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Alcohol use of immigrant youths in The Netherlands: The roles of parents and peers across different ethnic backgrounds

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Abstract

Introduction and Aims. The aims of this study were to examine the roles of parental permissiveness toward alcohol use and affiliation with alcohol-using peers in alcohol use in youths from various ethnic backgrounds, and whether the role of peers was moderated by parental permissiveness. In addition, differences in these associations between native Dutch and non-Western immigrant youths were examined. **Design and Methods.** Cross-sectional data of 578 youths with Surinamese, Moroccan, Turkish, Antillean and Asian backgrounds and 81 native Dutch were used, all aged 15–24. Alcohol use, affiliation with alcohol-using peers and parental permissiveness were measured using self-report questionnaires. Regression models controlled for age, religiosity, education level and parental alcohol use. Because of very low levels of alcohol use, data from Turkish and Moroccan immigrants were aggregated, and logistic regression analyses were performed. **Results.** Parental permissiveness and affiliation with alcohol-using peers were positively related to level of alcohol use in youths with Surinamese, Antillean and Asian backgrounds and played an equally strong role in native Dutch youths with one exception. In Surinamese youths, parental permissiveness was more strongly related to alcohol use than in native Dutch youths. In youths with a Turkish/Moroccan background, parental permissiveness and affiliation with alcohol-using peers were strongly associated with any (versus no) alcohol use. Only parental permissiveness was, equally strong, associated with any alcohol use in native Dutch youths. **Discussion and Conclusions.** Irrespective of ethnic background and differences in level of alcohol use, parental permissiveness and affiliation with alcohol-using peers are related to youth alcohol use. [Creemers HE, Spanakis P, Delforterie MJ, Huizink AC. Alcohol use of immigrant youths in The Netherlands: The roles of parents and peers across different ethnic backgrounds. *Drug Alcohol Rev* 2017;36:761–768]

Key words: alcohol, alcohol-specific rules, alcohol-using peers, immigrants, adolescence.

Introduction

By the time European adolescents reach the age of 16, over 80% report life-time alcohol use and approximately 60% report past-month alcohol use [1]. Yet, persistent alcohol use in this developmental period has various adverse associations, including aggressive and delinquent behaviours [2], attention and memory problems [3] and a higher risk of substance use disorder [4]. The costs on health care and criminal justice related to excessive youth drinking have led to extensive examination of possible risk and protective factors to guide the development of effective prevention and intervention programs. This examination has shown that peers and parents play an important role in youth alcohol use (for reviews, see [5–7]).

Despite the increased ethnic diversity in European countries, little is known regarding the roles of peers and parents in alcohol use of non-Western immigrant youths. The underrepresentation of ethnic minorities in research that seems associated with various barriers to recruitment, including cultural values and literacy levels (for an overview, see [8]), jeopardises the relevance and applicability of results to these groups. Differences in social backgrounds [9] and in (cultural) norms regarding alcohol use [10] may result in differential associations with peer and parental risk factors of alcohol use in native Western versus non-Western immigrant youths, further emphasising the need to examine such associations in youths with various ethnic backgrounds.

In the present study, we examined the link between peer and parental risk factors and alcohol use in youths

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with native Dutch, Surinamese, Moroccan, Turkish, Antillean and Asian backgrounds residing in the Netherlands. Whereas immigrants from Indonesia, Suriname and the Antilles moved to the Netherlands (in, respectively, the 1940s, 1970s and 1990s) from former Dutch colonies and were to some extent already acquainted with the Dutch culture and language, immigrants from China (1940s) and Morocco and Turkey (1960s) immigrated for economic reasons and were less familiar with the Dutch culture and language. Individuals from Surinamese, Moroccan, Turkish, Antillean and Asian origin value interpersonal relations, conformism, social harmony and collectivism more than native Dutch individuals, who value autonomy and independence [11,12]. Whereas the majority of the native Dutch has no religious affiliation, most Moroccan and Turkish immigrants are Muslims, while Surinamese, Antillean and Asian immigrants have more diverse religious backgrounds. With regard to adolescent alcohol use, lower levels of alcohol use have been reported among non-Western immigrant youths in the Netherlands compared with native Dutch youths [13]. Percentages of any alcohol use in 11- to 20-year-olds in the Netherlands have been estimated at 79% for native Dutch and 76%, 66%, 30% and 16% for youths with respectively Antillean, Surinamese, Turkish and Moroccan backgrounds. Similar patterns have been found in other European countries, particularly in youths with Turkish/Moroccan backgrounds [e.g. 14], mainly because of Islam religion-induced alcohol prohibition [15].

In this ethnic diverse group, we studied alcohol use in relation to two specific risk factors: parental permissiveness toward alcohol use and affiliation with alcohol-using peers. In Western populations, parental permissiveness toward alcohol use (i.e. low level of strict alcohol-specific rules) has been associated with greater adolescents' involvement with alcohol [16], while the opposite was reported for strict parental rules [17,18]. It is unknown to what extent the association between parental permissiveness and alcohol use generalises to non-Western immigrant youths. Because these youths originate from more collectivistic societies, compared with Western individualism [19], which promote stronger attachment to family values comprising loyalty, obligations and responsibility [20], they may be more inclined to comply with parental rules regarding alcohol use. Thus, we expected stronger associations between parental permissiveness and alcohol use in non-Western immigrant youths compared with native Dutch youths.

Affiliation with alcohol-using peers has also been associated with adolescent and young adult alcohol use in general population samples [e.g. 5, 21–22]. Peer cluster theory, which defines peer clusters as small groups

of peers with high uniformity, shared ideas and behavioural norms, has been proposed to explain this association [23]. According to this theory, peer clusters either encourage alcohol and other drug use or provide sanctions against it. The association between affiliation with alcohol-using peers and adolescents' own alcohol use has been replicated in minority groups, for instance, in Hispanic adolescents living in the USA [24], non-European immigrants in Sweden [25] and Turkish and Moroccan immigrants in the Netherlands [26]. Taking into account the growing independence from parents and importance of peers that characterises the transition from early adolescence to adulthood [27], we expected a stronger association between affiliation with alcohol-using peers and alcohol use in native Dutch youths, coming from a culture that emphasises autonomy and independence [19], than in non-Western immigrant youths.

Interestingly, according to peer cluster theory [23], social influences other than peers only have indirect effects on adolescents' substance use, by affecting the relationship between peers and own use. Following this reasoning, the association between affiliation with alcohol-using peers and own alcohol use may be moderated by parental permissiveness toward alcohol use. As a consequence, we expected that low parental permissiveness toward alcohol use weakened the association between affiliation with alcohol-using peers and youths alcohol use, particularly in non-Western immigrant youths who are assumed to have stronger attachment to family values [20].

Thus, the main objectives of the current study were to examine the roles of parental permissiveness toward alcohol use and affiliation with alcohol-using peers in alcohol use of youths from various ethnic backgrounds. In addition, we assessed whether the association between affiliation with alcohol-using peers and alcohol use was moderated by parental permissiveness. The inclusion of native Dutch youths enabled us to examine differences between native Dutch and non-Western immigrant youths.

Method

Participants

The present study reports data from the i4culture project conducted from October 2010 to March 2013, targeting Dutch youths (age 15–24) belonging to the five largest ethnic groups in the Netherlands (Surinamese, Moroccan, Turkish, Antillean and Asian) and residing in the Randstad area. This metropolitan region in the central-western Netherlands houses over 40% of the Dutch population, including approximately 30% of all

0- to 24-year-olds [28]. Respondents were recruited in public areas, including malls and railway stations, at high schools, via youth organisations and by asking participants to invite their friends to participate. Often, (small) groups of youths from various backgrounds were approached, inviting all group members to participate to avoid any suggestion of discrimination. Recruitment resulted in a sample of 989 participants, of which 81% ($N = 799$) were assigned to the five ethnic groups, while 11% was native Dutch ($N = 106$). Ethnicity status was marked as native Dutch when participant, both parents and all grandparents were born in the Netherlands, and non-native Dutch when participant, (one of) the parents, and/or both grandparents from at least one side of the family were born in either Suriname, Morocco, Turkey, Antilles or an Asian country. For the current study, participants who did not live with their parents/caregivers ($N = 218$) and who did not have complete data on all relevant factors ($N = 28$) were excluded. This resulted in a sample of 659 participants (46% male) with Surinamese (25%, $N = 163$), Moroccan (24%, $N = 160$), Turkish (13%, $N = 86$), Antillean (10%, $N = 68$), Asian (15%, $N = 101$) and native Dutch (12%, $N = 81$) backgrounds.

Procedures

After the nature of the study was explained, participants signed informed consent. For adolescents under 18, a letter was sent to the parent(s) explaining the nature of the study and providing them the opportunity to reject the inclusion of their child. Parents of only eight under aged adolescents (<1%), from various ethnic backgrounds, did not approve of the participation of their child. Participants were asked to complete a self-report questionnaire. To increase reliability, confidentiality was emphasised. Participants who completed and returned the questionnaires, either on paper (in classrooms) or through the Internet via a link sent by e-mail, were rewarded with a gift voucher. The ethical committee of the University of Amsterdam approved the study (2010-CDE-03).

Measures

Alcohol use. Respondents were asked about the frequency of their alcohol use, with response options on a five-point scale ranging from *(almost) never* to *(almost) every day*. The intensity of alcohol use was assessed by asking about the following: (i) the average number of weekdays and weekends respondents had used alcohol in the previous 4 weeks; and (ii) the average number of alcohol drinks respondents had been drinking on weekdays and weekends ranging from (0) *I don't drink* to (8) *11 drinks*

or more per day. These four scores were combined to obtain an indication of the total weekly number of alcohol drinks consumed.

Parental permissiveness toward alcohol use. The degree to which parents permit their children to use alcohol was measured with a 10-item scale [17]. Respondents were asked about rules that their parents impose about alcohol in different social contexts (e.g. 'I am allowed to drink alcohol when my parents are home'). Responses ranged from (0) *not applicable at all* to (4) *completely applicable*. A mean-item score was calculated. The internal consistency of this scale was high (Cronbach's alpha 0.98).

Affiliation with alcohol-using peers. Respondents were asked how many of their friends drink alcohol at least once a week, with response options ranging from (0) *no one* to (4) *all of them*.

Covariates. Age, gender, religiousness, education level and parental alcohol use were included as covariates. Religiousness was measured by asking participants whether they were religious or not. Education level was dichotomised into low education level (finished primary education or followed/finished lower tracks of secondary or tertiary education) and high education level (followed/finished higher tracks of secondary or tertiary education). Frequency of parental alcohol use was questioned on a five-point scale, ranging from *(almost) never* to *(almost) every day*, for each parent separately. The score of the parent who used alcohol most frequently was selected as indicator of parental alcohol use.

Statistical analyses

Analyses were conducted using the Statistical Package of Social Sciences version 22.0 for Windows (SPSS Inc., Chicago, IL) and MPLUS 7.11 [29]. Descriptives were calculated per ethnic group. Differences between youths in the native Dutch group and youths in each of the immigrant groups were tested using *t*-tests and χ^2 tests.

Parental permissiveness, affiliation with alcohol-using peers, parental alcohol use and age were standardised to a mean of 0 and a standard deviation of 1. To answer our research questions, we used structural equation modelling in MPLUS. For each of the ethnic groups, we first measured a latent variable of alcohol use by two manifest count variables: frequency and intensity of alcohol use. Next, we estimated the main effects of affiliation with alcohol-using peers and parental permissiveness toward alcohol use on this latent variable.

Second, to estimate the interaction effect of affiliation with alcohol-using peers and parental permissiveness, the interaction term was added to the model. Covariates were included in the statistical models if they correlated significantly with both alcohol use and affiliation with alcohol-using peers or parental permissiveness or if they deviated across the native Dutch group and one or more of the immigrant groups.

Then, we tested whether the strengths of the significant paths from affiliation with alcohol-using peers and parental permissiveness to alcohol use were equal for each of the immigrant groups when compared with the native Dutch. To this end, each of the immigrant samples was aggregated with the native Dutch sample. For each of the combinations, we reran the analysis (the main effects model or the model, including the interaction), including a main effect for background and interaction terms for background*permissiveness/*peers/*permissiveness*peers (depending on significance in the previous step).

Results

Descriptives

Gender was equally distributed among the groups. Native Dutch youths were significantly younger (17.20, SD = 1.69) than participants with Surinamese (18.82, SD = 2.32), Moroccan (18.63, SD = 2.37), Turkish (19.05, SD = 2.54), Antillean (18.43, SD = 2.31) or Asian (18.59, SD = 2.43) backgrounds (all P 's < 0.001). In addition, native Dutch youths were less likely to be religiously affiliated (11%) than youths with Asian (39%), Surinamese (71%), Antillean (85%), Turkish (90%) or Moroccan (99%) backgrounds (all P 's < 0.001). High (versus low/intermediate) education level was significantly more common in the native Dutch youths (77%) than in youths with Turkish (47%), Moroccan (46%), Surinamese (41%) or Antillean (25%) backgrounds (all P 's < 0.001). There was no significant difference in education level between native Dutch youths and youths with an Asian background (67%). Finally, native Dutch youths reported higher levels of parental alcohol use than youths from any of the immigrant groups (all P 's < 0.001).

Native Dutch youths reported a significantly higher frequency and intensity of alcohol use than youths with Surinamese, Antillean, Moroccan or Turkish backgrounds (Table 1). To illustrate, while approximately 27% of native Dutch adolescents reported weekly alcohol use, this was reported by 9% of youths with Surinamese or Antillean backgrounds and by, respectively, 4% and 1% of youths with Turkish or Moroccan backgrounds. There was no significant difference in frequency and intensity of alcohol use

between native Dutch youths and youths with an Asian background. Parental permissiveness toward alcohol use and affiliation with alcohol-using peers were also the highest in native Dutch youth when compared with all immigrant youth with the exception of youths with an Asian background.

Associations of parental permissiveness toward alcohol use and affiliation with alcohol-using peers

In all statistical models, age, education level, religiousness and parental alcohol use were included as covariates (correlations between covariates and (in) dependent variables per ethnic group are presented in the Supporting Information). Because of the low levels of alcohol use reported by youths with a Turkish or Moroccan background (respectively, 22 (25.6%) and 11 (7%) adolescents reported any alcohol use), these groups were excluded from the structural equation models.

For all remaining groups, higher levels of parental permissiveness toward alcohol use were associated with higher levels of youth alcohol use (β s 0.29–0.60, P 's < 0.05). Affiliation with alcohol-using peers was also positively associated with alcohol use in all groups (β s 0.18–0.52, P 's < 0.05). Non-significant interaction terms between parental permissiveness and affiliation with alcohol-using peers indicated that the association between affiliation with alcohol-using peers and alcohol use was not moderated by parental permissiveness in any of the subgroups. Results are presented in Table 2.

Subsequently, we tested whether the strengths of the paths from affiliation with alcohol-using peers and parental permissiveness to alcohol use were equal for each of the immigrant groups when compared with the native Dutch. A significant background by parental permissiveness interaction indicated that in youths with a Surinamese background the link between parental permissiveness and alcohol use was stronger than in native Dutch youths (β 0.68, P < 0.01). The strength of the association between affiliation with alcohol-using peers and alcohol use did not significantly differ between these two groups (β -0.43, P = 0.07). For youths with an Antillean or Asian background, none of the associations differed in strength from the associations in native Dutch youths (respectively, β 0.22, P = 0.09 and β 0.26, P = 0.06 for parental permissiveness; respectively, β -0.12, P = 0.47 and β -0.10, P = 0.48 for affiliation with alcohol-using peers).

We aggregated the youths with Turkish and Moroccan backgrounds and performed logistic regression analyses to explain any alcohol use in these youths, operationalised as (*almost*) no alcohol use (0) versus *occasional/more frequent alcohol use* (1). Results of the main effects model (Table 3) indicated that parental

Table 1. Descriptives: percentages per subgroup and differences between native Dutch group and minority groups

	Background, percentages %						Native Dutch vs minority groups (χ^2)
	Native Dutch ₁ , N = 81	Surinamese ₂ , N = 163	Turkish ₃ , N = 86	Moroccan ₄ , N = 160	Antillean ₅ , N = 68	Asian ₆ , N = 101	
<i>Frequency of alcohol use</i>							1 > 2, 3, 4, 5
(Almost) never	23.5	35	74.4	93.1	33.8	32.7	1 = 6
Occasional, less than once a month	32.1	43.6	16.3	4.4	51.5	40.6	
Monthly	17.3	11.7	5.8	1.3	5.9	12.9	
Weekly	27.2	9.2	3.5	1.3	8.8	13.9	
Daily	0	0.6	0	0	0	0	
<i>Intensity (number of alcohol drinks per week)</i>							1 > 2, 3, 4, 5 ^a
0	33.3	51.5	80.2	96.3	54.4	42.6	1 = 6
≤5	40.7	31.3	12.8	2.5	23.5	37.6	
>5	25.9	17.2	7	1.3	22.1	19.8	
<i>Parental permissiveness (number of alcohol-specific rules, 0–10)</i>							1 > 2 ^a , 3, 4, 5 ^a
No rules	37	23.3	10.5	1.9	20.6	37.6	1 = 6
1–4 rules	28.4	28.8	11.6	0	33.8	26.7	
5–9 rules	21	27.6	18.6	10.6	27.9	18.8	
10 rules	13.6	20.2	59.3	87.5	17.6	16.8	
<i>Weekly alcohol-drinking peers</i>							1 > 2, 3, 4, 5
None	9.9	17.8	29.1	51.9	17.6	14.9	1 = 6
A couple	21	36.6	50	30.6	44.1	28.7	
Half	17.3	14.7	8.1	10	7.4	13.9	
Most	35.8	27	8.1	6.3	22.1	31.7	
All	16	4.9	4.7	1.3	8.8	10.9	

Categories for intensity of alcohol use and parental permissiveness were created for descriptive purposes only; **Bold** <0.001; *in italics* <0.01. ^a<0.05.

Table 2. Standardised estimates for models on alcohol use (latent variable) in youths with native Dutch, Surinamese, Antillean and Asian backgrounds

	Background	Native Dutch	Surinamese	Antillean	Asian
Main effect models (1)	Age	−0.26*	0	−0.08	−0.26*
	Religiousness	−0.06	−0.11	−0.21**	0.11
	Education level	0.14	0.06	−0.03	−0.05
	Parental alcohol use	0.04	0.07	−0.26*	−0.11
	Parental permissiveness	0.29*	0.54***	0.33**	0.60***
	Alcohol-using peers	0.52***	0.18*	0.30*	0.44***
Models with interaction (2)	Age	−0.26*	−0.01	−0.02	−0.26*
	Religiousness	−0.06	−0.11	−0.47***	−0.11
	Education level	0.14	0.06	0.09	−0.05
	Parental alcohol use	0.03	0.06	0.16	−0.12
	Parental permissiveness	0.29*	0.55***	0.29*	0.60***
	Alcohol-using peers	0.51***	0.19*	0.28*	0.44***
	Parents × peers	−0.04	−0.04	−0.01	0.04

* $P < 0.05$. ** $P < 0.01$. *** $P < 0.001$.

permissiveness toward alcohol use and affiliation with alcohol-using peers were positively associated with alcohol use [odds ratios (OR) respectively 2.37 (95% confidence interval [CI]) = 1.48–3.81) and 3.02 (95%

CI = 1.87–4.87)]. The association between affiliation with alcohol-using peers and alcohol use was not moderated by parental permissiveness (OR = 1.58, 95% CI = 0.86–2.90). While the strength of the association

Table 3. Logistic regression models explaining any alcohol use (dichotomous) in youths with Turkish/Moroccan and native Dutch backgrounds

	Background	Turkish/Moroccan, OR (95% CI)	Native Dutch, OR (95% CI)
Main effect models (1)	Age	0.73 (0.42–1.28)	0.37* (0.16–.85)
	Religiousness	0.24 (0.03–1.63)	0.41 (0.06–2.72)
	Education level	0.64 (0.23–1.81)	2.34 (0.50–11.06)
	Parental alcohol use	1.88 (0.88–4.00)	0.66 (0.32–1.36)
	Parental permissiveness	2.37* (1.48–3.81)	4.83* (1.83–12.77)
	Alcohol-using peers	3.02* (1.87–4.87)	1.15 (0.46–2.81)
Model with Interaction (2)	Age	0.27 (0.41–1.28)	
	Religiousness	0.19 (0.72–3.68)	
	Education level	0.69 (0.24–1.98)	
	Parental alcohol use	1.63 (0.72–3.68)	
	Parental permissiveness	2.62* (1.50–4.56)	
	Alcohol-using peers	3.11* (1.85–5.23)	
	Parents × peers	1.58 (0.86–2.90)	

* $P < 0.001$. CI, confidence interval; OR, odds ratio.

between parental permissiveness and any alcohol use did not differ between youths with a Turkish/Moroccan background and native Dutch youths (OR = 0.82, 95% CI = 0.35–1.91), the strength of the association between affiliation with alcohol-using peers and alcohol use was significantly different (OR = 2.49, 95% CI = 1.17–5.31). A main effects model in native Dutch youths indicated that affiliation with alcohol-using peers was not associated with any alcohol use in this group (OR = 1.41, 95% CI = 0.72–2.77).

Discussion

The findings of this study indicate that in youths with Surinamese, Antillean, Asian and native Dutch backgrounds, parental permissiveness and affiliation with alcohol-using peers were related to higher levels of alcohol use. In youths with Turkish/Moroccan background, parental permissiveness and affiliation with alcohol-using peers were associated with any (versus no) alcohol use. The very low level of alcohol use in these youths also reported in other European studies [14], necessitated alternative analyses in an aggregated group of youths with Turkish and Moroccan backgrounds. The Islamic affiliation of over 90% of these participants may explain the high prevalence of abstinence from alcohol. Although non-Western immigrant youths, with the exception of youths with an Asian background, reported less alcohol use, perceived lower parental permission to use alcohol and had lower proportions of friends who weekly used alcohol when compared with native Dutch youths, the associations of parental permissiveness and affiliation with alcohol-using peers with alcohol use established in Western societies [5,16–18,22] seem to generalise to non-Western immigrant youths.

Our hypothesis that the association between parental permissiveness and higher levels of alcohol use would be stronger in non-Western immigrant youths when compared with native Dutch youths was only confirmed in youths with a Surinamese background, but not in youths with Antillean or Asian backgrounds. Interestingly, it has been demonstrated that attachment to family values is higher in Surinamese than in Antillean immigrants in the Netherlands [20]. This suggests that the attachment to family values in Antillean immigrant youths may not deviate sufficiently from that in native Dutch youths to be reflected in a stronger link between parental permissiveness and alcohol use. Furthermore, acculturation in immigrant youths, who are mostly second and third generation immigrants [30], may explain the absence of a stronger association in Antillean and Asian immigrant youths. In Antillean immigrants, for instance, second-generation immigrants have been found to hold less traditional family values and weaker family ties than first generation immigrants [20]. Comparable levels of alcohol use per week, parental permissiveness toward alcohol use and affiliation with alcohol-using peers in native Dutch and Asian immigrant youths in this study suggest the latter group to be most influenced by the Dutch culture, at least with respect to alcohol related norms.

The strength of the association between parental permissiveness and any (versus no) alcohol use did not differ between youths with Turkish/Moroccan background and native Dutch youths. In both groups, parental permissiveness was strongly related to a higher likelihood of alcohol use. Because the group of Turkish/Moroccan immigrants contained only 33 participants who reported any alcohol use and the group of abstaining native youths contained only 19 individuals, caution is warranted in the interpretation of these results.

However, inspection of our data shows very low levels of parental permissiveness perceived by most abstaining youths, which cautiously suggests that when parents enforce very strict rules about alcohol use, youths are more likely to abstain. Please keep in mind that for most youths with Turkish/Moroccan backgrounds, not only parents but also the Islam prohibits the use of alcohol, which may have biased this result.

Our hypothesis that the association between affiliation with alcohol-using peers and higher levels of alcohol use would be strongest in native Dutch youths was not confirmed in youths with Surinamese, Antillean and Asian backgrounds. Only in native Dutch youths, regression coefficients suggest a stronger role of peers relative to parents in alcohol use, which may point to an earlier transition from adolescence to adulthood in this group of youths, characterised by increasing independence from parents and growing importance of peers [27]. However, the role of peers is not considerably more important than in youths from these immigrant groups, indicating that the potential influence of social background on the association between peer and own alcohol use is limited.

Whereas in youths with Turkish/Moroccan background, affiliation with alcohol-using peers was positively related to *any (versus no)* alcohol use, peer use was not associated with any alcohol use in native Dutch youths. Given the high prevalence of alcohol use among Western youths [1], and the tendency of native youths to associate with other native youths [31], the non-significant role of peers in any alcohol use in native Dutch youths may be explained by the lower availability of peers who abstain from alcohol or do not drink weekly.

Although based on peer cluster theory [23], parental permissiveness would only be indirectly related to adolescents' alcohol use by affecting the relationship between peers and own alcohol use, direct relations between parental permissiveness and youth alcohol use were found in this study. Our hypothesis was therefore rejected.

Some limitations of this study should be mentioned. First, we used a convenience sample. Because convenience sampling can lead to the under-representation or over-representation of particular groups within the sample, generalisation to the population should be performed with caution. Second, the sample sizes in some ethnic groups are relatively small, limiting the power to detect associations and differences between the groups of small magnitude. Third, our subsample of native Dutch youths was on average over a year younger than the subsamples of immigrant youths; nonetheless, alcohol use and risk factors for alcohol use were highest in this group. Fourth, our measures were assessed using self-report questionnaires, which are susceptible to

social-desirability biases. However, self-reports of substance use have been found to be reliable when confidentiality is emphasised [32] and suitable to measure alcohol use in Turkish and Moroccan immigrants [33]. Last, because of the cross-sectional design of this study, it is impossible to draw conclusions about causation.

Conclusively, this study demonstrated that parental permissiveness and affiliation with alcohol-using peers are positively related to the level of alcohol use in immigrant youths with Surinamese, Antillean and Asian backgrounds and play an equally strong role in native Dutch youths with one exception. In Surinamese youths, parental permissiveness is more strongly related to alcohol use than in native Dutch youths. Furthermore, parental permissiveness and affiliation with alcohol-using peers are strongly associated with *any (versus no)* alcohol use in immigrant youths with a Turkish/Moroccan background. Only parental permissiveness was, equally strong, associated with any alcohol use in native Dutch youths. Our findings suggest that parents, irrespective of their cultural background, should be stimulated to enforce clear rules about alcohol use, as this protects youths from (higher levels of) alcohol use. In addition, because our findings also emphasise the overall importance of peers in adolescent alcohol use, prevention programs should also target social influences, for instance, by providing youths with information about the behaviour and attitudes of their peers (norm-based approach [34]). With regard to future research, longitudinal studies are needed to examine how peers and parents affect the initiation and progression of alcohol use in immigrant youths, and how this may be affected by risk factors specific to migration, such as acculturation. Furthermore, particularly in youths with Turkish/Moroccan backgrounds, parental permissiveness was positively related to parental alcohol use. Although research in native Dutch youths suggests that parental alcohol use does not affect the relation between alcohol-specific socialisation practices and adolescents' alcohol use [17], this may be different in ethnic groups with a larger variance in parental alcohol use. Lastly, because peer network size and ethnic composition seem to play a role in adolescent alcohol use [31,35], including these peer group characteristics in research focusing on immigrant alcohol use may further enhance our knowledge on the role of peers in alcohol use by these youths.

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Supporting information

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