Effects of Nativity, Duration of Residence and Age at Migration on Risky Alcohol Drinking in Australia: Evidence from an Australian Longitudinal Study

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Short Abstract

We investigated the differences and changes in risky drinking behaviour among immigrants from English Speaking countries (ESC) and non-English Speaking countries (NESC) relative to Native-Born (NB) Australians, and how those differences changed with duration of residence (DoR) and age at arrival (AA). We also explored whether the association between nativity, duration of residence (DoR) and risky drinking behaviour is mediated by English language proficiency, socioeconomic factors, and health behaviour factors. We used 21 waves data from a nationally representative longitudinal dataset: Household, Income and Labour Dynamics in Australia survey. Drinking behaviour as an outcome was dichotomized as risky drinkers (defined as those who had more than two standard alcoholic drinks on a day) and safe drinkers (combining never drinkers and respondents those who had less than or equal to two standard alcoholic drinks on a day).

We found that immigrants from NESC had lower odds of risky drinking, relative to NB respondents. In contrast, there was no significant difference in the odds of risky drinking between immigrants from NES and NB respondents. There was no evidence of a significant change in these results by DoR amongst immigrant groups from either ESC or NESC. Irrespective of AA in Australia, immigrants had lower odds of risky drinking than the NB Australians. Socioeconomic status was found to be a potential mediator for the association between DoR and risky alcohol drinking. This paper challenges the commonly held assumption that migrant and longer stay in the host country is associated with a decline in health.

Extended abstract

Many observational studies have seen a health advantage among foreign-born (FB) people as compared with the native-born (NB), and a decline in that health advantage the longer they stay in the host country. However, most of the evidence from the existing literature is limited by the use of cross-sectional study design, use of single indicator of health and poor control of time varying confounders. Additionally, little attention has been paid to understand the pathways and mechanisms by which transition of health over time, limiting the ability to implement policies that will result in improved health for all, including immigrants. Most of these explanations are speculative. This arises partly from a lack of reliable data linking health outcomes to migration status, and the background and experiences of migrants.

The present study advances the migrant health literature by providing estimates of the nativity gap in risky drinking behaviour for Australia based on an analysis of 21 years of follow-up data from the nationally representative longitudinal dataset, Household Income and Labour Dynamics in Australia (HILDA) Survey. Using so-called hybrid regression models that separate within-person and between-person variations over time, we examine the associations of nativity (native-born (NB) and immigrants from English speaking (ES) and non-English speaking (NES) countries of origin) and duration of residence (DoR) with prevalence of risky drinking behaviour, and whether the association between nativity–DoR and risky drinking behaviour overtime is modified by age at arrival in Australia. We also examine the mediating role of English language proficiency, socioeconomic status and health behaviour factors in the association between nativity and duration of residence and risky drinking behaviour. We focus on risky drinking behaviour as it is considered as one of the global leading health risk factors, resulting in approximately 3.3 million deaths each year and accounting for approximately 5.1

per cent of the global burden of disease. Risky drinking is also a major public health concern world over due to enormous social, health and economic costs.

With respect to our three research questions, we found that:

1. Immigrants from NESC had lower odds of risky drinking, relative to NB respondents. In contrast, there was no significant difference in the odds of risky drinking between immigrants from NES and NB respondents.

2. There was no evidence of a significant change in these results by DoR amongst immigrant groups from either ESC or NESC.

3. Irrespective of AA in Australia, immigrants (combined ESC and NESC) had lower odds of risky drinking than the NB Australians. Additionally, there was no evidence of moderating effect of AA in the associations between nativity and risky drinking and DoR and risky drinking behaviour.

4. Socioeconomic status was found to be a potential mediator for the association between DoR and risky alcohol drinking among short-term (DoR <10 years) immigrants from ESC and long-term (DoR ≥ 20 years) NESC immigrants.

Table 1: Multilevel mixed (hybrid) logistic regression results showing the odds ratios (OR) and their 95% confidence intervals (CI) of risky drinking by nativity/country of birth (CoB).

Effect	Model I		Model II		Model III		Model IV	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Nativity status / CoB								
ESC	1.03	(0.83, 1.29)	1.03	(0.83, 1.29)	1.08	(0.86, 1.34)	1.09	(0.87, 1.35)
NESC	0.13**	(0.11, 0.17)	0.31**	(0.23, 0.42)	0.43**	(0.31, 0.58)	0.43**	(0.32, 0.59)
NB (R)	1.00		1.00		1.00		1.00	

Notes: Nativity status/country of birth (CoB) is categorised as NB (native-born), FB (foreign-born) from English speaking countries (ESC) and non-English speaking countries (NESC).
Model I controls for age, sex, wave number (time), and number of times a person responded between waves 1 and 12. Model II adds English language proficiency to the covariates in Model I. Model III additionally includes the socioeconomic status (level of education, employment status, marital status, and household equivalised income) to the covariates in Model II. Model IV adds social participation and social club membership to the covariates in Model III.

Table 2: Multilevel mixed (hybrid) logistic regression results showing the odds ratios (OR) and their 95% confidence intervals (CI) of risky drinking by (i) duration of residence (DoR) and (ii) nativity/country of birth (CoB) combined with duration of residence (CoB/DoR).

Effect	Model I		Model II		Model III		Model IV	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
DoR								
DoR < 10	0.12**	(0.08, 0.17)	0.36**	(0.24, 0.53)	0.44**	(0.30, 0.64)	0.48**	(0.33, 0.70)
DoR 10 - 19	0.26**	(0.20, 0.35)	0.66**	(0.48, 0.90)	0.72*	(0.53, 0.99)	0.77	(0.56, 1.05)
DoR ≥ 20	0.59**	(0.47, 0.73)	0.91	(0.73, 1.14)	0.97	(0.77, 1.21)	0.92	(0.74, 1.16)
NB (R)	1.00		1.00		1.00		1.00	
CoB/DoR								
ESC; DoR < 10	1.52	(0.86, 2.69)	1.55	(0.88, 2.72)	1.79*	(1.01, 3.16)	1.78*	(1.01, 3.12)
ESC; DoR 10 - 19	1.19	(0.78, 1.81)	1.19	(0.78, 1.82)	1.16	(0.76, 1.77)	1.15	(0.75, 1.75)
ESC; DoR ≥ 20	0.95	(0.72, 1.26)	0.91	(0.69, 1.20)	0.99	(0.75, 1.31)	1.01	(0.76, 1.33)
NESC; DoR < 10	0.04**	(0.02, 0.06)	0.13**	(0.08, 0.22)	0.14**	(0.08, 0.23)	0.14**	(0.08, 0.24)
NESC; DoR 10 - 19	0.10**	(0.07, 0.15)	0.33**	(0.21, 0.53)	0.36**	(0.23, 0.58)	0.37**	(0.24, 0.60)
NESC; DoR ≥ 20	0.31**	(0.23, 0.42)	0.66*	(0.46, 0.93)	0.73	(0.51, 1.04)	0.71	(0.50, 1.01)
NB (R)	1.00		1.00		1.00		1.00	

Notes: Nativity status/country of birth (CoB) is categorised as native-born (NB), foreign-born (FB) from English speaking countries (ESC) and non-English speaking countries (NESC). Duration of residence (DoR) in Australia is categorised as less than 10 years, 10 to19 years and greater than or equal to 20 years, and is combined with the nativity status as described above. Model I controls for age, sex, wave number (time), and number of times a person responded between waves 1 and 12. Model II adds English language proficiency to the covariates in Model I. Model III additionally includes the socioeconomic status (level of education, employment status, marital status, and household equivalised income) to the covariates in Model II. Model IV adds social participation and social club membership to the covariates in Model III.
*$p < 0.05$; **$p < 0.01$.

Table 3: Multilevel mixed (hybrid) logistic regression results showing the odds ratios (OR) and their 95% confidence intervals (CI) of risky drinking by (i) age at arrival (AA) (ii) nativity/country of birth combined with age at arrival (CoB/AA) and (iii) duration of residence combined with age at arrival (DoR/AA).

Effects	Model I		Model II		Model III		Model IV	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
AA								
AA; <18	0.47**	(0.37, 0.59)	0.74*	(0.58, 0.94)	0.79	(0.62, 1.01)	0.81	(0.63, 1.03)
AA; 18-34	0.33**	(0.26, 0.41)	0.77	(0.59, 1.00)	0.90	(0.68, 1.17)	0.91	(0.70, 1.19)
AA; ≥ 35	0.16**	(0.10, 0.26)	0.37**	(0.23, 0.59)	0.49**	(0.31, 0.79)	0.52**	(0.32, 0.82)
NB (R)	1.00		1.00		1.00		1.00	
CoB/AA								
ESC; AA <18	1.23	(0.89, 1.69)	1.23	(0.90, 1.69)	1.28	(0.94, 1.76)	1.29	(0.94, 1.77)
ESC; AA 18-34	1.04	(0.75, 1.45)	1.04	(0.75, 1.44)	1.12	(0.81, 1.55)	1.11	(0.80, 1.54)
ESC; AA ≥ 35	0.57	(0.31, 1.05)	0.57	(0.31, 1.04)	0.62	(0.33, 1.14)	0.62	(0.34, 1.15)
NESC; AA <18	0.18**	(0.13, 0.26)	0.40**	(0.28, 0.57)	0.40**	(0.28, 0.58)	0.42**	(0.29, 0.60)
NESC; AA 18-34	0.11**	(0.08, 0.16)	0.40**	(0.26, 0.61)	0.54**	(0.35, 0.83)	0.58*	(0.38, 0.89)
NESC; AA ≥ 35	0.10**	(0.05, 0.17)	0.31**	(0.16, 0.61)	0.42*	(0.21, 0.83)	0.45*	(0.23, 0.89)
NB (R)	1.00		1.00		1.00		1.00	
DoR/AA								
DoR < 10; AA <18	0.07**	(0.03, 0.17)	0.39*	(0.17, 0.89)	0.31**	(0.13, 0.71)	0.28**	(0.12, 0.64)
DoR < 10; AA 18-34	0.14**	(0.08, 0.22)	0.53**	(0.33, 0.85)	0.64	(0.40, 1.04)	0.64	(0.40, 1.03)
DoR < 10; AA ≥ 35	0.13**	(0.06, 0.26)	0.49*	(0.25, 0.95)	0.56	(0.28, 1.09)	0.51	(0.26, 1.02)
DoR 10-19; AA < 18	0.26**	(0.16, 0.40)	0.76	(0.48, 1.20)	0.72	(0.46, 1.14)	0.67	(0.43, 1.06)
DoR 10-19; AA 18-34	0.28**	(0.18, 0.43)	0.80	(0.51, 1.26)	0.86	(0.55, 1.36)	0.90	(0.57, 1.42)
DoR 10-19; AA ≥ 35	0.23**	(0.11, 0.49)	0.65	(0.30, 1.38)	0.75	(0.35, 1.62)	0.76	(0.35, 1.64)
DoR ≥ 20; AA <18	0.69**	(0.52, 0.91)	0.88	(0.66, 1.16)	0.94	(0.71, 1.25)	0.94	(0.71, 1.25)
DoR ≥ 20; AA 18-34	0.52**	(0.37, 0.73)	0.93	(0.65, 1.33)	1.11	(0.78, 1.58)	1.12	(0.78, 1.59)
DoR ≥ 20; AA ≥ 35	0.26**	(0.11, 0.61)	0.46	(0.19, 1.14)	0.55	(0.22, 1.33)	0.51	(0.20, 1.28)
NB (R)	1.00		1.00		1.00		1.00	

Notes: Nativity status/country of birth (CoB) is categorised as native-born (NB), foreign-born (FB) from English speaking countries (ESC) and non-English speaking countries (NESC). Duration of residence (DoR) in Australia is categorised as less than 10 years, 10 to19 years and greater than or equal to 20 years, and is combined with AA categories: less than 18 years, 18 to 34 years and greater than or equal to 35 years.

Model I controls for age, sex, wave number (time), and number of times a person responded between waves 1 and 12. Model II adds English language proficiency to the covariates in Model I. Model III additionally includes the socioeconomic status (level of education, employment status, marital status, and household equivalised income) to the covariates in Model II. Model IV adds social participation and social club membership to the covariates in Model III.

$*p < 0.05$; $**p < 0.01$.