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Hispanic/Latino Adolescents' Alcohol Use: Influence of Family Structure, Perceived Peer Norms, and Family Members' Alcohol Use

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Abstract

Background—Family structure and value system among Hispanic/Latino population are changing. However, very few studies are examining the combination of the influence of family structure, parental and sibling alcohol use, perceived peer norms about drinking, and alcohol use among Hispanic/Latino adolescents.

Purpose—This study examined the associations among family structure parental and sibling substance use, perceived peer norm toward drinking and alcohol use among a sample of adolescents in the US.

Methods—We assessed cross-sectional data from a 2010 study of 1,523 high school students from a school district in Los Angeles. Logistic regression analyses were conducted using SPSS 23.

Results—Our results indicate that family structure was not significantly associated with adolescents' alcohol use. Having family members' who consumed alcohol, perception of close friends' attitudes toward drinking, and perceived drinking prevalence among peers increased the likelihood of drinking.

Discussion—Findings suggest that alcohol use behaviors of members of the family unit, perception of drinking prevalence among peers, and perception of friends attitude to drinking (not their actual drinking behavior) increased the likelihood of drinking.

Translation to health education practice—We call Health Education Specialists develop awareness programs targeted at correcting adolescents' normative perceptions towards alcohol use prevalence among their peers.

BACKGROUND

Substance use among adolescents represents a pressing public health issue in the United States (U.S.). In 2014, 62% of high school seniors reported past year alcohol use, almost a quarter reported past-month binge drinking (i.e. having five or more drinks in a row), and 90% agreed that alcohol is easy to acquire ¹. This is concerning given underage drinking is associated with both immediate and long term health consequences ². Some of the immediate consequences include reduced nervous and cognitive functioning, and numerous risks, such as injuries, emergency room visits, suicidal ideation, academic difficulties, and risky sexual practices ^{3,4}. Long term consequences have also been associated with adolescent alcohol consumption. For example, early onset of drinking has been linked to alcohol dependence later in life, additional substance use/abuse, legal problems, and other physical and mental health consequences such as coronary heart diseases, hypertension, and aggression ^{2,5-7}.

Hispanic/Latino adolescents represent an especially at risk group for underage drinking and problematic drinking ⁸. Historically, Hispanic/Latino adolescents have had the second highest substance use rates compared to Whites (highest rates) and African Americans (third highest). However, recent findings from Monitoring the Future (MTF), a nationally representative study of US adolescents, reported Hispanics/Latino adolescents now have the highest reported rate of any illicit drug use and consuming enough alcohol to get drunk. For example, the percent of Hispanic/Latino adolescents in the 12th grade who reported being drunk in the past 30days increased from 21.2 in 2012 to 22.7 in 2014. ^{9,10}.

Compared to their non-Hispanic White counterparts, Hispanic/Latino 8th graders are approximately twice as likely to report binge drinking and three times as likely compared to their African American counterparts ¹. Similarly, a study of Hispanic/Latino adults showed that compared to other ethnic groups, they generally exhibited higher levels of alcohol use and were more likely to engage in hazardous drinking patterns ¹¹. Given that Hispanics/Latinos constitute the largest and fastest-growing ethnic/racial minority group in the US (U.S. Census Bureau, 2013), these findings emphasizes the need for research into the determinants of underage drinking among adolescent Hispanic/Latinos.

Multi-level Influences on Adolescent Alcohol Use

Researchers have argued that for a better understanding of adolescent alcohol use, there is need to consider and examine influencing factors at multiple levels ¹²⁻¹⁵. In other words, it is important to consider and leverage not only individual-level characteristics, such as personal attitudes, values, perceptions, but also the social and structural environment in which persons operate. The concept that different range of nested, contextual determinants jointly impact adolescents' behavior and health outcomes was made popular by Bonfenbrenner's seminal work ¹⁴. Building on this idea, researchers have worked to flush out the role personal characteristics, characteristics of the personal social context (e.g. family structure, parental substance use), sociocultural characteristics (e.g. perceived social norms), and the interaction of these factors play in adolescent substance use ^{13,15}.

The need to consider sociocultural influencing factors is especially important for Hispanics/Latinos. Relative to non-Hispanics, Hispanics/Latinos demonstrate unique normative beliefs about family and also exhibit a high level of family values, referred to as *familism*¹⁶; thus, family structure/ties represent salient constructs for understanding adolescent alcohol use among this sub-group of adolescents¹⁷. One aspect of family structure pertinent to alcohol use is the presence of siblings. While researchers have found parental drinking to encourage initiation of alcohol use among adolescents, sibling substance use is shown to reinforce and/or amplify the behavior^{18,19}. Moreover, adolescents who observe their parents use alcohol to relax or siblings using smoking to facilitate social interaction, might also develop positive attitudes towards these substances and become more likely to engage in substance use themselves²⁰.

Adolescents' perceived social norm toward alcohol use among peers

The period of adolescence is marked with heightened interest in social relationships, peer approval, and a dramatic increase in experimentation with drinking,^{21,22}. One of the factors most commonly linked to adolescent alcohol use is peer influence. Considered a proximal predictor of alcohol use, peer influences may be direct, such as peer pressure, which may include adolescents being encouraged to drink or being directly offered alcohol by their peers^{21,23,24}. Indirect peer influences are commonly referred to as social norms, the level of alcohol consumption that adolescents perceive as normal among their peers and other in their developmental period²¹.

Adolescents' perceptions of the drinking norm among their peers and their perception of the ease of obtaining alcohol could also be a factor that shapes their attitudes towards alcohol use. Research has documented significant differences between what adolescents believe to be their peer norms and those actual norms such that students believe their peers are more permissive and consume greater quantities of alcohol than they actually do²⁵. Furthermore, these perceived drinking norms have been found to be significantly correlated with actual drinking behavior among adolescents^{26,27}. This exaggerated perception of peer alcohol use has been shown to facilitate alcohol use and misuse²⁸⁻³⁰. The association between adolescent alcohol use and misperceptions about peer drinking levels represents a vicious cycle³⁰ since these (mis)perceptions of reality ultimately produce behaviors leading to a "*self-fulfilling prophecy*"³¹. Similarly, adolescents' perception of the ease of obtaining alcohol is a phenomenon that is also shown to influence adolescents' attitudinal norm toward alcohol use. Johnston et. al.¹, contend 90% of teenagers in the US agree that alcohol is easy to acquire. This perceived ease of obtaining alcohol could shape adolescents' attitudinal norm towards the "commonplaceness" of alcohol, such that adolescents who choose to/want to abstain appear to be a minority and "unpopular"²⁵. Given that the period of adolescence is marked with increased interest in peer interactions and peer acceptance, adolescents may perceive that since alcohol is common place and many of their peer use alcohol, underage drinking may be thought of as "normal."

PURPOSE

Although studies have showed that family structure and value system among Hispanic/Latino population is changing, there are few studies that examine the combination of family structure, parental and sibling alcohol use, perceived peer norms about drinking, and alcohol use among a predominantly Hispanic high school population. Hence, guided by the concept that different range of nested, contextual determinants jointly impact adolescents' alcohol use behavior - as demonstrated in Bronfenbrenner's ecological framework - the current study seeks to elucidate the effects of individual, family, peer, and perceived group norm factors which influence alcohol use among a sample of predominantly Hispanic 10th grade adolescents. We hypothesized that individual characteristics (e.g., age at first drink, perceived drinking norm among peers), peer factors (e.g., having friends who disapprove of drinking), and family factors (e.g., family structure, parent and sibling drinking) would demonstrate significant associations with alcohol use, above and beyond the influence of demographic control variables.

METHODS

Study Design

A cross-sectional sample of 1,523 10th grade adolescents from four high schools in Los Angeles, California were asked to complete a paper and pencil survey in May 2010. Approximately 1,224 students returned their parental consent forms and 1,174 completed the surveys on a regular school day, during an English or History class. Overall participation rate was 77%.

Study Participants and Setting

Data for this study were collected as part of a pilot for The University of Southern California Social Networks and Networking Study²⁴. Approval for the survey was also obtained from The University of Southern California's Institutional Review Board, as well as from the district superintendent, principal, and teachers in each of the four schools enrolled in the study. The students in this Los Angeles school district are predominantly Hispanic/Latino.

Conceptual Model

Based on theoretical and empirical evidence highlighting multi-level factors and their influence on alcohol behaviors, we developed a conceptual model relating intra- and interpersonal factors to the dependent variable, past 30-day drinking (Fig. 1)³². Influenced by Bronfenbrenner's ecological framework¹⁴, our model attempts to demonstrate that a multitude of factors, at various levels of influence, influence the alcohol consumption of Hispanic/Latino adolescents¹⁴.

Measures

The questionnaire, based on ones developed and implemented in the Add Health study³³, consisted of items concerning substance use, demographic characteristics, social networks, peer, and family characteristics.

Drinking—Alcohol use was assessed via the item “During the past 30 days, on how many days did you have at least one drink of alcohol?” Response options were 0 days; 1 or 2 days; 3 to 5 days; 6 to 9 days; 10 to 19 days; 20 to 29 days; and all 30 days.

Individual Factors—Questionnaire items assessed demographic contextual factors including age, gender, and ethnicity. Alcohol-related individual factors assessed included “How old were you when you had your first drink of alcohol other than a few sips?” “How difficult would it be for you to get alcohol if you wanted some?” and “Out of every 100 students your age, how many do you think drink alcohol once a month or more?”

Peer Factors—Direct peer influence was measured by asking “How many of your friends [out of their five closest friends] would be unfriendly towards you if you did drink?”

Family Factors—Students were asked questions about their family structure (responses were living at home with mother and father, mother only, mother and step-father, father only, father and step-mother, sometimes with my mother or father, group home, someone else, or other), whether their parent/adult they live with drinks every day or most days, and whether any of their siblings (brother or sister) drinks alcohol once a month or more.

Statistical Analyses

Drinking in the past 30 days was the dependent variable for all the analyses. Due to the typically low prevalence of drinking among early adolescents (64.5% reported never consuming alcohol), the dependent variable, drinking, was dichotomized into ever drinkers or never drinkers. Based on the response distributions, some independent variables (family structure, ethnicity) were dichotomized into living with mother and father vs. other family arrangement and Hispanic vs. non-Hispanic respectively. Multiple logistic regression analyses were conducted and age, gender, ethnicity and school were controlled for in the analyses.

RESULTS

Sample Characteristics

Of the 1,174 students who completed the survey, 46.9% were boys and 43.1% were girls. 50.8% were Hispanic, 15% were Asians, 5.2% were Whites and 2.6% were Blacks, and 21.7% were of another race. The prevalence of drinking in the past 30 days is shown in Table 2 by age, gender, ethnicity, family structure and school. 30% (n=360) of surveyed students indicated they drank at least one drink of alcohol in the past 30 days. Among current drinkers, 40.6% were 15 years old and 53.5% were 16 years old. More than half (54.7%) of the students who reported drinking were females. 63.3% of students who reported drinking within the past month were Hispanic and 63.6% reported living with both their mother and father. Past month drinking prevalence across schools was relatively similar; School 1 (25.6%), School 2 (25%), School 3 (21.9%), and School 4 (27.5%).

Multivariate Analyses

Three logistic regression models were conducted: the first model included intrapersonal characteristics (age at first drink, perceived alcohol accessibility, and perceived drinking prevalence among peers); the second model included variables in the first model in addition to one peer factor (number of friends who would be unfriendly towards drinking); the third model included all the variables in the second model in addition to family factors (family structure, parent drinking, and sibling drinking). Age, gender, and ethnicity were retained as control variables in all three models. In Model 3, school was also added as a control variable. Results of the regression analyses are shown in Table 3. The Hosmer & Lemeshow goodness of fit indicator was used to assess the fit of the models. Models 1 and 2 indicated a poor fit for the data (larger chi-square and smaller p -value) but Model 3 indicated a better fit ($\chi^2=18.29$, $df=8$, $p=.02$). Nagelkerke R^2 model evaluation of the three models indicated that Model 1 and 2 explained 33% and 35% of the variance in 30-day drinking among students in our sample respectively while 3 explained 39% (making Model 3 the best model for the data). In Model 3, no demographic characteristic was significantly associated with 30-day drinking.

Intrapersonal factors—Age at first drink was positively associated with past month drinking. With each year a younger student initiated alcohol use, the more likely they were to report drinking in the past 30 days. Compared to students who indicated it would be probably impossible for them to get alcohol if they wanted some, those who thought it would be very easy to obtain alcohol were four times more likely ($OR=4.27$, $p<.01$) to report drinking within the past month. Those who thought it would be fairly easy to obtain alcohol were almost three times more likely ($OR=2.83$, $p<.01$) and those who perceived alcohol accessibility to be fairly difficult were 2.6 times more likely ($OR=2.64$, $p<.05$) to report drinking in the past 30 days. Those who thought it would be probably impossible and very difficult were less likely to report drinking within the past month ($OR=.22$, $p<.01$; $OR=.14$, $p<.01$ respectively). There was no significant association between those who thought it would be very difficult to obtain alcohol and past month drinking. Perceived drinking prevalence among peers was positively associated with drinking in the past 30 days. With an increase in perceived drinking prevalence among peers, students were slightly more likely to consume alcohol within the past month ($OR=1.09$, $p<.05$).

Peer factor—Having friends who will be unfriendly towards students in the sample if they drank was negatively associated past month drinking. Students who indicated that all their friends would be unfriendly towards them if they drank were less likely ($OR=.33$, $p<.01$) to report drinking in the past 30 days. There was no significant association between students who indicated having 1 or 2 friends who will be unfriendly towards them if they drank or those with 3 or 4 friends who will disapprove of drinking and reporting drinking in the past 30 days.

Family factors—Study participants' family structure, whether they lived with both parents or "other" was not significantly associated with past 30 day drinking. However, having one ($OR=1.6$, $p<.05$) or both parents ($OR=2.88$, $p<.01$) who drank was positively associated with consuming alcohol in the past month. With regards to sibling drinking, students who

had younger siblings who drank were more likely to report drinking in the past month (OR=4.64, $p<.05$) while the other categories were not significantly associated with past 30 day drinking.

DISCUSSION

The purpose of this study was to concurrently examine family structure, parental and sibling alcohol use, perceived peer norms about drinking, and alcohol use among a sample of predominantly Hispanic 10th grade adolescents. While previous studies have examined some these factors separately, we are unaware of an investigation which examined a combination of these factors together and among the largest and fastest-growing ethnic/racial group in the U.S.

The present study contends perceived alcohol accessibility is associated with alcohol use among Hispanic/Latino students. Although this finding supports previous research showing that having alcohol easily accessible for adolescents increases the likelihood of drinking^{34,35}, of particular interest is that compared to students who indicated that getting alcohol would be “probably impossible,” students who said it would be fairly difficult for them to obtain alcohol were still almost three times more likely to report alcohol use. This finding indicates that even though some adolescents might perceive obtaining alcohol to be fairly difficult, it does appear they still consume alcohol, possibly in social gatherings. Hence, prevention efforts need a multifaceted approach to reinforce the message of abstinence from underage drinking. Attention should be focused on reducing access to alcohol especially from social sources.

As noted earlier, family structure and family ties are important to Hispanic/Latinos. With studies also showing that parents and siblings alcohol use may impact adolescents’ alcohol use either through modeling or increased access, this suggests a need to examine the associations among family structure, parent and sibling drinking, and adolescent’s alcohol use. The results from this present study suggest there might be complex interplay among these factors and alcohol use among adolescents in the sample. Contrary to our hypothesis, there was no significant association between family structure (i.e. whether an adolescent lived with both parents vs other living arrangement) and alcohol use. This finding might indicate that the family structure may not play a significant role in increasing Hispanic/Latino adolescents’ likelihood of drinking. Previous studies have showed that there is a generational variation in the importance attached to family structure and ties¹⁷, hence, living in a single parent household or a household with both parents present does not necessarily place an adolescent at risk for drinking. However, the alcohol use behavior of the parent(s) in the household is a factor that is associated with adolescents’ likelihood of drinking. Additionally, having a younger sibling who drank alcohol was the only factor associated with alcohol use among students in our sample. These findings support previous literature indicating that parents’ alcohol use behaviors matter^{29,36} and suggests a need for research qualitatively exploring the role siblings play in alcohol use trajectory of Hispanic/Latino adolescents.

In our sample adolescents who perceived all of their friends will be unfriendly toward them if they drank were less likely to report drinking in the past 30 days. While the effect of peer influence on adolescent drinking has been well established in the literature^{37,38}, this finding that an adolescents' perceptions of his/her friends attitudes towards drinking (and not just his/her friends' actual drinking behavior) is associated with the adolescent's indicates that peer interactions during adolescence are a factor that knows no ethnic/racial differences and clearly exerts a pivotal influence on 10th grade adolescents' alcohol use behavior. If leveraged upon, these peer interactions could be positive influences on reducing underage drinking among Hispanic/Latino adolescents³⁷.

With regard to an adolescents perceptions of alcohol use prevalence among their peers and its association with alcohol use, those adolescents who perceived more drinking among their peers were more likely to report drinking in the past 30 days. As noted earlier, exaggeration of alcohol use prevalence among peers is a determinant that helps shape adolescents' attitudes and norms towards alcohol. Consistent with previous studies^{28,29} that have showed that if adolescents thought many of their peers drank, they were more likely to engage in alcohol use, possibly earlier, this finding suggests the need for intervention efforts to address adolescents' normative perceptions toward alcohol use prevalence among their peers.

The results of this study must be interpreted within the context of the methodological limitations of the design. The data were cross-sectional and do not permit causal inference. Another limitation of this study is that self-reported questionnaire data limits interpretation and could be subject to inflation of some of the results. Despite these limitations, the results are informative as well as plausible and practical.

In sum, Hispanic/Latino adolescents are at an elevated risk for alcohol use in comparison to other minority youth, and given the long term consequences of early onset of drinking, it is imperative that research and practice with this population are attentive to the dynamics that influence drinking behavior. In addition to typical challenges adolescents face, Hispanic/Latino adolescents are often faced with the difficulty of navigating their ethnic identity while also trying to assimilate the American culture. This present study is an important contribution to this field of knowledge in that it serves to examine specific factors contributing to Hispanic/Latino adolescent drinking. These findings highlight the roles of the family structure, parental and sibling drinking, and perceived peer drinking in Hispanic/Latino adolescents' alcohol use behavior.

TRANSLATION TO HEALTH EDUCATION PRACTICE

Our findings provide Health Education Specialists seeking to tailor programming to Hispanic/Latino adolescents with insight into directions for how prevention efforts toward reducing underage drinking might be modeled for this unique population. Strategies may include awareness programs targeted at correcting these adolescents' normative perceptions towards alcohol use prevalence among their peers. Additionally, given that our findings indicate adolescents' past month drinking was linked with perceptions of whether their friends would be unfriendly towards them if they drank, health educators could also leverage this finding to design interventions to train/involve peers as educators and behavior models

in school health education programs. To maximize the quality of alcohol prevention and education programs among Hispanic/Latino adolescents, interventions efforts could also establish an alliance with multiple stakeholders, such as peers, families (parents and siblings), teachers, health education specialists, and other health professionals, particularly in the context of restricting the accessibility, correcting misconceptions about underage drinking prevalence, and understanding the harms, short and long term, of early onset of alcohol use. Given the importance of delaying initiation of alcohol use, maximizing the protective factors in an adolescent's life and environment represents an especially important task. Health educators would also do well to ensure these interventions are culturally appropriate and sensitive to this unique population. Health education researchers are encouraged to further qualitatively explore the role family structure and sibling substance use plays in shaping Hispanic/Latino adolescents' substance use perceptions and behaviors.

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Figure. 1.
Conceptual model showing multi-level factors influencing adolescents' alcohol consumption

Table 1

Characteristics of study participants, independent, and dependent variables (N=1,174)

	N	Percentage
Gender		
Male	551	46.9
Female	506	43.1
Ethnicity		
Hispanic	596	50.8
Non-Hispanic	522	44.5
No. of friends unfriendly to alcohol		
None	585	49.8
1 or 2	209	17.8
3 or 4	127	10.8
All 5 friends	142	12.1
Alcohol Accessibility		
Probably impossible	139	11.8
Very difficult	81	6.9
Fairly difficult	141	12
Fairly easy	285	24.3
Very easy	358	30.6
Family Structure		
Live with mother and father	656	55.9
Other	381	32.5
Parent Drinking		
None	489	41.7
1 of them	344	29.3
2 of them	184	15.7
Sibling Drinking		
No sibling	104	8.9
None drinks	551	46.9
Younger sibling drinks	13	1.1
Older sibling drinks	321	27.3
Both older and younger drink	20	1.7

Table 2

Prevalence of Drinking in the Past 30 Days by Gender, Ethnicity, Age, Family Structure, and School

Variable	Drinking (<i>n</i> =360)		
	n	% (Ever Drinkers)	% (Tot. Pop)
Total	360		30.7
Gender			
Male	158	45.3	15.9
Female	191	54.7	19.3
Ethnicity			
Non-Hispanic	132	36.7	13
Hispanic	228	63.3	22.4
Age			
<12	1	.3	.1
13	1	.3	.1
14	0	0	0
15	144	40.6	14.3
16	190	53.5	18.8
17	19	5.4	1.9
Family Structure			
Live w/mother & Father	218	63.6	22.3
Other	125	36.4	12.8
Schools			
School 1	92	25.6	9
School 2	90	25	8.8
School 3	79	21.9	7.8
School 4	99	27.5	9.7

Table 3

Final Multiple Logistic Regression Models for Drinking in the Past 30 Days

Variable (referent)	Model 1			Model 2			Model 3		
	Wald's χ^2	Odds Ratio	95% CI	Wald's χ^2	Odds Ratio	95% CI	Wald's χ^2	Odds Ratio	95% CI
Age	.07	1.04	.78, 1.38	.052	1.033	.12, 1.37	.05	1.03	.77, 1.38
Gender (Male)									
Female	1.59	.81	.58, 1.13	1.67	.803	.575, 1.12	2.38	.76	.54, 1.08
Ethnicity (Non-Hispanic)									
Hispanic	4.24	1.42 *	1.02, 1.99	4.41	1.44 *	1.03, 2.02	3.23	1.38	.97, 1.97
Age at first drink	93.88	1.57 **	1.44, 1.72	88.20	1.56 **	1.42, 1.71	88.37	1.58 **	1.43, 1.74
Alcohol accessibility (Probably impossible)	34.24						26.032		
Very easy	19.51	5.72 **	2.64, 12.39	16.56	5.13 **	2.34, 11.26	12.357	4.27 **	1.90, 9.59
Fairly easy	10.36	3.63 **	1.66, 7.95	8.65	3.30 **	1.49, 7.33	6.197	2.83 **	1.25, 6.41
Fairly difficult	7.59	3.27 **	1.41, 7.59	6.12	2.94 *	1.25, 6.92	4.666	2.64 *	1.09, 6.35
Very difficult	.01	.95	.33, 2.78	.052	.88	.297, 2.62	.438	.68	.22, 2.12
Perceived drinking prevalence among peers	11.72	1.12 **	1.05, 1.20	9.87	1.11 **	1.04, 1.19	6.00	1.09 *	1.02, 1.17
No. of friends Unfriendly towards alcohol (None)				11.59			9.934		
All 5 friends				10.83	.32 **	.16, .63	9.453	.33 **	.17, .67
3 or 4 friends				.98	.76	.43, 1.32	1.034	.74	.42, 1.32
1 or 2 friends				.001	.99	.661, 1.49	.162	.92	.60, 1.4
Family Structure (Live with both parents)									
Other							.42	1.13	.79, 1.61
Parent drinking (None drinks)									
Both parents drink							20.53	2.88 **	1.82, 4.55
One parent drinks							5.78	1.60 *	1.09, 2.35
Sibling drinking (None drinks)									
Older & younger sibling drinks							3.79	3.14	.99, 9.93

Variable (referent)	Model 1			Model 2			Model 3		
	Wald's χ^2	Odds Ratio	95% CI	Wald's χ^2	Odds Ratio	95% CI	Wald's χ^2	Odds Ratio	95% CI
Older sibling drinks							.31	1.11	.77, 1.58
Younger sibling drinks							4.39	4.64 *	1.10, 19.53
School 1							.078	.94	.590, 1.486
School 2							1.07	1.29	.798, 2.071
School 3							.46	1.18	.727, 1.927

*
 $p < .05$

**
 $p < .01$

Table 4

Model Summary for Multiple Regression Analyses

Test	Model 1			Model 2			Model 3		
	χ^2	df	p	χ^2	df	p	χ^2	df	p
Goodness-of-fit test									
Hosmer & Lemeshow	43.95	8	.00	31.80	8	.00	18.29	8	.02
Overall model evaluation									
Nagelkerke R ²	.33			.35			.39		
Model Chi square	235.78	9	.00	248.87	12	.00	285.84	21	.00