

## A CROSS-CULTURAL PILOT STUDY ON ALCOHOL EDUCATION AND YOUNG PEOPLE

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Experimentation with beverage alcohol during adolescence has become normative in most countries. Graduating American high-school students in 1986, for example, reported a 91.3% lifetime prevalence rate for alcohol use. Alcohol use in adolescence is problematic for a variety of reasons. Tobacco and alcohol, the most widely-used substances, exact the greatest public health toll in terms of associated morbidity and mortality (1-3). In addition to the increased morbidity and mortality associated with alcohol use during adolescence, it appears that normal developmental processes like pubertal growth, cognitive, social and moral development may also be altered, delayed or harmed because of substance use (4). Because they are in a developmental stage, adolescents do not have as many coping skills and resources available, compared to adults, to deal with the harmful effects and consequences (including physical, social, financial and legal) when experimental use develops into abuse (4).

As alcohol becomes more readily available to adolescents, alcohol use has become a normative rather than an exceptional behaviour pattern. With fewer adolescent puberty rites, alcohol use has become particularly functional to adolescents as a way of signaling the transition from childhood to adulthood (5-6).

Drinking is used to express opposition to conventional norms and values, as an entrée to peer social life, and to symbolize maturity (7). When societies fail to establish health-enhancing means of marking the transition to adulthood, alcohol use fulfils multiple psychosocial needs of adolescent development, becoming a powerfully attractive behaviour for adolescents. Adult usage confers legitimacy on alcohol use as a marker of the transition to adulthood, and greater per capita consumption results not only in increased availability of alcohol to young people, but also in stronger incentives to use alcohol through modelling and social approval.

Another alarming aspect is that earlier involvement with alcohol signals greater potential for abuse, other negative health problems, and the progression to other drugs (1, 8-10); the trend in the United States of America is for experimentation at ever younger ages (2, 3, 9). Problems of acute alcohol intoxication, resulting from a single session of over-consumption, have serious health consequences, (i.e. automobile injuries, violence and homicide, suicide) that, not surprisingly, are the leading causes of adolescent morbidity and mortality (6, 11, 12).

Recently, new preventive strategies have been developed based upon etiological research on ado-

lescent substance use and theories of adolescent development and social learning (2, 5, 6, 9, 13, 14). These programmes focus on the gateway drugs, with particular emphasis on the licit substances of tobacco and alcohol (14). Botvin et al. (5) describe these new school-based programmes as following two general models, either the social influences model or the generic skills training approach. The social influences model teaches young people specific skills for resisting the social influences promoting tobacco and alcohol use, whereas the generic skills training approach also adds training in general individual competences as a means of reducing motivations to engage in substance use. Results have been promising for both approaches (5, 15) and active involvement of peer leaders in the programme is a particularly effective component (2, 6, 9, 15-18). Peer leaders are used to create a norm that alcohol or other substance use by adolescents is deviant and unacceptable (6, 19). False normative expectations about the prevalence of substance use among youth are also corrected in these new programmes (2).

In 1985, the World Health Organization convened a group of investigators from four countries to study the efficacy of the social influences model for alcohol education. As a result of this meeting, centres in four countries — Australia, Chile, Norway and Swaziland — participated in a pilot study to delay onset and minimize involvement of alcohol use among adolescents. The four selected countries represented four continents, four languages, two developed and two developing economies, and four alcohol-related cultures. The results of a pilot study in such diverse settings were seen as particularly instructive and would enhance its potential for generalization to other countries.

### Methods

Because of the potential for expanding the choice of teaching resources available, through the use of selected adolescent leaders as teachers, the major comparison in the study was between peer-led and teacher-led instruction. Because of the association between social behaviour such as alcohol use and the school environment, schools within each country were randomly assigned to peer-led, teacher-led or control conditions. 25 schools completed the alcohol education study, including pre- and post-education assessment, and the assigned education programme — Australia (6), Chile (3), Norway (14) and Swaziland (2). All eighth-grade students in Australia (N=828), Chile (N=195) and Norway (N=1306), and all ninth-grade students in Swaziland (N=207), from selected schools, formed the study population. These schools were from middle-class or lower-class areas in each of the countries, as stipulated in the study design.

The educational programme in Australia took place in a suburban area of Perth and was coordinated by

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faculty members from Curtin University of Technology (formerly the Western Australian Institute of Technology). In Chile, the educational programme took place on the outskirts of Santiago under the direction of investigators from the University of Chile. The Norwegian educational programme took place in 8 counties that were distributed throughout the country. Alcohol- and drug-abuse consultants within each county were responsible for programme implementation, which was coordinated by investigators from the *Statens Edruskapsdirektorat* in Oslo. The education programme in Swaziland took place in Mbabane and was coordinated by investigators from the country's Department of Education. Ninth-graders were selected in Swaziland rather than eighth-graders because of the low prevalence of alcohol use among students in that country. The control school in Swaziland was removed from the study because the teachers in the control school began to teach the Alcohol Education Programme prior to the post-test. Matched data were available from 92.9% of the students in the 25 study schools and these formed the study cohort of 2 536 students.

Students in the study ranged in age from 11 to 18 years, with the following mean ages: Australia, 13.1; Chile, 14.2; Norway, 14.3; and Swaziland, 15.6. The age ranges were greater in the two developing countries. Students in Australia spoke English; in Chile they spoke Spanish; in Norway, Norwegian; and in Swaziland, both Swazi and English. Baseline alcohol use rates reflected the cultural acceptability of drinking and there were significant differences between the four countries. For recent and heavy alcohol use (in the past month and/or 5 drinks on any occasion), Australian and Chilean students reported significantly greater use than Norwegian and Swazi students. Males were significantly more likely to report alcohol use than females in all four countries. Students from two-parent families, overall, drank significantly less, although this was not the case in Chile. The age of the students in this study sample did not predict differences in alcohol-use rates.

The curriculum content was based on the theoretical model derived from social learning theory and previously-successful prevention programme based on the social influence model in the United States. The teacher-led and peer-led curricula were identical in content, although the peer-led programme utilized small-group discussions when the teacher-led programme had whole-class discussions. The programme consisted of five 50-minute sessions: four of these were held at one-week intervals; the fifth was a "booster" and review session held one month after the fourth session.

In the first session, the students discussed the social and physical consequences of alcohol use, estimated the prevalence of use in the eighth and ninth grades, and identified positive attributes of non-users. Emphasis in this session was on short-term effects of use versus non-use. The second session was devoted to changing normative expectations through an experiential fact game, feedback on alcohol use prevalence, and the examination of social situations in which alcohol use might be expected. Emphasis in this session was on the reasons for non-use and alternatives to drinking. The third session provided experience in identifying peer influences to drink and practice in refusal. Direct rehearsal of "no" techniques was emphasized. Mass media and advertising were the focus of session 4, with analysis of alcohol advertisements included. The session ended

with optional individual pledges to not drink until they were older. The fifth booster session provided a review of the four core sessions emphasizing non-alcohol places and situations, and reinforcement for remaining abstinent.

Peer leaders directed about 70% of the session content in the peer-led programme. Peer leaders volunteered (Chile and Norway) or were selected by their teachers (Australia and Swaziland). About 5 peer leaders represented each classroom of 30-35 students. The peer leaders attended a training session which provided skills in presenting information, in organizing small-group discussions, in leading role plays, and in synthesizing the information learned. Teachers were also trained in all four countries, and were presented the theoretical background for the study, an explanation of each of the programme's components, modeling of the major activities, and practice.

The Alcohol Education Survey measured alcohol use in the past 12 months, the past 30 days, and 5 drinks in a row in the past 2 weeks. An *alcohol use score* was created with a range of 2.5-16, which categorized students as never-drinkers (2.5), rarely (3.5), sometimes (5.5-10), and regular drinkers ( $\geq 10$ ) based on their responses to the multiple alcohol-use questions. These alcohol-use measures were adapted from prior published work on adolescent drinking (19). The data of matched students from all four countries were analysed by country and across countries to assess outcomes. Data from baseline drinkers and non-drinkers were analysed separately in order to test for decreases in onset and in involvement. Analysis of covariance (ANCOVA) was employed to examine post-test scores by condition, with the pre-test score as a covariate.

## Results

The post-test alcohol use score and 95% confidence intervals for all three conditions are shown in *Table 1* for pre-test non-drinkers and drinkers by gender. The post-test score shown is adjusted for baseline difference. Overall, the peer-led programme demonstrated significantly lower alcohol use scores than the teacher-led and control conditions for both non-drinkers ( $p < .0003$ ) and drinkers ( $p < .04$ ). These findings are consistent for both genders. There were no significant differences between the teacher-led and control conditions. At the country level, the same general pattern is noted (6).

## Discussion

The WHO Collaborating Study on Alcohol Education and Young People has important implications for future efforts to delay onset of alcohol use or minimize involvement with alcohol by adolescents worldwide. An important conclusion from this pilot study is that the peer-led social influences approach to adolescent alcohol education appears to be efficacious across a variety of settings, economies and cultures, and ought to be tested longitudinally in a variety of settings. Overall, students in the peer-led programme reported significantly less use of alcohol than did students in the teacher-led programme or control group, independent of whether they were drinkers or non-drinkers at baseline. The students in the peer-led condition also gained more knowledge, acquired better attitudes, and reported fewer friends' drinking at post-test (6). Even with some variation in

**TABLE 1. POST-TEST ALCOHOL USE SCORE AND CONFIDENCE INTERVALS (95%) BY GENDER AND CONDITION, \* WHO COLLABORATIVE STUDY ON ALCOHOL EDUCATION AND YOUNG PEOPLE, 1987**

**TABLEAU 1. DONNÉES POSTFORMATION ANTIALCOOL ET INTERVALLES DE CONFIANCE À 95% PAR SEXE ET PAR TYPE D'ÉDUCATION,\* ÉTUDE COLLECTIVE DE L'OMS SUR L'ÉDUCATION ANTIALCOOL ET LES JEUNES, 1987**

	Non-drinkers – Non-buveurs	
	M N = 811	F N = 843
Peer-led — Education par les pairs.....	3.19 (± .18)	3.11 (± .14)
Teacher-led — Education des enseignants.....	3.48 (± .17)	3.45 (± .15)
Control — Groupe témoin.....	3.53 (± .25)	3.44 (± .20)
	Drinkers – Buveurs	
	M N = 409	F N = 393
Peer-led — Education par les pairs.....	5.28 (± .53)	5.01 (± .45)
Teacher-led — Education des enseignants.....	5.81 (± .44)	5.79 (± .37)
Control — Groupe témoin.....	5.74 (± .5)	5.81 (± .54)

\*ANCOVA adjusted by baseline score — Analyse de covariance ajustée en fonction des données de référence.

the extent of these outcomes by country, *in no case* did either the teacher-led programme or the control group demonstrate more positive outcomes than the peer-led programme. Thus, not only does the peer-led programme appear to be generally effective in reducing adolescent alcohol use, it also did not produce detrimental effects within any of the four countries. Thus, as we look for methods that empower individuals to make changes in alcohol-use behaviour and that also promote social responsibility for global health, peer leadership provides a promising and optimistic model.

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**SUMMARY**

Alcohol use has become normative for adolescents in most developed and developing countries, with serious health implications. In response to this problem, the World Health Organization convened a group of investigators in 1985 from centres in four countries — Australia, Chile, Norway and Swaziland — to participate in a pilot study on the efficacy of the social influences approach in school-based alcohol education. The goal of the educational programme was to delay onset and minimize involvement of alcohol use among 13-14 year-old adolescents. 25 schools in the 4 countries, representing middle- and lower-class populations, were randomly

assigned to peer-led education, teacher-led education or a control condition. The programme focused on the social and environmental influences to drink alcohol, and skills to resist those influences. It consisted of 5 lessons over 2 months. Baseline and post-test data measured alcohol-use knowledge, attitudes, skills and friends' drinking patterns. Data were collected immediately prior to and 2 months following the educational programme. The data converge on the finding that peer-led education appears to be efficacious in reducing alcohol use across a variety of settings and cultures.

**RÉSUMÉ**

**Etude pilote transculturelle sur l'éducation scolaire antialcool**

Dans la plupart des pays développés et des pays en développement, la consommation d'alcool est devenue la norme pour les adolescents, ce qui a des conséquences graves pour la santé. Pour traiter ce problème, l'Organisation mondiale de la Santé a réuni en 1985 un groupe d'enquêteurs venant de

centres situés dans quatre pays, à savoir l'Australie, le Chili, la Norvège et le Swaziland, qui ont été invités à participer à une étude pilote sur l'efficacité de l'approche des influences sociales dans l'éducation scolaire antialcool. Le but de ce programme éducatif était de retarder et de minimiser le recours

à la consommation d'alcool chez les adolescents de 13-14 ans. Dans les quatre pays, 25 écoles représentant la classe moyenne et la classe inférieure de la population ont été réparties de manière aléatoire en trois groupes: un avec éducation par les pairs, un avec éducation par les enseignants et un groupe témoin. Le programme était axé sur les influences de caractère social ou environnemental qui incitaient à consommer de l'alcool et sur la capacité de résister à ces influences. Le programme comportait cinq leçons en deux mois. Les données de référence et

les données postformation ont mesuré les connaissances, les attitudes, la capacité de résistance en matière de consommation d'alcool ainsi que les habitudes des amis dans ce domaine. Les données ont été rassemblées immédiatement avant le programme d'éducation et deux mois après la fin de ce programme. Elles mènent à la conclusion que l'éducation par les pairs semble être un instrument efficace pour diminuer la consommation d'alcool dans une grande diversité de cadres et de cultures.

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