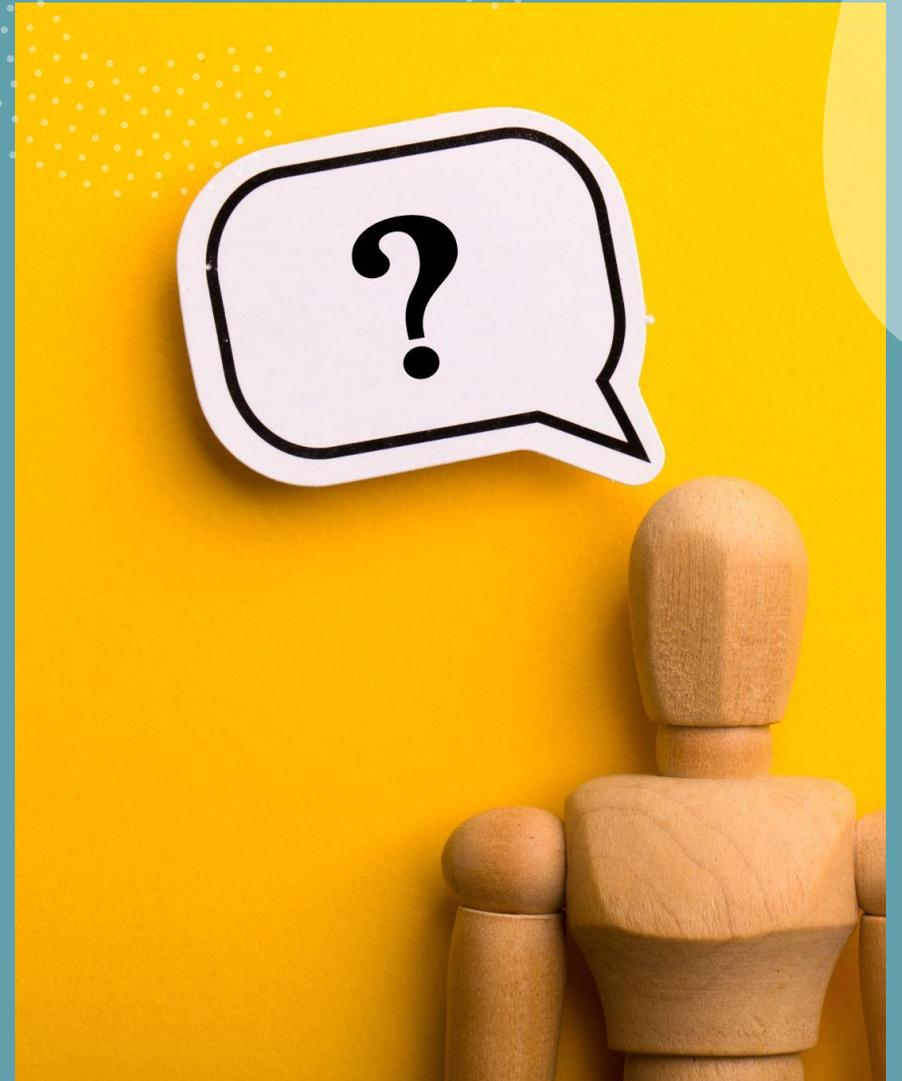
- Migrants had significantly higher prevalence of PTSD than Swedish-born
- Migrants were less likely to be diagnosed with a SUD (except cannabis among refugees?)
- Migrants' SUD rates converged on Swedish rates over time
- Effect of PTSD on SUD strongest in Swedish

Interpretation

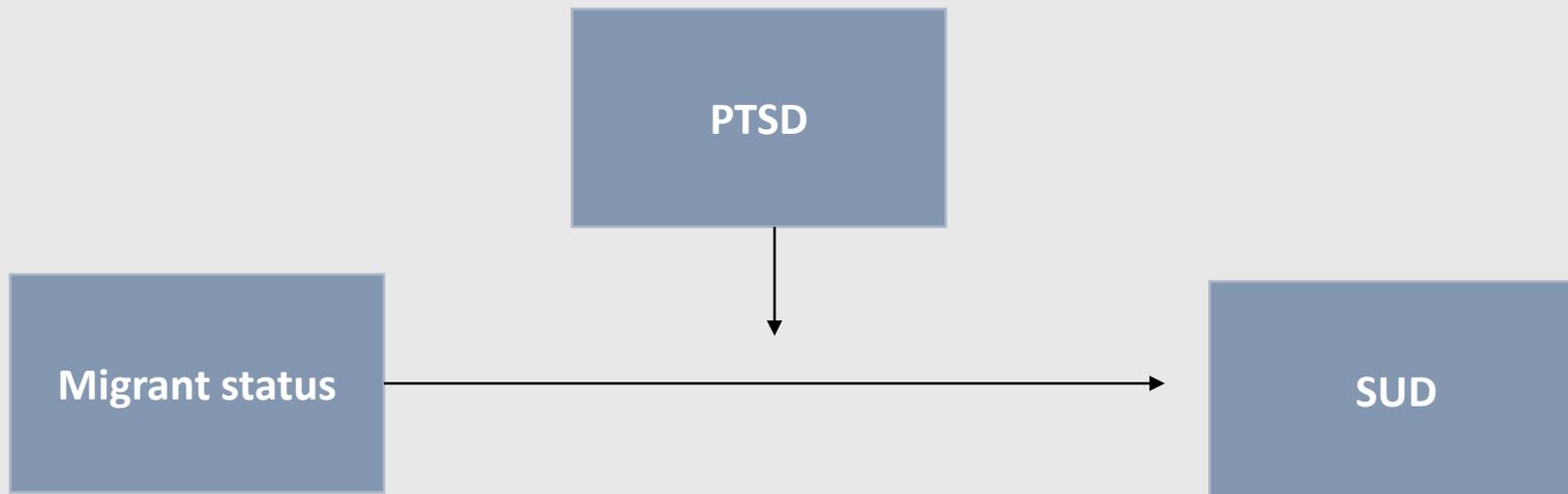
- Healthy migrant effect
- Protective effect of religion and socio-cultural factors
 - E.g., attitudes to substance use
- Adopting Swedish health behaviours over time
- Fewer language barriers and better access to healthcare over time
- High rates of SUD in all groups – important public health concern

Thank you for your
attention!

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Interaction



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Substance use disorder	N	Percent	Unadjusted				Adjusted			p-value
			HR	95% CI		p-value	HR ¹	95% CI		
Any substance use disorder										
Swedish-born	38,971	3.5	1				1			
Non-refugee migrants	1,223	1.2	0.42	0.39	0.44	<0.001	0.46	0.43	0.49	<0.001
Refugees	223	1.3	0.42	0.37	0.48	<0.001	0.52	0.46	0.60	<0.001
Refugees versus non-refugee migrants	-	-	1.02	0.88	1.18	0.78	1.15	0.99	1.32	0.06
Alcohol use disorder										
Swedish-born	29,444	2.6	1				1			
Non-refugee migrants	690	0.7	0.30	0.28	0.33	<0.001	0.35	0.32	0.39	<0.001
Refugees	117	0.7	0.29	0.24	0.34	<0.001	0.38	0.31	0.46	<0.001
Refugees versus non-refugee migrants	-	-	0.95	0.78	1.15	0.58	1.06	0.87	1.30	0.54
Cannabis use disorder										
Swedish-born	4,381	0.4	1				1			
Non-refugee migrants	301	0.3	0.96	0.85	1.08	0.49	0.81	0.70	0.93	0.003
Refugees	52	0.3	0.93	0.71	1.22	0.59	0.96	0.72	1.29	0.78
Refugees versus non-refugee migrants	-	-	0.97	0.72	1.30	0.92	1.18	0.88	1.59	0.27
Polydrug use disorder										
Swedish-born	7,553	0.7	1				1			
Non-refugee migrants	246	0.2	0.48	0.43	0.55	<0.001	0.44	0.37	0.51	<0.001
Refugees	53	0.3	0.59	0.45	0.77	<0.001	0.58	0.44	0.78	<0.001
Refugees versus non-refugee migrants	-	-	1.21	0.90	1.63	0.21	1.34	0.99	1.80	0.06

¹Adjusted for age, sex, birth year, family income, family employment, population density, and PTSD diagnosis.

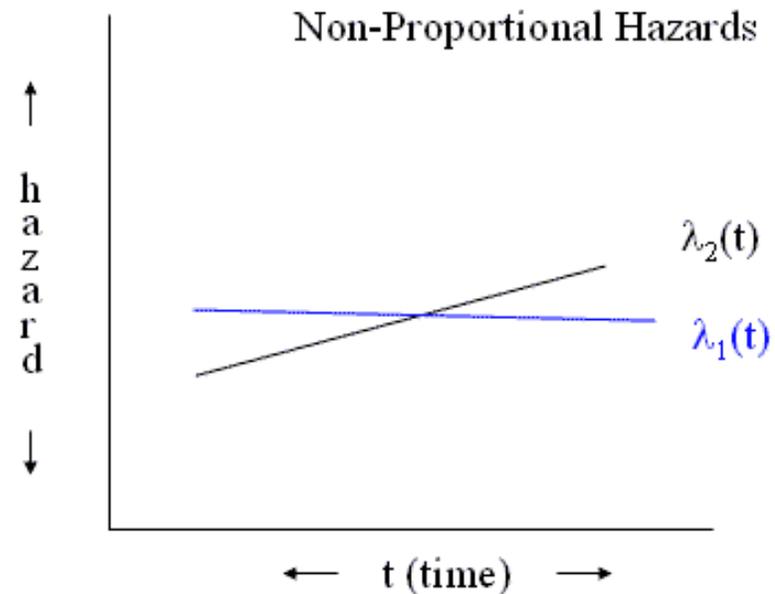
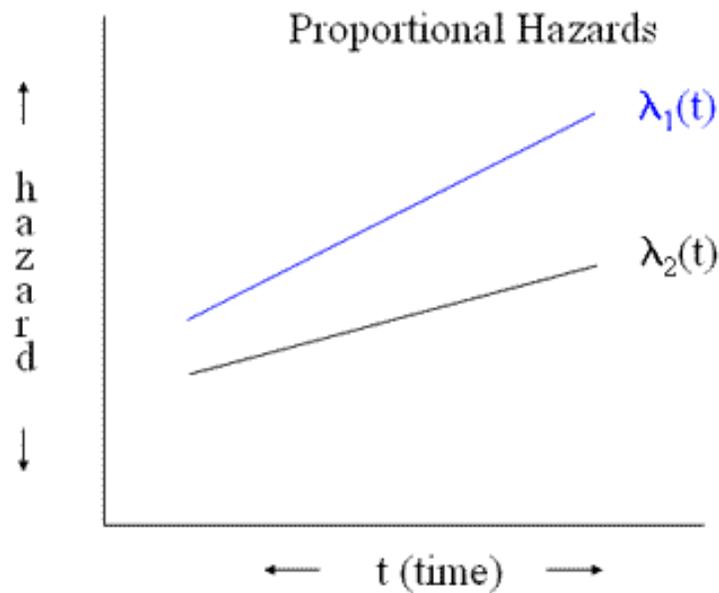
Abbreviations: CI, confidence interval; HR, hazard ratio

Strengths and Limitations

Strengths	Limitations
✓ 1st epi study on this topic in Sweden	✗ Rare outcomes
✓ Large, complete cohort	✗ Differential ascertainment bias (refugees less likely to access services?)
✓ Implications for current political situation	✗ Missing data (education, pre-migratory experiences)

Survival analysis

- Set of methods for analyzing data where the outcome variable is the time until an event occurs e.g. developing a SUD



Hazard ratio

- Comparison of the probability of an event occurring in different groups
 - E,g. developing SUD in refugees, non-refugee migrants, and Swedish-born
 - Incorporates time to event information – how long until people develop condition
 - A HR of 3 means the group is experiencing 3 times the events in comparison to the reference group at *any point in time*
- Differs from odds ratio and relative risk as these are cumulative over the entire study, while HRs represent instantaneous risk over the study time period
 - Can include risks that happen before the end point of the study

Theories: possible explanations for SUD and PTSD

- Self- medication hypothesis (Khantzian, 1985)
- High-risk hypothesis (Acierno et al., 1999)
- Neurobiology: anxiety and SUD have common neurobiologic pathways (Brady et al., 2005)