Alcohol and violence in teenagers: an epidemiological analysis using European data
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Background
Under-age drinking and association with deviant behaviours in adolescents is a public health priority for health policies. Health promotion and health education interventions rely on good quality information. Objective To identify plausible predictors for deviant behaviours in adolescents as victims (including attempted suicide) and/or perpetrators of violence.

Design and setting
Sample of 17,235 students aged 15/16 years from 13 European countries in two consecutive surveys: 2007 and 2011; self-reported questionnaire items. Methodology and Methods Quantitative data analyses including distribution of variables; correlations and multicollinearity tests between dependent, independent and both categories of variables; ANOVA and reports of coefficient of determination (R2) with up to 11 covariates for each of the eight selected dependent variables. Confirmatory factorial analysis (CFA) showing the epidemiological model(s). Covariates are: alcohol related, immediate and extended social environment related. Multivariate logistic regression analyses were carried out with SPSS 18.0 and CFA with STATA 13.1.

Results
Two models were defined: victim of violence (3 dependent variables) and perpetrator or offender (5 variables). Both models are explained by covariates to show association with deviant behaviour. The ‘R2 change’ gives the quantified contributions of most covariates. For example, frequency of intoxication during the last 30 days gives an adjusted R2 of 1.3% which represents 50% of the overall R2 (2.6%) when a student reports being victim of vandalism; and the 8.6% contribution represents 66% of the overall R2 (12%) when a student reports ‘being in trouble with police’. Parental attitudes on drunkenness appear not to influence: attempted suicide, vandalism (destroying someone else’s belonging) and if teenager ‘was in trouble with police’.

Conclusion
Under-age drinking associates weakly as ‘single explanatory’ factor with violence in teenage populations. R2 values are low despite the fact that the models include a wide set of covariates. R2 changes show individual contributions in the models. Research in this field needs to look into better calibrated models and to improve data collection instruments. Information is needed to assist health promotion and health education policies across European countries.

Key messages
- School surveys use standardised valid and reliable instruments essential in delivering good information to health promotion and health education programmes across European cultures and countries.
- Methodological developments help improving the quality of data collection in surveys and from studies. Information needs to be interpreted in the wider societal context.