

Do Gender Differences in the Relationship between Living with Children and Alcohol Consumption Vary by Societal Gender Inequality?

Kathryn Graham, PhD

Emeritus Scientist, Centre for Addiction and Mental Health, Toronto/London, Ontario, Canada
Adjunct Professor, Dalla Lana School of Public Health, University of Toronto, Ontario, Canada
Adjunct Professor, National Drug Research Institute, Curtin University, Western Australia, Canada

Sharon Bernards, MA

Research Methods Specialist, Centre for Addiction and Mental Health, Toronto/London, Ontario, Canada

Katherine J. Karriker-Jaffe, PhD

Senior Scientist, Alcohol Research Group, Emeryville, California, USA

Sandra Kuntsche, PhD

Principal Research Fellow, Centre for Alcohol Policy Research, La Trobe University,
Melbourne, Australia

Anne-Marie Laslett, PhD

Senior Research Fellow, Centre for Alcohol Policy Research, La Trobe University, Melbourne, Australia
Adjunct Senior Research Fellow, National Drug Research Institute, Curtin University, Western Australia,
Australia

Gerhard Gmel, PhD

Senior Research Fellow, Addiction Switzerland, Lausanne, Switzerland
Senior Research Fellow, Addiction Medicine, Lausanne University Hospital and University of Lausanne,
Lausanne, Switzerland
Affiliate Scientist, Centre for Addiction and Mental Health, Toronto/London, Ontario, Canada
Visiting Professor, University of the West of England, Bristol, United Kingdom

Sarah Callinan, PhD

Senior Research Fellow, Centre for Alcohol Policy Research, La Trobe University, Melbourne, Australia

Oliver Stanesby, MSc(Epi)

Research Officer, Centre for Alcohol Policy Research, La Trobe University, Melbourne, Australia
Research Assistant, Menzies Institute for Medical Research, University of Tasmania, Hobart, Australia

Samantha Wells, PhD

Senior Director, Institute for Mental Health Policy Research, Centre for Addiction and Mental Health,
Toronto/London, Ontario, Canada
Associate Professor, Dalla Lana School of Public Health, University of Toronto, Ontario, Canada
Associate Professor, Department of Psychiatry, University of Toronto, Ontario, Canada
Adjunct Associate Professor, Department of Epidemiology and Biostatistics, Western University,
London, Ontario, Canada
Adjunct Associate Professor, School of Psychology, Deakin University, Geelong, Victoria, Australia

Address of corresponding author:

Kathryn Graham, PhD

1
2
3 Centre for Addiction and Mental Health
4 Suite 200, 100 Collip Circle
5 London, Ontario, Canada N6G 4X8
6 Telephone: 1-519-858-5000
7 FAX: 1-519-858-5199
8 e-mail: kgraham@uwo.ca
9
10

11 **Funding source:** NIAAA Grant No. R01 AA023870 (*Alcohol's Harm to Others: Multinational*
12 *Cultural Contexts and Policy Implications*). The supporting organizations had no role in study
13 design, data collection, data analysis, interpretation of results or decision to submit the
14 manuscript for publication. The content of this paper is the sole responsibility of the authors and
15 does not reflect official positions of NIH or NIAAA.
16
17

18 **Conflict of Interest:** None to declare.
19

20 A version of this paper was presented at the 44th annual meeting of the Kettil Bruun Society for
21 Social and Epidemiological Research on Alcohol in Chiang Mai, Thailand
22
23

24 **Running Title:** Alcohol Use, Living with Children and Gender
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Abstract

Introduction and aims. To better understand the relationship between alcohol consumption and living with children, we assessed whether the association varied for men and women across diverse countries and whether this relationship was moderated by country-level gender inequality.

Design and methods. We used Hierarchical Linear Modelling to analyse data from 32 surveys conducted in 27 countries. Measures included whether the participant was a drinker versus abstainer in past 12 months, annual number of drinks consumed, whether the respondent lived with children, gender (male/female) and age of respondent, and country-level gender inequality measured using the Gender Inequality Index (GII).

Result. Annual drinks consumed was significantly lower for women living with children. Men living with children were generally *more likely* to be drinkers, and the relationship between annual consumption and living with children was moderated by cultural gender equality: specifically, men in countries with higher gender equality drank less if they lived with children while the association for men in lower equality countries was nonsignificant.

Discussion and conclusions. Although lower alcohol consumption was found generally for women living with children, this relationship was found only for men in countries where there was more gender equality. Given the high risk of harm to children from heavy consumption by adults with whom they live, prevention efforts need to strengthen prevention of heavy consumption by parents and other who live with children, especially for men who live with children in low gender equality countries.

Keywords: alcohol consumption, living with children, gender equality, gender differences

Introduction

Children are at risk of a variety of harms related to alcohol consumption [1] and alcohol abuse [2-5] by their parents and other adults with whom they live, including physical harm and exposure to family violence [6]. Thus, stopping or reducing alcohol consumption can be an important harm prevention strategy for parents and other adults who live with children.

Accordingly, some research has found that parents drink less than non-parents, although this has not been found in all studies [7-13]. Parents may be motivated to drink less as a way of reducing risk of harms to children for whom they are responsible [14]. Other reasons why persons might reduce their drinking when they become parents include additional obligations associated with parenting [15] and lifestyle changes after becoming a parent such as drinking in different social contexts with lower consumption norms (e.g., home compared with other settings) [16].

To date research has focused on the effects of parenting and has not examined whether adults who live with children (whether or not they are the child's parent) are generally more likely to abstain or drink less compared with adults who do not live with children. In addition, lower alcohol consumption is likely to be related to gender or gender roles associated with parenting or childcare [7]. For example, parenting has been found to be more strongly associated with a reduction in drinking by women than by men [7, 8]. To the extent that this gender difference in the relationship of parenting with drinking reflects differences in gender roles generally (e.g., greater childcare responsibilities for women than for men), female adults may be more likely than male adults to drink less if they live with children (whether or not they are the parent).

Gender equality in the culture may also be a factor in the relationship between alcohol use and harms to others including children. For example, a US study found that state level indicators of gender equality moderated the relationship between binge drinking and harm to others

1
2
3 associated with drinking [17]. In terms of gender roles, cross-cultural studies have found that
4
5 men play a more active role in childcare in countries where there is greater gender equality [18,
6
7 19]. Thus, in countries with higher levels of gender equality where men are more involved in
8
9 childcare, men as well as women may be more likely to reduce their alcohol consumption when
10
11 they live with children. Men in low gender equality countries, on the other hand, may have less
12
13 responsibility for childcare and, therefore, be less likely to reduce their drinking if they live with
14
15 children. Thus, both gender of the adult and gender equality at the societal level might affect the
16
17 relationship between drinking and living with children.
18
19

20
21 To assess whether living with children is associated with lower alcohol consumption and
22
23 whether this association varies by gender of the drinker or cultural gender equality, we examined
24
25 the relationship between alcohol consumption and living with children using data from 32
26
27 surveys conducted in 27 countries. We hypothesized that:
28
29

- 30
31 (1) Overall men and women who lived with children would be more likely to abstain from
32
33 drinking, and, among drinkers, men and women living with children would drink less
34
35 compared to people who did not live with children;
36
37 (2) The relationship between living with children and abstaining/lower alcohol consumption
38
39 would be stronger for women than for men because, for example, of women's greater role
40
41 in caring for children;
42
43 (3) The relationship between living with children and lower alcohol consumption would be
44
45 stronger for men in higher versus lower gender equality countries where men may have a
46
47 greater role in direct care to children.
48
49
50

51 Method

52
53
54
55
56
57
58
59
60

1
2
3 This research uses data from: (a) the multi-national GENACIS collaboration (Gender,
4 Alcohol, and Culture: An International Study) involving over 40 countries, including less
5 affluent countries that had never previously conducted comprehensive surveys on alcohol
6 consumption [20, 21]; (b) the multi-national GENAHTO project (Gender and Alcohol's Harm to
7 Others: Multinational Cultural Contexts and Policy Implications) [22, 23, 24, see also
8 <http://genahto.org/>] and (c) the European Comparative Alcohol Study (ECAS) [25]. Countries
9 from these projects with relevant data on living with children and comparable measures of
10 drinking pattern were included.
11
12
13
14
15
16
17
18
19
20
21

22 **Design and sampling**

23
24 The analyses included 28,417 men and 35,494 women who participated in 32 cross-sectional
25 surveys in 27 countries from diverse areas of the world, including: Africa; Europe; North, South
26 and Central America; Asia; and Australia and New Zealand (see Table 1 for list of countries,
27 geographic coverage of surveys, sample sizes and year conducted). Surveys were administered
28 face-to-face except in: Australia, Canada, France, the second Ireland survey, Italy, Sweden and
29 the second United Kingdom survey which were completed 100% by telephone; Isle of Man
30 (57.5% face-to-face and 42.5% telephone); the first United States survey (72.0% face-to-face and
31 28.0% telephone); and Japan and New Zealand (self-administered and returned by postal mail).
32
33 The response/completion rate for each country is shown in Table 1 (where available). Because of
34 variations in sampling methods and recording of nonrespondents, rates were not available for all
35 surveys.
36
37
38
39
40
41
42
43
44
45
46
47
48

49 **Measures**

50
51 **Demographic variables.** Participant's gender was recorded by the interviewer (or recorded
52 on the questionnaire for self-administered surveys), and participants were asked for their year of
53
54
55
56
57
58
59
60

1
2
3 birth. The age range of participants varied across surveys; therefore, analyses were limited to
4 persons aged 18 to 65 (18-64 for Peru) to maximize comparability of samples. Percent female
5 and mean age of respondents are shown in Table 1.
6
7
8

9
10 **Living with children.** Participants were asked how many children under the age of 18 lived
11 with them (under age 20 in Norway) at the time of the survey. In Japan, participants were asked
12 with whom they lived, including their own or their spouse's/partner's children (less than 18 years
13 of age), their married or unmarried adult children (18 and older) and other relatives. This
14 variable was dichotomized as lives with children under 18 years of age (under 20 in Norway) (1)
15 versus does not live with children (0).
16
17
18
19
20
21
22
23

24 **Drinking status.** In some countries, participants were asked if they drank any alcohol (more
25 than a sip or taste) in the past 12 months (categorized as drinker vs. abstainer). For those
26 countries that did not ask specifically about drinking status, participants were defined as
27 abstainers if they answered "never" to the question on frequency of drinking in the past 12
28 months.
29
30
31
32
33
34

35 **Volume of alcohol consumption: number of standard drinks (12 g. absolute alcohol)**
36 **past 12 months.** Annual number of drinks was calculated as the product of measures of quantity
37 and frequency. For frequency, participants were asked overall frequency of drinking any kind of
38 alcohol in the past 12 months. In some countries, beverage-specific questions on how often
39 participants drank beer, wine, liquor, and other alcoholic drinks in the past 12 months were asked
40 before the overall frequency question. The frequency score was based on the maximum
41 frequency reported either for a specific beverage or for drinking overall. Response categories
42 varied slightly among countries. To ensure consistency across surveys, responses were converted
43 into the following categories, which were then converted into estimated number of drinking days
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 per week (and multiplied by 52 for number of drinks per year): never (abstainer, 0 days), less
4
5 than once a month (.12 days per week), 1-3 times a month (.46 days), once or twice a week (1.5
6
7 days), 3 or 4 days a week (3.5 days) or 5 to 7 days a week (6 days).
8
9

10 For quantity, participants were asked about the usual number of standard drinks consumed on
11
12 days they drank during the past 12 months. Because standard drink sizes vary across countries,
13
14 responses were converted into number of drinks based on each drink containing 12g of absolute
15
16 alcohol.
17
18

19 **Gender inequality.** Country- level gender equality was measured using the Gender
20
21 Inequality Index (GII). The GII was developed in 2010 by the United Nations Development
22
23 Forum to address some of the weaknesses of previous gender inequality measures [26]. The
24
25 measure is comprised of the following sub-indices: reproductive health (maternal deaths per
26
27 100,000 live births, adolescent birth rate – i.e., births per 1,000 women ages 15–19);
28
29 empowerment (percent of male and female population aged 25 and older with at least some
30
31 secondary education, % of parliamentary seats held by women); and labour market participation
32
33 (female and male labour force participation rates for persons aged 15 and older). These indices
34
35 were chosen for their conceptual relevance, non-ambiguity, reliability, value added and power of
36
37 discrimination. In addition, although gender equality is associated with income, the GII is less
38
39 confounded with income level of the country than are other measures of gender equality [26].
40
41 For the present purposes, we chose to use the 2017 GII scores for all countries (shown in Table
42
43 1), rather than the GII for the year of the survey, because using scores for the same year for all
44
45 countries provides the best way for *relative* comparison of gender inequality across countries.
46
47
48
49
50

51 The GII measures gender *inequality* using a scale between 0 and 1. To make the scale more
52
53 easily interpretable, it was reverse coded to be a measure of *equality*, with higher scores meaning
54
55
56
57
58
59
60

1
2
3 greater equality, and then multiplied by 10 to generate scores that ranged from 4.76 for India to
4
5 9.60 for Denmark (see Table 1).
6

7 8 **Ethics**

9
10 Individual country surveys were reviewed according to procedures created to protect research
11
12 participants in each country.
13

14 15 **Analyses**

16
17 Regression analysis was conducted separately for male and female participants using
18
19 Hierarchical Linear Modelling (V7.0.2) to adjust standard errors for nesting of individuals (level
20
21 1) within country (level 2). Using a Bernoulli model for dichotomous outcomes, odds ratios were
22
23 computed for drinking status regressed on living with children (level 1), gender equality (level 2)
24
25 and the cross-level interaction of living with children and gender equality. We also computed
26
27 coefficients for annual number of standard drinks regressed on living with children (level 1),
28
29 gender equality (level 2) and the cross-level interaction of living with children and gender
30
31 equality. All analyses controlled for age because age of parent has been identified as a modifier
32
33 of the relationship between parenthood and alcohol consumption [10, 13, 27]. All variables at the
34
35 individual level (level 1) were grand mean centred and contained a random error component for
36
37 the slope. To better understand the interaction of gender equality with living with children for
38
39 volume of consumption by male drinkers, we dichotomized gender equality into greater gender
40
41 equality (GII < .200, 14 countries) and less gender equality (GII >= .200, 13 countries).
42
43
44
45
46

47 48 **Results**

49
50 Descriptive statistics relating to living with children, being a drinker and annual volume of
51
52 alcohol consumption (drinks per year) are shown in Table 2, displayed separately for men and
53
54 women and for each country. As evident in the table, the overall rate of abstaining across
55
56
57
58
59

1
2
3 countries was 19.6% for male and 40.3% for female participants living with children, and 19.5%
4
5 for male and 29.8% for female participants without children. However, rates of abstaining within
6
7 individual countries varied from 3.5% for Isle of Man's male participants with children to 97.7%
8
9 for female participants living with children in India.
10
11

12 Table 2 also shows the annual number of standard drinks consumed by male and female
13
14 drinkers from each country by whether they live with children. As with rates of abstaining, there
15
16 was considerable variability in consumption among drinkers from each country, with a low of
17
18 34.9 drinks per year among Sri Lankan women living with children to a high of 636.4 drinks for
19
20 Ugandan women not living with children.
21
22

23 **Drinker versus abstainer**

24
25
26 As hypothesized, living with children was negatively associated with being a drinker for
27
28 women (shown in Model 1a in Table 3); however, this relationship was partly influenced by the
29
30 high rate of abstaining and living with children for women from India and Sri Lanka. When these
31
32 two countries were excluded from the analyses, the relationship between abstaining and living
33
34 with children was no longer significant for women (OR = .94, $p = .155$). Contrary to prediction,
35
36 living with children was *positively* associated with being a drinker for men, and the relationship
37
38 remained significant when responses from India and Sri Lanka were excluded.
39
40
41

42 In terms of the relationship of gender equality and drinking, as shown in Table 3, for every
43
44 increase in gender equality of 1.00 point (on the 10-point scale), the odds of being a drinker
45
46 increase by 1.60 for men and 2.11 for women. The interaction of gender equality by living with
47
48 children (Model 1b) was not significant for men or women, indicating that the relationship
49
50 between living with children and drinking was not significantly modified by gender equality of
51
52 the country.
53
54
55
56
57
58
59
60

Annual number of standard drinks consumed

Table 3 also shows two models for annual number of drinks consumed by drinkers, with the second model including the interaction of living with children by gender equality. This interaction was not significant for women; thus, the main effects model (Model 2a) is more appropriate for interpretation (i.e., gender equality did not significantly modify the link between living with children and volume of drinking). Thus, as shown Model 2a, living with children (vs. not living with children) was associated with women drinking 54 fewer drinks annually.

For men, on the other hand, there was a significant interaction of gender equality with living with children (Model 2b, Table 3). To explore this interaction, we conducted regressions of alcohol consumption on living with children for men in countries with greater versus less gender equality using the dichotomized GII score. As shown in Table 4, living with children was associated with consuming 104 *fewer* drinks per year for men from high equality countries ($p < .001$) but with 35 *more* drinks per year (compared to men not living with children) for men in countries with lower gender equality (nonsignificant).

Discussion

The association between living with children and alcohol use varied by both gender and gender equality of the country. Women who lived with children were overall more likely to abstain from alcohol, although this relationship appeared to be mostly due to the high rates of abstaining and living with children in India and Sri Lanka and became nonsignificant when these countries were excluded from the analyses. On the other hand, men who lived with children were significantly *more* likely than those who did not live with children to have consumed alcohol in the past 12 months.

1
2
3 Women living with children drank significantly less than did women not living with children
4 and this relationship was not significantly modified by cultural gender equality. For men,
5
6 however, participants from countries with higher gender equality drank significantly less if they
7
8 lived with children, while men who lived with children in countries with lower gender equality
9
10 drank slightly more.
11
12
13

14
15 Strengths of the study include the participation of men and women from diverse countries in
16
17 six continents, and this diversity contributes to the generalizability of the overall findings. An
18
19 additional strength is the use of comparable questions across surveys. A possible limitation of the
20
21 analysis is that surveys were done at different time periods and using different modes. In
22
23 addition, there was variability in response rates across countries. The extent that these sources of
24
25 variability affect the findings regarding the relationship between drinking, living with children
26
27 and cultural gender equality is unknown.
28
29
30

31 The analysis was strengthened by the use of HLM to control for nesting of participants in
32
33 countries and controlling for age of the respondent. A limitation of the study is that most surveys
34
35 did not contain data on age of children which may moderate the relationship between living with
36
37 children and alcohol consumption [28] and would be an important factor to consider in future
38
39 research. The use of the Gender Inequality Index (GII) as a measure of cultural gender equality is
40
41 a strength because it was designed to improve previous measures by including four key
42
43 dimensions and addressing deficits in previous measures of gender equality, such as confounding
44
45 with country-level economic well-being. Nevertheless, higher societal gender equality tends to
46
47 be associated with higher income (with some notable exceptions – see 26). Thus, it is important
48
49 for future research to investigate the independent influences of both country wealth and gender
50
51 equality on alcohol consumption of men who live with children. Although a strength of this
52
53
54
55
56
57
58
59
60

1
2
3 study was being able to examine drinking by all adults who lived with children (parents, other
4 family, other non-family), a limitation was that the data were not available to compare findings
5 for parents versus other adults in the household.
6
7
8
9

10 These findings of drinking by adults generally are consistent with previous studies of
11 parental drinking showing a stronger relationship between living with children and alcohol
12 consumption for women than for men [7, 8]. A Swedish longitudinal population-based analysis
13 [28] concluded that the lower risk of alcohol use disorder among women who had children
14 (compared to women with no children) was likely causal – that is, due to the presence of children
15 rather than to other possible differences between women with children and women without.
16
17 However, more research is needed to explore the extent that the lower alcohol consumption
18 among female adults living with children reflects lifestyle changes made related to parenting
19 [16], a conscious decision to drink less because of childcare concerns [15], or possibly other
20 factors.
21
22
23
24
25
26
27
28
29
30
31
32

33 For men, those living with children were *more* likely to drink (vs. abstain) compared to men
34 not living with children, and this relationship was not significantly moderated by gender equality
35 in the culture. This finding was unexpected and not easy to explain. More research is needed to
36 better understand this finding.
37
38
39
40
41

42 Findings from previous research have been inconsistent regarding the relationship between
43 men's alcohol consumption and living with children, with some results suggesting a significant
44 reduction and others showing no relationship [7-9, 13]. Examining possible moderation by
45 cultural gender equality, however, provides new knowledge regarding this relationship.
46
47 Specifically, there was a strong and significant negative relationship between annual volume of
48 consumption and living with children for men in countries with greater gender equality, while
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 there was no significant relationship for men in countries with less equality. It is possible that
4 men in high equality countries assume more childcare responsibilities than do men in lower
5 equality countries, and it is this role with children that accounts for the difference in the
6 relationship between drinking and living with children [7]. In addition, paid paternity leave that
7 is provided in some countries with greater gender equality may enhance both the extent of
8 childcare by men and consequently the extent that heavier drinking is reduced by men because of
9 childcare responsibilities. As well, if women in lower gender equality countries are seen as the
10 primary caretaker of children, men in these countries may perceive less need to reduce their
11 drinking, consistent with findings by Raitasalo [14] that drinking to intoxication in front of
12 children is seen as more acceptable if there is another adult present to ensure the safety of the
13 children.
14
15
16
17
18
19
20
21
22
23
24
25
26
27

28 Children are at risk of a variety of harms from drinkers in their environment [1, 6]. And,
29 although alcohol abuse or alcohol disorder by the mother may have a closer relationship to long-
30 term damage to offsprings' mental health compared to abuse/disorder by the father [2-5], men in
31 all cultures drink more than do women, sometimes much more [21] and are more likely to self-
32 report harm to others from their drinking [29]; therefore, men's drinking has the potential to
33 affect a larger number of children compared with women's drinking.
34
35
36
37
38
39
40
41

42 The finding that male drinkers consume less alcohol if they live with children in countries
43 with greater gender equality offers new insight into possible factors that could lead to reduced
44 alcohol-related harm to children. For example, interventions to increase gender equality in a
45 country may form an important strategy for reducing harms to children from men's drinking.
46 Alternatively, increasing men's responsibilities for direct care of children may lead to men
47 making greater effort to reduce their alcohol consumption. An important area for future research
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 is to better understand the aspects of gender equality in the society that affect men's possible
4 willingness or perceived need to consume less alcohol if they live with children.
5
6

7 8 **Conclusions**

9
10 Because of harms to children from adult drinkers in the household, it is important to
11 understand how living with children is associated with the drinking of adults. The results from
12 this research across a large and diverse group of countries suggest that generally women who
13 live with children consume less alcohol than do women who do not live with children. For men,
14 on the other hand, the relationship between less alcohol consumption and living with children
15 was significant only for male participants who lived in countries with higher gender equality.
16 Given the high risk of harm to children from heavy consumption by adults with whom they live,
17 prevention efforts need to not only strengthen prevention of heavy consumption by parents and
18 others who live with children but also focus particularly on drinking by men living with children,
19 especially in countries with less gender equality.
20
21
22
23
24
25
26
27
28
29
30
31
32

33 **Acknowledgments**

34
35 The data used in this paper are from the GENAHTO Project (Gender and Alcohol's Harm to
36 Others), supported by NIAAA Grant No. R01 AA023870 (*Alcohol's Harm to Others:
37 Multinational Cultural Contexts and Policy Implications*). GENAHTO is a collaborative
38 international project affiliated with the Kettil Bruun Society for Social and Epidemiological
39 Research on Alcohol and coordinated by research partners from the Alcohol Research
40 Group/Public Health Institute (USA), University of North Dakota (USA), Aarhus University
41 (Denmark), the Centre for Addiction and Mental Health (Canada), the Centre for Alcohol Policy
42 Research at La Trobe University (Australia), and the Addiction Switzerland Research Institute
43 (Switzerland). Support for aspects of the project has come from the World Health Organization
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

(WHO), the European Commission (Concerted Action QLG4-CT-2001-0196), the Pan American Health Organization, the Thai Health Promotion Foundation, the Australian National Health and Medical Research Council (Grant No. 1065610), and the U.S. National Institute on Alcohol Abuse and Alcoholism/National Institutes of Health (Grants R21 AA012941, R01 AA015775, R01 AA022791, R01 AA023870, and P50 AA005595). Support for individual country surveys was provided by government agencies and other national sources. National funds also contributed to collection of all of the data sets included in WHO projects. Sarah Callinan is funded by a fellowship from the Australian Research Council (DE180100016).

Study directors for the survey data sets used in this paper whom we were able to contact have been asked to review the paper in terms of the project's objective and the accuracy and representation of their contributed data. The study directors and funding sources for data sets used in this report are: **Argentina** Myriam Munné, World Health Organization; **Australia**, Robin Room & Anne-Marie Laslett, Foundation for Alcohol Research and Education (FARE); **Brazil**, Florence Kerr-Correa & Maria Lima, Foundation for the Support of Sao Paulo State Research (Fundação de Amparo a Pesquisa do Estado de São Paulo, FAPESP) (Grant 01/03150-6); **Canada**, Kathryn Graham & Andrée Demers, Canadian Institutes of Health Research (CIHR); **Chile**, Ramon Florenzano, Thai Health Promotion Foundation, World Health Organization; **Costa Rica**, Julio Bejarano, World Health Organization; **Czech Republic**, Ladislav Csémy, Ministry of Health (Grant MZ 23752); **Denmark**, Kim Bloomfield, Centre for Alcohol and Drug Research, Business and Social Sciences, Aarhus University; **India**, Vivek Benegal, World Health Organization; **Ireland 1 and 2**, Ann Hope, Health Service Executive, Ireland; **Japan**, Shinji Shimizu, Japan Society for the Promotion of Science (Grant 13410072); **Laos PDR**, Latsamy Siengsounthe, Thai Health Promotion Foundation, World Health Organization; **New**

1
2
3 **Zealand**, Jennie Connor, Otago University Research Grant; **Nicaragua**, Jose Trinidad Caldera,
4 Pan American Health Organization (PAHO); **Norway**, Sturla Nordlund, Norwegian Institute for
5 Alcohol and Drug Research; **Peru**, Marina Piazza, Pan American Health Organization (PAHO);
6
7
8 **Spain**, Juan C. Valderrama, Dirección General de Atención a la Dependencia, Conselleria de
9 Sanidad, Generalitat Valenciana; **Sri Lanka 1**, Siri Hettige, World Health Organization; **Sri**
10 **Lanka 2**, Siri Hettige, Thai Health Promotion Foundation, World Health Organization; **Sweden**,
11 Karin Bergmark, Ministry for Social Affairs and Health, Sweden; **Thailand**, Orratai Waleewong
12 & Jintana Janchotkaew, Thai Health Promotion Foundation, World Health Organization;
13
14 **Uganda**, Nazarius Mbona Tumwesigye, World Health Organization; **United Kingdom 1**, Martin
15 Plant & Moira Plant, Alcohol Education and Research Council, European Forum for Responsible
16 Drinking, University of the West of England, Bristol; **United Kingdom 3** (Isle of Man), Martin
17 Plant & Moira Plant, Isle of Man Medical Research Council; **United States 1**, Sharon C.
18 Wilsnack & Richard W. Wilsnack, National Institute on Alcohol Abuse and
19 Alcoholism/National Institutes of Health (Grant R01 AA004610); **United States 2**, Thomas
20 Greenfield & Katherine Karriker-Jaffe, National Institute on Alcohol Abuse and
21 Alcoholism/National Institutes of Health (Grant No. R01AA022791); **Uruguay**, Raquel Magri,
22 World Health Organization; **Vietnam**, Hanh T.M. Hoang & Hanh T.M. Vu, Thai Health
23 Promotion Foundation, World Health Organization. European Comparative Alcohol Study
24 (ECAS) surveys in **France**, **Italy** and the **United Kingdom 2** were led by Thor Norström and
25 supported by the European Commission (DG V); National Institute of Public Health (Sweden);
26 Swedish Ministry of Health and Social Affairs; and National Research and Development Centre
27 for Welfare and Health, STAKES (Finland).

References

1. Laslett A-M, Rankin G, Waleewong O, Callinan S, Hoang HTM, Florenzano R, Hettige S, Obot I, Siengsounthone L, Ibanga A, Hope A, Landberg J, Vu HTM, Thamarangsi T, Rikve D, Room R. A multi-country study of harms to children because of others' drinking. *J Stud Alcohol Drugs*. 2017;78:195-202.
2. Jaaskelainen M, Holmila M, Notkola IL, Raitasalo K. Mental disorders and harmful substance use in children of substance abusing parents: a longitudinal register-based study on a complete birth cohort born in 1991. *Drug Alcohol Rev*. 2016;35(6):728-40.
3. Raitasalo K, Holmila M. Parental substance abuse and risks to children's safety, health and psychological development. *Drugs: Education, Prevention and Policy*. 2017;24(1):17-22.
4. Rognmo K, Torvik FA, Ask H, Roysamb E, Tambs K. Paternal and maternal alcohol abuse and offspring mental distress in the general population: the Nord-Trondelag health study. *BMC Public Health*. 2012;12:448.
5. Christoffersen MN, Soothill K. The long-term consequences of parental alcohol abuse: a cohort study of children in Denmark. *J Subst Abuse Treat*. 2003;25(2):107-16.
6. Laslett A-M, Stanesby O, Graham K, Callinan S, Karriker-Jaffe KJ, Wilsnack S, Kuntsche S, Waleewong O, Greenfield TK, Gmel G. Children's experience of physical harms and exposure to family violence from others' drinking in nine societies. *Addict Res Theory*. 2019:1-11.
7. Ahlstrom S, Bloomfield K, Knibbe R. Gender differences in drinking patterns in nine European countries: descriptive findings. *Subst Abuse*. 2001;22(1):69-85.
8. Christie-Mizell CA, Peralta RL. The gender gap in alcohol consumption during late adolescence and young adulthood: gendered attitudes and adult roles. *J Health Soc Behav*. 2009;50(December):410-26.
9. Leonard KE, Eiden RD. Marital and family processes in the context of alcohol use and alcohol disorders. *Annu Rev Clin Psychol*. 2007;3:285-310.
10. Little M, Handley E, Leuthe E, Chassin L. The impact of parenthood on alcohol consumption trajectories: Variations as a function of timing of parenthood, familial alcoholism, and gender. *Dev Psychopathol*. 2009;21:661-82.
11. Neve RJM, Lemmens PH, Drop MJ. Changes in alcohol use and drinking problems in relation to role transitions in different stages of the life course. *Subst Abuse*. 2000;21(3):163-78.
12. Terry-McElrath YM, Patrick ME. Intoxication and binge and high-intensity drinking among US young adults in their mid-20s. *Subst Abuse*. 2016;37(4).
13. Wolfe JD. Age at first birth and alcohol use. *J Health Soc Behav*. 2009;50(December):395-409.
14. Raitasalo K, Holmila M, Mäkelä P. Drinking in the presence of underage children: attitudes and behaviour. *Addict Res Theory*. 2011;19(5):394-401.
15. Hajema KJ, Knibbe RA. Changes in social roles as predictors of changes in drinking behaviour. *Addiction*. 1998;93(11):1717-27.
16. Paradis C. Parenthood, drinking locations and heavy drinking. *Soc Sci Med*. 2011;72(8):1258-65.
17. Karriker-Jaffe KJ, Tam CC, Cook WK, Greenfield TK, Roberts SCM. Gender equality, drinking cultures and second-hand harms from alcohol in the 50 US states. *Int J Environ Res Public Health*. 2019;16(23).
18. DeRose LF, Goldscheider F, Brito JR, Salazar-Arango A, Corcuera P, Corcuera PJ, Gas-Aixendri M. Are children barriers to the gender revolution? international comparisons. *Eur J Popul*. 2019;35(5):987-1021.

19. Fuwa M. Macro-level gender inequality and the division of household labor in 22 countries. *Am Sociol Rev.* 2004;69(6):751-67.
20. Obot IS, Room R, editors. Alcohol, gender and drinking problems. perspectives from low and middle income countries. Geneva: World Health Organization; 2005.
21. Wilsnack RW, Wilsnack SC, Kristjanson AF, Vogelanz-Holm ND, Gmel G. Gender and alcohol consumption: patterns from the multinational GENACIS project. *Addiction.* 2009;104:1487-500.
22. Callinan S, Laslett A-M, Rekke D, Room R, Waleewong O, Benegal V, Casswell S, Florenzano R, Hanh HTM, Hanh VTM, Hettige S, Huckle T, Ibanga A, Obot I, Rao G, Siengsounthone L, Rankin G, Thamarangsi T. Alcohol's harm to others: an international collaborative project. *Int J Alcohol Drug Res.* 2016;5:25-32.
23. Laslett A-M, Room R, Waleewong O, Stanesby O, Callinan S, editors. Harm to others from drinking: Patterns in nine societies. Geneva: World Health Organization, 2019.
24. Wilsnack SC, Greenfield TK, Bloomfield K. The GENAHTO Project (Gender and Alcohol's Harm to Others): design and methods for a multinational study of alcohol's harm to persons other than the drinker. *Int J Alcohol Drug Res.* 2018;7:37-47
25. Leifman H. A comparative analysis of drinking patterns in six EU countries in the year 2000. *Contemp Drug Probl.* 2002;29(3):501-48.
26. Gaye A, Klugman J, Kovacevic M, Twigg S, Zambrano E. Measuring key disparities in human development: the Gender Inequality Index. Human Development Research Paper 2010/46, United Nations Development Program. 2010. .
27. Lui W, Mumford EA, Petras H. Maternal patterns of postpartum alcohol consumption by age: a longitudinal analysis of adult urban mothers. *Prev Sci.* 2015;16:353-63.
28. Kendler K, Lonn SL, Salvatore JE, Sundquist J, Sundquist K. The impact of parenthood on risk of registration for alcohol use disorder in married individuals: a Swedish population-based analysis. *Psychol Med.* 2018:1-8.
29. Wilsnack RW, Kristjanson AF, Wilsnack SC, Bloomfield K, Grittner U, Crosby RD. The harms that drinkers cause: regional variations within countries. *Int J Alcohol Drug Res.* 2018;7(2):30-6.

Table 1. Country of survey, whether survey was part of GENACIS, GENAHTO or ECAS collaboration, geographic area of survey (if not national), year of survey, response rate, sample size, % female, Gender Inequality Index (GII) score for 2017 (higher score = greater inequality), GII score reverse coded and multiplied by 10, and mean age (standard deviation)

Country	Year of survey	Response rate/ completion rate ¹	Sample Size (N)	% Female	2017 GII raw score	Reversed scored GII X 10	Mean age (SD)	
							Men	Women
All countries			63,911	55.54%			40.21 (13.25)	40.49 (13.02)
Argentina (GENACIS, Buenos Aires City & Province)	2003	Unknown	999	59.86%	0.358	6.42	38.07 (13.50)	41.02 (13.47)
Australia (GENAHTO)	2008	35%	2,234	59.36%	0.113	8.91	43.21 (13.16)	43.09 (12.58)
Brazil (GENACIS, Metro São Paulo)	2007	76%	1,809	57.82%	0.407	5.93	37.71 (13.33)	38.72 (13.51)
Canada (GENACIS)	2004-5	53%	12,250	56.37%	0.092	9.08	41.58 (12.66)	42.41 (12.35)
Chile (GENAHTO, 7 cities and surrounding areas)	2012-13	72%	1,344	53.72%	0.319	6.81	33.96 (12.00)	35.34 (12.89)
Costa Rica (GENACIS, Greater Metropolitan area)	2003	56%	1,156	66.96%	0.300	7.00	35.59 (12.80)	36.56 (12.30)
Czech Republic (GENACIS)	2002	73%	2,507	50.58%	0.124	8.76	40.25 (13.76)	39.96 (13.66)
Denmark (GENAHTO)	2011	61%	4,037	53.46%	0.040	9.60	42.32 (13.79)	43.57 (13.40)
France (ECAS)	2000	54%	997	52.46%	0.083	9.17	38.11 (12.67)	40.39 (13.54)
India (GENACIS, 5 regions in Karnataka state)	2003	NA (quota sampling)	3,244	52.68%	0.524	4.76	32.28 (11.44)	31.91 (11.25)
Ireland 1 (GENAHTO)	2010	NA (quota sampling)	797	51.19%	0.109	8.91	39.71 (13.68)	39.80 (13.09)
Ireland 2 (GENAHTO)	2015	37%	1,648	51.09%	0.109	8.91	43.15 (13.84)	44.22 (13.13)
Italy (ECAS)	2000	47%	1,000	51.40%	0.087	9.13	40.71 (14.27)	41.08 (13.11)
Japan (GENACIS)	2001	75%	1,733	50.14%	0.103	8.97	43.59 (12.72)	44.12 (12.73)
Laos PDR (GENAHTO)	2013	99%	1,212	58.42%	0.461	5.39	41.96 (12.86)	38.68 (11.46)
New Zealand (GENACIS)	2007	50%	1,579	57.06%	0.136	8.64	44.41 (12.54)	43.77 (12.28)
Nicaragua (GENACIS, 5 midsized cities)	2005	Unknown	1,963	70.20%	0.456	5.44	34.76 (12.63)	34.09 (11.99)

Country	Year of survey	Response rate/ completion rate ¹	Sample Size (N)	% Female	2017 GII raw score	Reversed scored GII X 10	Mean age (SD)	
							Men	Women
Norway (GENACIS)	1999	Unknown	1752	52.40%	0.048	9.52	39.29 (12.41)	39.08 (12.45)
Peru (GENACIS, cities of Lima and Ayacucho)	2005	Unknown	1,389	65.73%	0.368	6.32	35.47 (13.12)	36.12 (12.20)
Spain (GENACIS, provinces of Galicia, Valencia, Cantabria)	2002	69%	1,470	49.86%	0.080	9.20	39.08 (13.40)	39.50 (13.41)
Sri Lanka 1 (GENACIS, 16 districts)	2002	Unknown	2,286	51.71%	0.354	6.46	39.37 (13.39)	38.42 (12.49)
Sri Lanka 2 (GENAHTO)	2013-14	93%	943	50.05%	0.354	6.46	41.17 (12.41)	39.05 (11.93)
Sweden (GENACIS)	2002	68%	4,476	50.67%	0.044	9.56	41.01 (13.51)	41.46 (13.43)
Thailand (GENAHTO)	2012-13	94%	1,603	59.01%	0.393	6.07	44.30 (12.18)	45.32 (12.04)
Uganda (GENACIS, districts of Kabale, Tororo, Lira and Wakiso)	2003	84%	1,373	51.49%	0.523	4.77	33.01 (10.55)	31.93 (10.49)
United Kingdom 1 (GENACIS, England and Wales)	2000	NA (quota sampling)	1,675	51.52%	.116	8.84	39.76 (12.85)	41.39 (12.98)
United Kingdom 2 (ECAS)	2000	41%	984	59.04%	0.116	8.84	40.20 (11.93)	41.18 (12.21)
United Kingdom 3 (GENACIS, Isle of Man)	2005	53%	760	53.29%	0.116	8.84	44.99 (12.77)	45.06 (12.54)
United States 1 (GENACIS, females only)	2001	80%	1,005	100.0%	0.189	8.11	--	37.63 (11.57)
United States 2 (GENAHTO)	2014-15	60%	1,939	55.75%	0.189	8.11	44.08 (14.10)	46.02 (13.34)
Uruguay (GENACIS, several cities, primarily Montevideo (53.6% of interviews) and Canelones (11.6% of interviews))	2004	50%	1,000	62.40%	0.270	7.30	39.39 (14.07)	41.39 (14.11)
Vietnam (GENAHTO, 1 province in each of 6 regions)	2012-13	99%	1,447	49.97%	0.304	6.96	41.30 (11.26)	42.05 (10.50)

¹Some countries had little experience in conducting surveys and did not collect sufficient data to estimate response rates; however, countries where surveys were unusual tended to have generally high participation. Also, countries used different methods of reporting non-response with some reporting response rates (including no one home) and others reporting completion rates.

Table 2. Country of survey, number and percent of participants in each survey who were drinkers/abstainers in past 12 months, and mean volume (and standard deviation) by survey, gender and whether the survey participant lived with children

Country	<u>Men</u>		<u>Women</u>		<u>Men</u>	<u>Women</u>
	Drinker	Abstainer	Drinker	Abstainer	Average # drinks/year (sd)	Average # drinks/year (sd)
All countries						
- lives with children	9,444 (80.41%)	2,301 (19.59%)	10,609 (59.65%)	7,176 (40.35%)	483.21 (823.36)	167.26 (341.54)
- does not live with children	13,340 (80.45%)	3,241 (19.55%)	12,500 (70.22%)	5,300 (29.78%)	515.08 (793.41)	213.64 (370.70)
Argentina (GENACIS)						
- lives with children	128 (88.89%)	16 (11.11%)	230 (73.95%)	81 (26.05%)	510.30 (607.75)	71.108 (150.87)
- does not live with children	239 (93.00%)	18 (7.00%)	211 (73.52%)	76 (26.48%)	374.82 (552.55)	132.24 (181.50)
Australia (GENAHTO)						
- lives with children	390 (90.91%)	39 (9.09%)	671 (86.80%)	102 (13.20%)	529.03 (777.22)	190.92 (302.15)
- does not live with children	427 (89.14%)	52 (10.86%)	466 (84.27%)	87 (15.73%)	530.19 (850.48)	225.05 (301.94)
Brazil (GENACIS)						
- lives with children	274 (65.87%)	142 (34.13%)	205 (32.64%)	423 (67.36%)	443.03 (695.15)	108.39 (240.11)
- does not live with children	203 (58.50%)	144 (41.50%)	140 (33.49%)	278 (66.51%)	453.75 (669.82)	147.69 (457.66)
Canada (GENACIS)						
- lives with children	1491 (84.38%)	276 (15.62%)	2070 (76.89%)	622 (23.11%)	274.12 (402.34)	131.44 (218.82)
- does not live with children	2957 (82.64%)	621 (17.36%)	3240 (76.90%)	973 (23.10%)	388.97 (624.63)	161.12 (259.57)
Chile (GENAHTO)						
- lives with children	265 (80.79%)	63 (18.21%)	319 (68.16%)	149 (31.84%)	323.52 (537.37)	121.91 (302.89)
- does not live with children	239 (81.29%)	55 (18.71%)	178 (70.08%)	76 (29.92%)	346.63 (659.30)	217.55 (440.43)
Costa Rica (GENACIS)						
- lives with children	106 (70.20%)	45 (29.80%)	206 (44.40%)	258 (55.60%)	256.80 (415.65)	63.28 (106.34)
- does not live with children	161 (69.70%)	70 (30.30%)	147 (47.42%)	163 (52.58%)	336.55 (510.12)	113.53 (208.32)
Czech Republic (GENACIS)						
- lives with children	359 (93.25%)	26 (6.75%)	377 (82.31%)	81 (17.69%)	855.06 (861.15)	235.47 (421.11)
- does not live with children	760 (88.99%)	94 (11.01%)	635 (78.40%)	175 (21.60%)	898.85 (1061.53)	296.88 (481.83)
Denmark (GENAHTO)						
- lives with children	669 (95.98%)	28 (4.02%)	774 (91.49%)	72 (8.51%)	334.94 (365.19)	157.17 (214.20)

Country	<u>Men</u>		<u>Women</u>		<u>Men</u>	<u>Women</u>
	Drinker	Abstainer	Drinker	Abstainer	Average # drinks/year (sd)	Average # drinks/year (sd)
- does not live with children France (ECAS)	1130 (95.60%)	52 (4.40%)	1225 (93.37%)	87 (6.63%)	486.52 (571.39)	266.29 (323.37)
- lives with children	151 (86.78%)	23 (13.22%)	158 (69.30%)	70 (30.70%)	611.70 (1099.46)	179.18 (299.33)
- does not live with children India (GENACIS)	263 (87.67%)	37 (12.33%)	222 (75.25%)	73 (24.75%)	594.92 (704.06)	230.59 (298.66)
- lives with children	295 (44.83%)	363 (55.17%)	20 (2.32%)	842 (97.68%)	1185.81 (1401.15)	495.00 (748.76)
- does not live with children Ireland 1 (GENAHTO)	191 (28.85%)	471 (71.15%)	17 (4.70%)	345 (95.30%)	603.81 (911.40)	334.45 (652.15)
- lives with children	146 (86.90%)	22 (13.10%)	185 (83.71%)	36 (16.29%)	929.76 (1174.38)	421.43 (544.40)
- does not live with children Ireland 2 (GENAHTO)	183 (82.81%)	38 (17.19%)	144 (77.01%)	43 (22.99%)	1058.70 (1199.98)	450.84 (535.21)
- lives with children	225 (83.03%)	46 (16.97%)	274 (87.3%)	40 (12.7%)	446.40 (510.12)	194.1 (265.1)
- does not live with children Italy (ECAS)	443 (82.80%)	92 (17.20%)	432 (81.8%)	96 (18.2%)	709.75 (1109.28)	225.9 (305.7)
- lives with children	132 (91.03%)	13 (8.97%)	147 (75.00%)	49 (25.00%)	493.02 (535.08)	340.39 (587.68)
- does not live with children Japan (GENACIS)	302 (88.56%)	39 (11.44%)	258 (81.13%)	60 (18.87%)	574.10 (598.84)	294.57 (360.92)
- lives with children	402 (95.04%)	21 (4.96%)	337 (82.80%)	70 (17.20%)	606.45 (776.03)	158.52 (290.03)
- does not live with children Laos PDR (GENAHTO)	401 (90.93%)	40 (9.07%)	355 (76.84%)	107 (23.16%)	582.90 (777.05)	196.42 (448.07)
- lives with children	313 (86.9%)	47 (13.1%)	347 (68.31%)	161 (31.69%)	849.5 (1472.1)	296.22 (574.04)
- does not live with children New Zealand (GENACIS)	126 (87.5%)	18 (12.5%)	119 (59.50%)	81 (40.50%)	763.8 (1364.6)	329.38 (727.37)
- lives with children	197 (92.06%)	17 (7.94%)	320 (91.95%)	28 (8.05%)	348.97 (455.01)	194.08 (270.00)
- does not live with children Nicaragua (GENACIS)	416 (89.66%)	48 (10.34%)	506 (91.50%)	47 (8.50%)	439.78 (649.35)	256.27 (305.95)
- lives with children	115 (40.78%)	167 (59.22%)	92 (9.40%)	887 (90.60%)	504.47 (1230.43)	418.79 (1235.44)
- does not live with children Norway (GENACIS)	144 (47.52)	159 (52.48%)	56 (14.04%)	343 (85.96%)	766.12 (1317.70)	233.57 (750.31)

21 Graham

Country	<u>Men</u>		<u>Women</u>		<u>Men</u>	<u>Women</u>
	Drinker	Abstainer	Drinker	Abstainer	Average # drinks/year (sd)	Average # drinks/year (sd)
- lives with children	362 (96.02%)	15 (3.98%)	473 (94.60%)	27 (5.40%)	253.75 (266.39)	131.31 (163.46)
- does not live with children	423 (92.56%)	34 (7.44%)	387 (92.58%)	31 (7.42%)	505.16 (803.01)	170.49 (259.22)
Peru (GENACIS)						
- lives with children	200 (84.03%)	38 (15.97%)	395 (60.12%)	262 (39.88%)	118.23 (190.84)	44.75 (91.80)
- does not live with children	194 (81.51%)	44 (18.49%)	166 (64.84%)	90 (35.16%)	190.07 (450.51)	42.65 (84.79)
Spain (GENACIS)						
- lives with children	143 (73.33%)	52 (26.67%)	117 (48.75%)	123 (51.25%)	703.44 (860.67)	205.89 (282.42)
- does not live with children	398 (73.43%)	144 (26.57%)	266 (53.96%)	227 (46.04%)	615.01 (725.04)	257.36 (349.21)
Sri Lanka 1 (GENACIS)						
- lives with children	176 (61.32%)	111 (38.68%)	20 (5.25%)	361 (94.75%)	796.51 (1327.67)	34.85 (99.83)
- does not live with children	100 (54.35%)	84 (45.65%)	8 (8.79%)	83 (91.21%)	531.98 (1330.63)	47.13 (108.58)
Sri Lanka 2 (GENAHTO)						
- lives with children	360 (67.92%)	170(32.08%)	20 (2.79%)	696 (97.21%)	407.12 (574.33)	166.00 (278.80)
- does not live with children	376 (65.51%)	198 (34.49%)	25 (5.36%)	441 (94.64%)	485.39 (704.53)	123.64 (360.40)
Sweden (GENACIS)						
- lives with children	720 (93.14%)	53 (6.86%)	723 (83.39%)	144 (16.61%)	219.59 (279.59)	104.33 (129.98)
- does not live with children	1304 (90.87%)	131 (9.13%)	1208 (86.22%)	193 (13.78%)	275.69 (351.35)	132.55 (169.07)
Thailand (GENAHTO)						
- lives with children	231 (65.81%)	120 (34.19%)	154 (27.16%)	413 (72.84%)	730.37 (1370.31)	129.64 (382.69)
- does not live with children	213 (69.61%)	93 (30.39%)	128 (33.77%)	251 (66.23%)	654.63 (1236.63)	179.65 (422.36)
Uganda (GENACIS)						
- lives with children	234 (62.57%)	140 (37.43%)	203 (41.94%)	281 (58.06%)	1273.04 (1525.60)	398.60 (925.56)
- does not live with children	124 (42.47%)	168 (57.53%)	74 (33.18%)	149 (66.82%)	1015.72 (1318.32)	636.41 (1629.43)
United Kingdom 1 (GENACIS)						
- lives with children	294 (93.33%)	21 (6.67%)	383 (85.87%)	63 (14.13%)	466.35 (672.91)	216.66 (402.55)
- does not live with children	449 (90.34%)	48 (9.66%)	344 (82.49%)	73 (17.51%)	617.39 (751.61)	287.98 (392.21)
United Kingdom 2 (ECAS)						
- lives with children	134 (88.16%)	18 (11.84%)	229 (87.74%)	32 (12.26%)	892.87 (1300.51)	332.24 (444.35)

Country	<u>Men</u>		<u>Women</u>		<u>Men</u>	<u>Women</u>
	Drinker	Abstainer	Drinker	Abstainer	Average # drinks/year (sd)	Average # drinks/year (sd)
- does not live with children United Kingdom 3 (GENACIS, Isle of Man)	227 (90.44%)	24 (9.56%)	269 (84.06%)	51 (15.94%)	1100.40 (1351.48)	456.93 (681.58)
- lives with children	137 (96.48%)	5 (3.52%)	142 (91.03%)	14 (8.97%)	810.04 (1163.25)	331.35 (435.60)
- does not live with children United States 1 (GENACIS, females only)	201 (94.37%)	12 (5.63%)	215 (86.35%)	34 (13.65%)	860.56 (1105.15)	321.69 (401.03)
- lives with children	--	--	380 (78.19%)	106 (21.81%)	--	133.38 (239.91)
- does not live with children United States 2 (GENAHTO)	--	--	414 (79.77%)	105 (20.23%)	--	259.72 (452.03)
- lives with children	185 (68.27%)	86 (31.73%)	275 (65.48%)	145 (34.52%)	163.77 (247.68)	106.56 (227.57)
- does not live with children Uruguay (GENACIS)	431 (73.42%)	156 (26.58%)	422 (63.84%)	239 (36.16%)	390.45 (562.37)	171.38 (352.08)
- lives with children	106 (79.10%)	28 (20.90%)	174 (59.18%)	120 (40.82%)	410.66 (1023.77)	88.22 (151.12)
- does not live with children Vietnam (GENAHTO)	199 (82.23%)	43 (17.77%)	202 (61.21%)	128 (38.79%)	459.13 (763.74)	156.40 (324.33)
- lives with children	504 (84.85%)	90 (15.15%)	189 (31.14%)	418 (68.86%)	349.76 (642.96)	109.19 (239.58)
- does not live with children	116 (89.23%)	14 (10.77%)	21 (18.10%)	95 (81.90%)	344.13 (574.05)	75.79 (161.11)

Table 3. Odds ratio based on HLM regression of being a drinker vs. abstainer (Model 1)/b coefficients based on HLM regression of annual number of drinks consumed by drinkers (Model 2) on living with children (level 1), country level gender equality (reverse coded GII X 10) (level 2) and cross-level interaction of gender equality with living with children (controlling for age)

Model 1.	<u>Men (N = 28,326)</u>	<u>Women (N = 35,585)</u>
Drinking status (drinker vs. abstainer)	Odds ratio (p value)	Odds ratio (p value)
<i>Model 1a</i>		
Lives with children (level 1)	1.18 (p = .003)	0.90 (p = .036)
Gender equality (level 2)	1.60 (p < .001)	2.11 (p < .001)
<i>Model 1b</i>		
Lives with children (level 1)	1.18 (p .002)	0.90 (p = .039)
Gender equality (level 2)	1.59 (p < .001)	2.18 (p < .001)
Gender equality X Lives with children (cross level interaction)	.98 (p = .469)	1.02 (p = .649)
Model 2.		
# drinks consumed annually by drinkers	<u>Men (N = 22,415)</u>	<u>Women (N = 22,608)</u>
	b coefficient (p value)	b coefficient (p value)
<i>Model 2a</i>		
Lives with children (level 1)	-46.61 (p = .079)	-54.47 (p < .001)
Gender equality (level 2)	-6.93 (p = .816)	-5.14 (p = .735)
<i>Model 2b</i>		
Lives with children (level 1)	-38.65 (p = .117)	-53.64 (p = .002)
Gender equality (level 2)	-19.44 (p = .524)	-3.77 (p = .837)
Gender equality X Lives with children (cross level interaction)	-32.76 (p = .036)	-2.39 (p = .868)

Table 4. Unstandardized b coefficient for annual volume of consumption based on regression of annual volume of consumption on living with children for male participants in higher versus lower gender inequality countries using hierarchical linear modelling (controlling for age)

Volume (# drinks consumed annually)	b coefficient (p value)
<i>Model 1. Countries with lower gender equality</i>	
Lives with children	(N = 5,279) 34.56 (p = .424)
<i>Model 2. Countries with higher gender equality</i>	
Lives with children	(N = 16,686) -103.83 (p < .001)