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Housewife or working mum – each to her own? The relevance of societal factors in the association between social roles and alcohol use among mothers in 16 industrialised countries

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Abstract

Aims—To investigate whether differences in gender-income equity at country level explain national differences in the links between alcohol use, and the combination of motherhood and paid labour.

Design—Cross-sectional data in 16 established market economies participating in the GenACIS study

Setting—Population surveys

Participants—12,454 mothers (aged 24 to 49).

Measurements—Alcohol use was assessed as the quantity per drinking day. Paid labour, having a partner, gender-income ratio at country level, and the interaction between individual and country characteristics were regressed on alcohol consumed per drinking day using multilevel modelling.

Findings—Mothers with a partner who were in paid labour reported consuming more alcohol on drinking days than partnered housewives. In countries with high gender-income equity, mothers with a partner who were in paid labour drank less alcohol per occasion, while alcohol use was higher among working partnered mothers living in countries with lower income equity.

Conclusion—In countries which facilitate working mothers, daily alcohol use decreases as female social roles increase; in contrast, in countries where there are fewer incentives for mothers to remain in work, the protective effect of being a working mother (with partner) on alcohol use is weaker. These data suggest that a country's investment in measures to improve the compatibility of motherhood and paid labour may reduce women's alcohol use.

Keywords

Mothers; paid labour; alcohol use; gender income ratio; international comparisons

Introduction

Social roles, such as being a partner, a parent, or in paid work, have been found to be associated with differences in alcohol use [1–3]. Since social roles define the position of an

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individual within a given social system, their impact on alcohol use is likely to vary across different societies. So far, only a handful of studies have focused on the consistency of this association in different countries [1, 4, 5]. This study concentrates on differences in women's status which may affect the link between the combination of motherhood, paid labour and alcohol use.

The classic role theory [4] posits that the more social roles a person holds, the more his or her life is structured by activities that others expect them to engage in, and therefore the more care a person will take to ensure that drinking does not interfere with their role obligations. But it also suggests that, the fewer roles an individual holds, the more likely a person is to use alcohol to cope with the lack of meaningful everyday activities [2, 6, 7]. These considerations lead to the assumption that the more roles a person holds, the less likely he or she is to engage in heavy drinking [2, 4, 8].

A recent study investigated the association between the number of social roles and alcohol use in 10 countries, and found that across almost all countries, participants who held all three roles were the least likely to drink heavily, thus supporting the assumptions of classic role theory [4]. Nevertheless, there was considerable variation among countries with respect to the association between paid labour and women's alcohol use. For example, German and Swiss women who were partners, mothers and in paid labour reported higher levels of heavy drinking. Characteristics at the societal level seem, especially for women, to moderate the relationship between social roles and alcohol use.

Despite the substantial increase in female labour force participation, women still spend more time running the (shared) household and fulfilling childcare obligations than men [9]. This mismatch between the old and new role of women in society could be a possible explanation for the increase in women's alcohol use over the past decades [10]. In a study on the relevance of societal factors on alcohol use, Rahav et al. [11] concluded "that the societal differences between men's and women's drinking are largely a function of the differentiation between men's and women's positions in society (p. i54)". Yet, countries may differ in the extent to which they provide the societal circumstances to enable equal sharing of household and childcare responsibilities. The differences between men's and women's earnings can be seen as a major variable for the description of women's status in society [11]. A low gender-income ratio may reflect a more traditional view of social roles: men as breadwinners and women as housewives, who stay at home and care for the family. Consequently, mothers in countries with less gender-income equity may experience paid labour as an additional burden, and therefore report higher drinking levels (e.g. to compensate for the additional stress). By contrast, mothers in countries with smaller gender differences in income equity, the responsibilities of being in paid labour in addition to being a parent are more socially valued and also more likelyto result in lower alcohol use.

To date, cross-cultural comparative studies are scant. Notable exceptions have shown that countries differ in how social roles affect women's drinking habits [1, 4, 5], in particular those of single and partnered mothers [1]. As all previous studies have failed to include country-level factors, the explanations for these differences have remained elusive. This study therefore examines possible effects of gender-income equity on the relationship between paid labour and alcohol use among mothers. Among other factors known to be related to women's drinking is their level of education. In most countries, women with a higher level of education tend to drink more alcohol [12]. As level of education might be associated with paid labour, educational level was considered as a possible confounder at individual level.

Mothers may seek paid employment purely out of economic necessity. The extent to which mothers work out of material necessity may also explain cross-country differences in the association between the social roles held by mothers and their alcohol use. It appears that this applies in particular to those mothers who feel forced to accept work which gives little or no satisfaction, and who thus use alcohol to alleviate tensions that this situation may engender. This may explain country differences in the association between social roles and women's drinking. To address this issue the country's Gross National Income (GNI) was included as a confounder at country level.

More precisely, this study focuses on three specific adult roles in 16 established market economies: taking care of children (parenting), taking care of oneself by earning an income (paid labour), and forming a permanent and stable relationship with a partner (partnership). This paper focuses on the relevance of societal factors on cross-country differences in alcohol use among mothers. The first stage therefore involved testing the relevance of paid labour on the quantity of alcohol consumed in a drinking day. The second stage involved testing the relevance of the country's gender-income equity on the country's alcohol use and the final stage involved testing the associations between alcohol use and whether or not women were in paid labour. GNI was included as a possible confounder at country level.

Method

Sample

Data came from the project *Gen*der, *A*lcohol and *C*ulture: An *I*nternational *S*tudy [GenACIS: see also: 13, 14, www.genacis.org], which currently comprises 45 surveys from 37 countries included in a centralised data bank management system, which encoded variables according to fixed rules [15]. The study included women from 16 established market economies (n=51,559; Table 1), which provided sufficient information on social roles and alcohol use. The focus on established market economies ensured a minimum level of comparability regarding the measurement and the meaning of social roles across societies. Apart from the surveys carried out in Spain and the Netherlands, all surveys were nationally representative.

The analyses were conducted among mothers who had consumed alcohol during the past 12 months (n=15,405). Abstainers were excluded because previous studies which focused on abstention indicate that the factors which distinguish abstainers from drinkers are quite different from those which differentiate between drinkers according to their level of consumption [e.g. 16].

Our analysis was further limited to those aged 25 to 49 (n=12,690); an age range in which it can be assumed that either the child or at least one of the children living in the household was a minor, given that many of the surveys included in the study did not assess the children's ages. The presence of a child or children in the household implied that the parent still had child-rearing responsibilities. Since it would be fair to assume that people in this age range are no longer in education, paid labour reflects stable employment rather than only temporary employment (e.g. students working to finance their studies).

Individual level variables

Dependent variable: All surveys provided comparable data on the usual amount an individual consumed on a drinking day, and this measure was of higher informative value compared with heavy episodic drinking [17] among women. As drink sizes and alcohol contents varied between countries, the measure used was transformed into consumed grams of pure ethanol [detailed information can be found in 17]. The variable was log-transformed to approximate a normal distribution and to reduce the impact of outliers [18]. The mean quantity of pure ethanol (in g) per drinking day per country can be found in Table 2.

Independent variables: The "partnership" role was dichotomised into married or cohabiting (code=1) versus other (code=0).

The "paid labour" role summarises the employment situation of the respondent. Paid workers, regardless of whether they were employed part-time or full-time, as well as the self-employed were coded as 1; otherwise as 0.

For analyses, the two dichotomous variables "paid labour" and "partnership" were combined to create the following four groups: mothers without a partner and not in paid labour (non-working single mothers); mothers without a partner but in paid labour (working single mothers); mothers with a partner and in paid labour (partnered working mothers); and mothers with a partner but not in paid labour (housewives; reference group).

Societal variables—We used internationally standardised indicators derived from international databases (e.g. Human Development Reports). As the greatest cross-country variations were found in the association between the paid labour-motherhood role combination and alcohol use [4], particular focus was on societal indicators of gender equality, as these also reflect the possibilities available to women for remaining in work after the birth of a child. Unfortunately, many of these indicators reflect only very specific facets (e.g. female MPs and childcare expenditure) of the rather complex issues behind the possible conflict between the paid work and childrearing roles. Moreover, due to the limited number of countries (N=16) on the societal level, this study was not able to include a large number of societal indicators on the social situation of mothers in a given society. Consequently, an indicator for the society's acceptance and support of combining motherhood and paid labour on a more general level was sought. In addition to national differences in childcare provision, gender-income equity may be a factor behind maternal employment. A low gender-income ratio may reflect a more traditional view of social roles: men as breadwinners and women as housewives, who stay at home and care for the family. This measure was taken from the Human Development Report 2006 [19].

Age and educational level were considered as two possible individual-level confounders. Educational level accounts for the effects of socio-economic status on alcohol use, and has the advantage that it varies less over time than income or occupation [20]. To derive comparable educational groups across countries, we applied the International Standard Classification of Education (ISCED-97) [21].

The country level analyses (Models 2 and 3) were adjusted for countries' GNI per capita in US Dollars to consider the effect that countries may differ in the extent to which mothers take up paid work out of material necessity. The indicator was based on data closest to the survey year from the World Bank.

Statistical analysis—Individuals with missing values on educational level, age, paid labour, partnership, or alcohol use (1.9%; n=236) were excluded from the analysis. The final sample comprised 12,454 alcohol-using mothers. HLM 6 [22] was used to estimate three multilevel models with increasing complexity [23]. At individual level, all models were adjusted for age and level of education.

Model 1 estimated the association between paid labour, partnership, the combination of the two, and the quantity of alcohol consumed per drinking day, whereby all coefficients could vary across countries (random coefficient model). Model 2 included the gender-income ratio as an independent variable at country level (level-two, intercept-only model) to evaluate the impact of this factor on the reference group's drinking (housewives). Model 3 included the interaction between the societal factor and the partnership-paid work role combination

(cross-level interaction model). This model tests whether cross-country variations in the association between the paid labour-partner role combination and alcohol use can be explained by the country's gender-income ratio.

Results

Descriptive results showed that among mothers aged 25 to 49, the percentage reporting alcohol use in the past 12 months varied from 49.0% in Spain to 100% in the UK (Table 2). Considerable variations were also found for the country's mean quantity of pure ethanol in grams per drinking day. In France, women in this age group drank approximately 11g on a drinking day, while women in Norway drank nearly five times more (52g). The proportion of those in paid work varied between 45.6% in Germany and 82.2% in Sweden. Comparable variations were found for the percentage of cohabiting mothers. In the US, only 49.7% of the mothers reported that they lived with a partner, compared to 96.2% in Switzerland.

The results of Model 1 reveal significant differences between partnered mothers who were not in paid labour (henceforth called 'housewives') and partnered working mothers; the latter reported higher amounts per drinking day (see Table 3 and Graph 1). Compared to housewives, single mothers also reported significantly higher alcohol consumption on a drinking day regardless of their employment status.

Model 2 shows that GNI as well as the gender-income ratio in a country had no effect per se on alcohol use among housewives (Table 3). However, the interaction between the gender-income ratio and being a partnered working mother had a significant impact on the usual quantity consumed (Model 3). No moderation effect of the gender-income ratio was found among single mothers.

The detrimental effect of paid work on the usual quantity consumed by partnered mothers per drinking day remained, but this effect was moderated by the country's gender-income ratio. In countries where pay equity was higher, alcohol intake per drinking day among partnered working mothers was lower than among housewives. In countries where gender-income equity was lower, paid labour was associated with higher alcohol intake per drinking day among partnered working mothers compared to housewives.

To illustrate the country differences in the group of partnered mothers, we plotted the strength of the relationship between paid labour and alcohol use on the country's gender-income ratio. The results in Graph 2 reveal that, in countries with higher gender income equity (Nordic countries), mothers living with a partner who were also in employment drank smaller amounts per drinking day than housewives. In countries with lower income equity, like Hungary or the Czech Republic, a positive association was found between quantity per drinking day and the role combination of being mother, partner, and in paid labour. In fact, based on the relationships presented in Graph 2, differences in the gender-income ratio explained 51% of the cross-country variance in the impact that role combinations had on alcohol use.

Discussion

The aim of this study was to investigate whether country differences in the association between social roles and maternal alcohol use can be explained by societal characteristics. In all countries, the results confirmed those of an earlier study [4]: among partnered mothers, being in employment led to larger amounts of alcohol consumed on a drinking day than not being employed. The significant cross-level interaction of partnered working mothers and gender-income ratio provided evidence that the classic role theory is less likely to explain women's drinking for countries with lower gender-income equity.

This study therefore provides evidence to support the findings of a previous study which reported that the protective effects of combining motherhood with paid labour and partnership were rather low in certain countries [4]. The results of this study demonstrate that combining motherhood, paid labour and partnership was only protective in countries with high gender-income equity (e.g. the Nordic countries), whereas in countries with less gender-income equity, this role combination did not demonstrate the same protective effect.

Based on reported high correlations between different measures on women's status by a previous study [11] the authors assume that the gender-income ratio used in this study is most likely associated with other societal aspects which make it easier or more difficult for women to combine motherhood with paid work. One factor probably related to the gender-income ratio is the social norms of a country regarding a mother's role in society. These culturally embedded norms may either impede or encourage women's employment. It can be assumed that countries with more gender-income equity are less traditional in their social expectations about maternal behaviour. In contrast, in countries with lower gender-income equity the traditional roles – fathers being the main breadwinner and mothers taking care of the family – are likely to dominate. In those countries, women in the atypical role of combining motherhood and paid labour may receive less social support. In addition, in countries where the more traditional maternal roles dominate – staying at home to take care of the children and the household – specific policies such as access to childcare, maternity leave, reduced working hours due to parenthood are also likely to discourage the motherhood-paid labour role combination. This is likely to render the lives of working mothers more complicated – over and above the lower level of social support – and may lead to individual stress due to the role overload which may ultimately lead to the coping use of alcohol, consequences suggested by the multiple burden theory [24–26].

In summary, this study indicates that in Nordic countries with historically high levels of emancipation and gender equality, combining motherhood and paid labour resulted in lower quantities per drinking day whereas in central and eastern European countries the less conventional combination of motherhood with paid work did not provide such a protective effect. In this respect the higher alcohol consumption of single mothers compared to partnered mothers may be understood as a way of coping with the stresses and strains of single motherhood and a possible resulting overload regardless of the gender equity in the country.

This study has several strengths, such as the inclusion of more than 12,000 alcohol-consuming mothers in a multinational sample. The focus was on established market societies to ensure comparability regarding the definition and meaning of the social roles, as they were applied in the study. However, a combination of societal characteristics was most likely responsible for the variation between countries in how social roles relate to maternal drinking. Our study is a first step towards presenting such an association. Further studies are necessary to document societal factors that explain country differences in the association between social roles and drinking. The economic prosperity of countries measured by GNI had no effect on the differences in maternal alcohol use across the 16 countries considered in this study.

We must also acknowledge the study's limitations. To ensure a minimum of comparability, the analysis was restricted to rather crude measures of social roles, which in turn only permits a general interpretation of the results. Future studies should include more specific factors like the number of children, their ages, and job-related variables, such as being in part-time or full-time employment, and additionally consider other societal indicators which may better reflect the societal support for women to combine motherhood and paid labour roles, such as childcare provision. In addition, the inclusion of education level at best only

partially accounted for differences in affordability. Similarly, social availability is likely to be only partially accounted for by including the different roles in the analysis. This may have led to a less precise estimate of the country coefficients for the influence of paid labour on mothers' drinking. However, assuming that this imprecision is approximately equal for all countries, no major influence on the main finding is expected: mothers in paid work, who are more likely to be able to afford to drink, and may have a larger and more diverse social network than mothers without paid work, still drink less if the gender-income ratio is high. Despite the limited precision in which country differences between working and non-working mothers could be estimated, the associations between social roles and alcohol use found across the 16 countries considered in the study were rather consistent. This, in addition to the high effect size of the country-level effect (Graph 2), increases the likelihood that the associations found in this study are robust rather than spurious.

Due to the cross-sectional design of the study, we were unable to establish any causal association between social roles and alcohol use. Thus, we cannot say with certainty whether the combination of roles an individual holds results in reduced alcohol use or that an individual's alcohol use limits her access to certain social roles, such as finding a partner or work. Another limitation concerns the drinker-only focus; conclusions can only be drawn for individuals who have consumed alcohol in the past 12 months. This selection may be problematic in countries with high abstention rates. Consequently, certain sub-populations may be over- or under-represented in the abstainer group. Another limitation relates to country differences in the alcohol measures and survey years. Despite a generalized databank management, no identical measures for alcohol could be obtained. However, the high effect size and the consistency across 16 countries increase the likelihood that the associations found in this study are valid.

To conclude, this study provides evidence that in countries which facilitate the combination of motherhood and paid labour, the amount of alcohol consumed on a drinking day decreases the more roles a woman holds (being a mother, partner and employee). By contrast, in countries where there are fewer incentives for mothers to remain in work, the effect of the number of social roles is weaker, indicating that a country's investment in measures to improve the compatibility of motherhood and paid labour can reduce women's alcohol use.
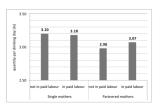
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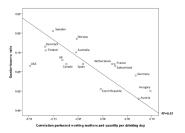
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Graph 1.
Interaction between partnership and paid labour on quantity consumed per drinking day
(random coefficient model; Model 1in Table 3)

Graph 2.
Relevance of the gender-income ratio on the association between quantity per day and paid labour among partnered mothers

Table 1

Survey characteristics and sample size among alcohol-consuming mothers aged between 25 and 49.

	Survey year	Survey mode	n
Australia	2007	CATI	424
Austria	1993	face-to-face	876
Canada	2004	CATI	1,845
Czech Republic	2002	face-to-face	352
Denmark	2003	telephone	270
Finland	2000	face-to-face [1]	271
France	1999	telephone	2,059
Germany	2000	postal	1,860
Hungary	2001	face-to-face[1]	375
Netherlands	1999	postal	538
Norway	1999	face-to-face[1]	397
Spain	2003	face-to-face[1]	100
Sweden	2002	telephone	636
Switzerland	2002	telephone	1,573
UK	2000	face-to-face (CAPI)	304
USA	1995/1996	face-to-face	592
			12,454

Note:

[1] partly self-administered

CAPI: computer assisted personal interviewing

CATI: computer assisted telephone interviewing

Table 2

Prevalence of alcohol use in the past 12 months (among mothers aged 25–49), mean quantity of pure ethanol on a drinking day, and percentage of partnered and employed drinking mothers by country

	Australia	Austria	Canada	Czech Republic	Denmark	Finland	France	Germany	Hungary	Netherl.	Norway	Spain	Sweden	Switzerl.	UK	USA
Individual data																
Alcohol use in the past 12 months[1]	84.5	86.3	78.0	83.0	91.8	95.1	91.5	95.2	79.0	73.2	95.4	49.0	84.4	68.3	100.0	55.3
Mean quantity of pure ethanol (in g) per drinking day	23.4	16.6	43.5	50.1	46.4	30.2	10.6	34.5	16.1	23.5	51.6	23.8	31.2	17.6	31.3	27.3
Societal level data																
Partnership	73.6	77.7	76.2	81.0	76.7	84.1	68.0	87.9	83.5	85.5	76.6	86.0	82.2	96.2	75.0	49.7
Paid labour	64.7	55.9	77.5	74.1	75.9	72.3	70.6	45.6	66.4	61.0	75.3	50.0	82.2	64.7	58.9	65.9
Ratio on gender income[2]	0.70	0.46	0.64	0.51	0.73	0.71	0.64	0.58	0.50	0.64	0.77	0.64	0.81	0.63	0.66	0.63

Note:

[1] Percentage of drinking mothers in the 25–49 age group;

[2] The ratio on gender income is based on ratio of the female non-agricultural wage to the male non-agricultural wage, the female and male shares of the economically active population, the total female and male population and GDP per capita in purchasing power parity terms in US dollars. These estimates are based on data for the most recent year available during 1991–2004.

Table 3

Regression coefficients (B), standard errors (SE) and t-ratios for three hierarchical linear models: Model 1(random coefficient model), Model 2 (level-two intercept model), and Model 3 (cross-level interaction model).

| | Model without factors at the country level | | | Models with factors at the country level | | | | | |
| | Model 1 | | | Model 2 | | | Model 3 | | |
	B	SE	t-ratio	B	SE	t-ratio	B	SE	t-ratio
Societal level data									
Intercept	2.98***	0.14	20.82	2.98***	0.16	18.36	2.98***	0.14	20.69
GNI				−0.01	0.01	−0.31	−0.01	0.01	−0.41
Gender-income ratio				−1.20	1.12	−1.08	0.52	1.19	0.43
Individual data[1]									
reference (partnered mothers not in paid labour)									
single mothers not in paid labour Intercept	0.22***	0.04	4.99	0.22***	0.04	5.07	0.22***	0.04	4.91
Interaction Gender-income ratio							0.19	0.51	0.38
single mothers in paid labour Intercept	0.20***	0.03	6.36	0.20***	0.03	6.34	0.20***	0.03	6.20
Interaction Gender-income ratio							0.05	0.34	0.15
partnered mothers in paid labour Intercept	0.09***	0.03	3.79	0.09***	0.02	3.92	0.08***	0.02	3.99
Interaction Gender-income ratio							−0.68**	0.26	−2.66

Note:

[1] All models were adjusted for age and educational level.

***
p < .001

**
p < 0.01