Using media in alcohol and drug interventions in nightlife: a systematic review

Goals

Drug use in nightlife is higher than in the general population which makes it a good opportunity for interventions to reduce and minimize harm from the use of illegal drugs and excessive alcohol consumption. This setting is packed with electronic media possibilities (TV, social network sites, mobile phones applications) which makes it possible to

communicate on a more personal level. A systematic review of peer-reviewed articles was conducted to determine interventions published since 2000 in the broader nightlife scene (bars, clubs, dance events, festivals...) with an active electronic media component to target their audience.

Method

SEARCH STRATEGY: beginning of October 2011. Articles dating from 2000 onward to focus on more recent media technologies. Only English articles.

SEARCH TERMS: KEYWORDS RELATED TO	
Alcohol and other drugs	alcohol OR "substance use" OR "legal High*" OR "Designer drug*" OR (drug* A
Interventions	prevent* OR interven* OR train* OR campaign* OR education OR "harm reduction
Nightlife setting	licensed premises OR nightlife OR club\$ OR disco* OR Pub OR pubs OR bar OR nightclub* OR night time OR recreat*
Electronic media	internet OR website* OR "web page*" OR online OR "social media" OR facebook television OR tv OR radio OR media OR news* OR press OR celebrit* OR sms OR "Cel* Phone*" OR "smart phone*" OR Magazine*

RESULT: 802 articles. Excluding doubles and screening title: 92 articles were hold back.

Scanning all abstracts of the 92 articles on following inclusion criteria:

- The article should be published in a peer-reviewed journal
- The intervention should be aimed at the prevention of harmful alcohol and/or drug use alongside other possible risk behaviour.
- The intervention described should include the use of electronic media (thus excluding flyers, pamphlets) and the media component should be part of the conceptual model of the intervention, thus excluding use of media in finding respondents.
- At least a part of the intervention should take place in the broader nightlife scene, as clubs, pubs, bars, festivals, raves,...

After scanning the articles, looking in specific reviews and databases and different other steps result: a total of 14 manuscripts on a nightlife related intervention on alcohol and/or drugs with an electronic media component were retrieved.

STUDY REFERENCE	INTERVENTION NAME	COUNTRY	SUBSTANCE ADDRESSED	TARGET GROUP	INTERVENTION CHARACTERISTICS	
					AIMS	ACTIONS
van Gemert et al. 2011	Don't turn a night out into a nightmare	Australia	Alcohol	Adolescents	Raise awareness of the harms and costs associated with risky drinking among young Australians.	Social marketing campaign
Saltz et al. 2010	The Safer California Universities study	USA	Alcohol	College students Licensed premises	Reduce the likelihood and incidence of student intoxication at off-campus settings. Reduce alcohol sales to minors.	Enforcement DUI – checkpoints Social host ordinances Media advocacy
Warpenius et al. 2010	Local Alcohol Policy (PAKKA)	Finland	Alcohol	Licensed premises	Reduce the serving of alcoholic beverages to intoxicated clients on licensed premises.	Enforcement Information campaign RBS training (Responsible beverage service) Policy Community mobilization Media advocacy
Saltz et al. 2009	Neighborhoods Engaging with Students project (NEST)	USA	Alcohol	College students	Reduce heavy episodic drinking and intoxication at off-campus parties.	Enforcement with social marketing advertisements and media advocacy Alternative entertainment on campu Education Neighbourhood-based conflict- resolution program
Wood et al. 2009	Common Ground: Rhodemap to safety (RMS)	USA	Alcohol	College students	Decreasing college student drinking Reduce alcohol-impaired driving Reduce the serving of alcohol to intoxicated clients.	Social marketing campaign Enforcement Other environmental management
Gripenberg et al. 2007	Stockholm against alcohol and drugs (STAD)	Sweden	Drugs	Doormen - licensed premises	Increasing the frequency with which doormen intervene in cases of obviously drug use-impaired patrons.	Community intervention Clubs against drugs network Training Policy work Enforcement PR work and media advocacy
Clapp et al. 2005	Not mentioned	USA	Alcohol	College students	Increased students' perceived risk of getting a ticket or being arrested for driving under influence (DUI) and reduce DUI.	DUI checkpoints Media coverage
Huckle et al. 2005	The Auckland Regional Community Action Project (ARCAP)	New Zealand	Alcohol	Off-licensed premises	Reduce access to alcohol from off-license premises by minors.	Social marketing campaign Monitoring Media advocacy Enforcement
Kypri et al. 2005	Think before you buy under-18s drink	New Zealand	Alcohol	Teens and parents	Increase the knowledge of adults of the risks of supplying alcohol to teenagers. Reduction in the percentage of adults who supply alcohol to teenagers for unsupervised consumption.	Social marketing campaign
Wagenaar et al. 2005	Complying with the Minimum Drinking Age	USA	Alcohol	Licensed premises Off-licensed premises	Reduce alcohol sales to minors	Training Enforcement
Wallin et al. 2003	STAD	Sweden	Alcohol	Licensed premises	Decrease violent crimes	RBS training Enforcement Community mobilization
Voas et al. 2002	Operation safe crossing (OSC)	USA	Alcohol	Youths who are crossing the borders (US/Mexican border)	Reduce the number of impaired drivers returning following an evening of binge drinking.	Enforcement Monitoring Media advocacy
Holder 2000 Roeper et al. 2000	Preventing Alcohol Trauma	USA	Alcohol	Licensed premises Off-licensed premises Community Enforcement officers	Reduce local alcohol-involved injuries and deaths. Reduce alcohol sales to minors and intoxicated persons Reduce availability of alcohol	Community mobilization RBS training Enforcement Media advocacy Policy

AND (illicit OR illegal OR legal)) tion" OR program* OR "peer support" R bars OR festival* OR rave OR Raves OR

ook OR "social network service*" OR DR "mobile app*" OR "mobile phone*" OR

Results

Social marketing campaigns

Three interventions with social marketing campaigns (advertisements) and three combine social marketing and media advocacy: (Clapp et al., 2005; Gripenberg, Wallin, & Andreasson, 2007; Saltz, Welker, Paschall, Feeney, & Fabiano, 2009). Focusing on the electronic media in the social marketing campaigns these interventions included different actions: (campus) radio advertisements (Kypri, Dean, Kirby, Harris, & Kake, 2005; van Gemert et al., 2011; Wood et al., 2009), magazine, radio interviews, media events (*Kypri et al., 2005*), television, cinema, online advertising (van Gemert et al., 2011), website (Gripenberg et al., 2007; Saltz et al., 2009) and advertising by email (Wood et al., 2009).

In general few aimed effects were seen after implementing a social marketing campaign, especially when this was the only component of the intervention. The interventions showed no significant reduction in unsupervised drinking after the brief mass media campaign 'Think before you buy under-18s drink' (Kypri et al., 2005), failed to reach the most important target groups, namely participants reporting frequent risky single occasion drinking (van Gemert et al., 2011) or showed mixed results (Wood et *al.*, *2009*). In the latter study perceptions of alcohol enforcement, alcohol access and the local alcohol environment were successfully altered, but iatrogenic effects on actual drinking behaviour were observed (Wood et al., 2009). The most widely seen campaign component were the newspaper advertisements (*Kypri et al., 2005*). The combination of media advocacy and a media campaign showed more promising effects (see media advocacy) (Clapp et al., 2005; Gripenberg et al., 2007; Saltz et al., 2009).

STUDY REFERENCE	STUDY DESIGN	SAMPLE	DATA COLLECTION METHODS	OUTCOME INDICATORS	EFFECTS
van Gemert et al. 2011	Cross-sectional behavioural survey	1072 young people (16-29 years) recruited by convenience sampling at the Melbourne Big Day Out festival	Self-completed survey	Recognition of the campaign slogan	74.% recognized the campaign. Participants reporting frequent RSOD - and thus the most important group to targe significantly lower odds of recognizing the campaign message.
Saltz et al. 2010	Randomized experimental design with control group and pretest/ posttest	Random samples of 19 791 undergraduates of 14 public universities randomly assigned to the intervention or control group	Online surveys in four consecutive fall semesters (baseline: 2003– four consecutive fall semesters until 2006)	Likelihood of intoxication: occasions in which students drank to intoxication.	Reductions in the incidence and likelihood of intoxication at off-campus parties ar No increase in intoxication appeared in other settings. Dedicated websites grew from 3 to 5 campuses over the 2 years.
Warpenius et al. 2010	Pre- and post-intervention study design with control group	94 licensed premises	Observations with pseudo- intoxicated patrons acting as if they were clearly under the influence of alcohol	Refusals to serve alcohol	Increase in refusals to serve alcohol to the actors.
Saltz et al. 2009	Quasi-experimental non- equivalent comparison group design	Random samples of 3 193 undergraduates of 3 public universities (2 intervention and 1 control site)	Online surveys in the fall 2005 and fall 2006	Alcohol consumption, alcohol-related problems, and student perception of alcohol control and prevention activities.	Decrease in prevalence of heavy episodic drinking among students (odds ratio = 0 although statistical power with three campuses was limited.
Wood et al. 2009	Quasi-experimental non- equivalent comparison group design	Random sample of full-time undergraduates (18-25 years).	Telephone surveys each fall for the intervention university (2004-2007) and a comparison campus (2005- 2007). Archived police reports for student incidents	Police reports of student incidents Survey data on alcohol use, DUI, perceptions of implemented interventions and behaviour of students.	Increases in students' awareness of formal alcohol-control efforts and perceptions environment, likelihood of apprehension for underage drinking, consequences for a driving, and responsible alcohol service practices. Decreases in the perceived likelihood of other students' negative behaviour at off- Decreases in police-reported incidents. Extensive news coverage of increased enforcement at off-campus parties.
Gripenberg et al. 2007	Pretest-posttest study design	Twenty-eight licensed premises	Observations with pseudo- intoxicated patrons acting as if they were drug use-impaired	The frequency with which doormen intervene in cases of obviously drug use— impaired patrons attempting to gain entry into licensed premises	Increase in interventions by doormen from 7.5% at baseline to 27%.
Clapp et al. 2005	Quasi-experimental non-equi- valent comparison group design	Random sample of 4832 undergraduates of two universities	Telephone surveys	Pre- and postintervention measures of self- reported DUI	Decrease in self-reported DUI (past year) (odds ratio $= 0.55$).
Huckle et al. 2005	Naturalistic case study design with pretest/posttest	Random sample of 250 premises for both surveys. Key informants from enforcement staff Documents	Purchase survey before and after intervention. Face-to-face or telephone interviews Document review Monitoring local and national media	Alcohol sales without age identification Number of news items	Decrease (14%) in sales of alcohol made without age identification. Increased enforcement strategies, including controlled purchase operations. Increased visits to off-licenses due to the intervention. Increased media coverage.
Kypri et al. 2005	et al. 2005 Quasi-experimental non- equivalent comparison group design Quasi-experimental non- equivalent comparison group and 1 control site) Random sample of 748 parents		Youth surveys at baseline and follow-up Parent surveys at baseline and follow-up	Changes in the prevalence of parent supply to their teenager (13 – 17 years) for unsupervised drinking (SUD) Changes in the prevalence of binge drinking among teenagers.	Decrease in levels of binge drinking in intervention and comparison group. Newspaper advertisements (65%) depicting youth drunkenness were the most wid components.
Wagenaar et al. 2005	enaar et al. 2005 Time-series quasi-experimental trial with a nested cohort design I 0 cohorts with a random subsample of 602 on-premises and 304 off- premises		Purchase attempts twice a week for 4.5 years	Propensity to sell alcohol to young buyers.	Mixed results: Specific deterrent effects were observed for enforcement checks, wit reduction in likelihood of sales to minors. These effects decayed entirely within 3 m establishments and to an 8.2% reduction in on-premise establishments. Television broadcasts regarding enforcement checks conducted in the community of sales to minors in off-premise establishments with this effect decreasing to zero w a broadcast. For on-premise establishments this was only marginally significant. I media variables did not appear to be acting as mediators of the intervention effect
Wallin et al. 2003	Time-series quasi-experimental design with control area	Registered data	Data on police-reported violence during the period of January 1994 to September 2000	Violent crimes	Decrease by 29% Although some policy changes have occurred in the whole of Stockholm Inner City, alcohol prevention activities have been concentrated in the intervention area where news about licensed premises was primarily focused.
Voas et al. 2002	Time-series quasi-experimental design with control area	Underage youths aged 18–20 years and young adults aged 21–30 years residing in San Diego County and registered data	Media coverage Telephone survey Monitoring border crossers Surveys Breath test Police data on crashes	Public knowledge of the OSC Number of youths returning from a night of drinking in Tijuana BACs of these returnees Had-been-drinking crashes	Participants reporting they had been to a bar in Tijuana were more likely to report a increase in enforcement. From 50% to 60% of the Tijuana bar-goers were aware of enforcement. Reduction of late-night crossers by 31.6% Decline in number of underage drinking pedestrians by 39.8% A 45.3% reduction in had-been-drinking crashes in the number of 16-20 year-old
Holder 2000	Quasi-experimental non- equivalent comparison group design, partial time-series	Not mentioned in this article	Not mentioned in this article	Indicators or counts of alcohol-involved problems at community level. Number of refusals of service to intoxicated persons Average BACs of drivers	Reduction in alcohol-involved crashes and sales to minors. Increase in responsible practices of bars and restaurants, community support and awareness of alcohol p Local media not only influenced public opinion and community leaders but also ser rod for enthusiasm and provided local staff and project participants with a sense potential for change.
Roeper et al. 2000	Quasi-experimental non- equivalent comparison group design	Drivers and registered data	Week-end police-reported traffic injury crashes, traffic crashes from hospital discharge data, roadside surveys on drivers. Document analysis Monitoring local media Breathalyzers Enforcement officers	Number of weekend night time injury crashes. Number of weekend night time injured individuals	Community training in techniques for working with local news media led to a statistic increase in coverage of alcohol issues in local newspapers and on local TV in the ecommunities over their matched comparison communities. Decrease in night time traffic injuries and the number of admissions to hospitals of accidents. Altogether there were 116 fewer injury accidents. The reduction of drinking and driving can be maintained for an extended period of more than 3½ years with a concerted community effort. Increase in enforcement coverage in newspaper articles and TV news segments. Negative correlation of percentage of drivers having a positive BAC passing throug checkpoints and extent of coverage of enforcement in the newspaper (r = -0.30, p

Media advocacy

- Nine interventions (11 articles) were find with media advocacy. Media advocacy activities included media releases in the local media (campus media, local television and radio) in all interventions. The other actions varied: media training (Holder, 2000; Huckle, Conway, Casswell, & Pledger, 2005), discussing followup media, a media launch (Huckle et al., 2005), press conferences or media events (Gripenberg et al., 2007; Voas, Tippetts, Johnson, Lange, & Baker, 2002), website (Saltz, Paschall, McGaffigan, & Nygaard, 2010), e-mails (Saltz et al., 2010), involvement of media in steering or working group (Warpenius, Holmila, & Mustonen 2010) and national media releases (television and radio) (Gripenberg et al., 2007; Warpenius et al., 2010).
- Notably, all nine interventions have implemented at least (increased) enforcement strategies. Moreover, media attention was asked for at least enforcement actions in all interventions. Overall, all interventions showed effectiveness across a number of outcomes.
- The sales of alcohol decreased in following situations: sales made without age identification (Huckle et al., 2005), sales to minors (Holder, 2000; Wagenaar, *Toomey, & Erickson, 2005)* and sales to intoxicated patrons (*Warpenius et al., 2010*). Risky drinking behaviour (Clapp et al., 2005; Roeper, Voas, Padilla Sanchez, & Esteban, 2000; Saltz et al., 2010; Saltz et al., 2009; Voas et al., 2002) and alcohol-involved crashes were reduced (Holder, 2000; Roeper et al., 2000). A reduce in violent crimes (Wallin, Norstrom & Andreasson, 2003), an increase in responsible alcohol serving practices (Holder, 2000) and a higher

awareness on alcohol problems (Holder, 2000; Voas et al., 2002) was seen. Gripenberg et al. (Gripenberg et al., 2007) found an increase in doormen interventions within attempts in entering the club by actors who were obviously impaired.

The role of media advocacy showed mostly positive results. The higher media coverage on intervention related topics was important in raising awareness on community and political level (Holder, 2000; Huckle et al., 2005; Voas et al., 2002). This higher awareness lead to behavioural changes. Especially when this media coverage was on enforcement (Clapp et al., 2005; Holder, 2000; Huckle et al., 2005; Roeper et al., 2000; Voas et al., 2002; Warpenius et al., 2010). Wallin et al. (2003) even found that most policy changes in favour of the intervention aims were to be found in the intervention area where media coverage of news about licensed premises was primarily focused. Furthermore, local media served as a lightning rod for enthusiasm and provided local staff and project participants with a sense of efficacy and the potential for change (Holder, 2000). However, the study of Wagenaar et al. (2005) showed mixed results on the included media variables (print and broadcast media). Television broadcasts regarding enforcement checks conducted in the community decreased (5%) the sales to minors in off-premise establishments with this effect decreasing to zero within two weeks after a broadcast. For on-premise establishments this was only marginally significant. In further analysis, the media variables did not appear to be acting as mediators of the intervention effect.





rget - had statistically and bars/restaurants.

= 0.75, p < .05),

ions of the alcohol r alcohol-impaired ff-campus parties.

videly seen campaign

with an immediate 17% 8 months in off-premise ty decreased (5%) the o within two weeks after t. In further analysis, the

ty, most community nere media coverage of

rt awareness of an e of the increased

ld drivers. ible alcohol serving l problems. served as a lightning se of efficacy and the

atistically significant e experimental s due to traffic

of time, in this case

ough sobriety), p < 0.05)

Discussion

Nightlife is an expanding and dynamic sector with positive outcomes for the welfare of the community and for individual development (Calafat, Juan, & *Duch, 2009*). However, previous articles have shown a higher use of drugs in these settings (Van Havere, Vanderplasschen, Broekaert, & De Bourdeaudhui, 2009; Van Havere, Vanderplasschen, Lammertyn, Broekaert, & Bellis, 2011). To prevent problems with drug use, prevention and harm reduction initiatives are necessary.

The recent communication technologies offer the possibility to interact and communicate on a more personal level. This literature review of interventions in a broader nightlife including an active electronic media component in its design concludes that the least promising actions towards effectiveness are the social marketing campaigns that are not framed in a wider intervention design. More valuable effects are seen when combining social marketing strategies with media advocacy, but also when only media advocacy is implemented in combination with other program components. Even though outcome indicators are very diverse, we find reported effectiveness for all multi-component studies that include media advocacy.

How these electronic media activities contribute to the effectiveness of the desired outcome however is still obscure and could not be established in this review. Much depends on reaching the targeted group.

Alternative social marketing strategies, like peer-based interventions, mobile phone applications or social network websites, could be more effective in reaching this atrisk group of party people.

Furthermore, it can be concluded that multi-component approaches have more positive effects, especially when law enforcement with media attention is included. However, public health workers are often reluctant to work with media because of their lack of experience. Public health workers can benefit from a media training and lessons can be learned from marketing agencies who are experienced in targeting different groups to sell their messages.

REFERENCES Calafat, A., Juan, M., & Duch, M. (2009). Preventive interventions in nightlife: a review. Adicciones, 21(4), 387-414. Clapp, J. D., Johnson, M., Voas, R. B., Lange, J. E., Shillington, A., & Russell, C. (2005). Reducing DUI among US college students: results of an environmental prevention trial. Addiction, 100(3), 327-334. doi: 10.1111/j.1360-0443.2004.00917.x

Gripenberg, J., Wallin, E., & Andreasson, S. (2007). Effects of a community-based drug use prevention program targeting licensed premises. Substance Use & Misuse, 42(12-13), 1883-1898. doi: 10.1080/10826080701532916 Holder, H. (2000). Community prevention of alcohol problems. *Addictive Behaviors*, 25(6), 843-859. Huckle, T., Conway, K., Casswell, S., & Pledger, M. (2005). Evaluation of a regional community action intervention in New Zealand to improve age checks for young people purchasing alcohol. *Health Promotion International*, 20(2), 147-155. doi: 10.1093/heapro/dah610

Kypri, K., Dean, J., Kirby, S., Harris, J., & Kake, T. (2005). Think before you buy under-18s drink': evaluation of a community alcohol intervention. *Drug and Alcohol Review*, 24(1), 13-20. doi: 10.1080/0959230500102731 Roeper, P. J., Voas, R. B., Padilla-Sanchez, L., & Esteban, R. (2000). A long-term community-wide intervention to reduce alcohol-related traffic injuries: Salinas, California. Drugs-Education Prevention and Policy, 7(1), 51-60. doi: 10.1080/713660091 Saltz, R. F., Paschall, M. J., McGaffigan, R. P., & Nygaard, P. M. O. (2010). Alcohol Risk Management in College

Settings The Safer California Universities Randomized Trial. American Journal of Preventive Medicine, 39(6), 491-499. doi: 10.1016/j.amepre.2010.08.020 Saltz, R. F., Welker, L. R., Paschall, M. J., Feeney, M. A., & Fabiano, P. M. (2009). Evaluating a Comprehensive

Campus-Community Prevention Intervention to Reduce Alcohol-Related Problems in a College Population. [Article]. Journal of Studies on Alcohol and Drugs, 21-27. van Gemert, C., Dietze, P., Gold, J., Sacks-Davis, R., Stoove, M., Vally, H., & Hellard, M. (2011). The Australian

national binge drinking campaign: campaign recognition among young people at a music festival who report risky drinking. Bmc Public Health, 11. doi: 482 10.1186/1471-2458-11-482 Van Havere, T., Vanderplasschen, W., Broekaert, E., & De Bourdeaudhui, I. (2009). The influence of age and gender on party drug use among young adults attending dance events, clubs, and rock festivals in Belgium. *Substance Use* and Misuse, 44(13), 1899-1915. doi: 10.3109/10826080902961393 Van Havere, T., Vanderplasschen, W., Lammertyn, J., Broekaert, E., & Bellis, M. (2011). Drug use and nightlife: More than just dance music. Substance Abuse Treatment Prevention and Policy, 6(18). doi: 18 10.1186/1747-597x-6-

Voas, R. B., Tippetts, A. S., Johnson, M. B., Lange, J. E., & Baker, J. (2002). Operation safe crossing: using science within a community intervention. Addiction, 97(9), 1205-1214. doi: 10.1046/j.1360-0443.2002.00183.x Wagenaar, A. C., Toomey, T. L., & Erickson, D. J. (2005). Preventing youth access to alcohol: outcomes from a multi-community time-series trial. Addiction, 100(3), 335-345. doi: 10.1111/j.1360-0443.2005.00973.x Wallin, E., Norstrom, T., & Andreasson, S. (2003). Alcohol prevention targeting licensed premises: A study of effects on violence. Journal of Studies on Alcohol, 64(2), 270-277.

Warpenius, K., Holmila, M., & Mustonen, H. (2010). Effects of a community intervention to reduce the serving of alcohol to intoxicated patrons. Addiction, 105(6), 1032-1040. doi: 10.1111/j.1360-0443.2009.02873.x Wood, M. D., DeJong, W., Fairlie, A. M., Lawson, D., Lavigne, A. M., & Cohen, F. (2009). Common Ground: An Investigation of Environmental Management Alcohol Prevention Initiatives in a College Community. [Article]. Journal of Studies on Alcohol and Drugs, 96-105.