Health Evidence™

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Peer-led interventions to prevent tobacco, alcohol and/or drug use among young people aged 11-21 years: Evidence and implications for public health

Review Focus

P	Young people (age 11 to 21 years)
I	Peer-led interventions that aim to prevent tobacco, alcohol and/or drug use
C	Usual practice, no intervention or teacher, adult or professional-led intervention
O	Tobacco, alcohol, and/or drug use

Review Quality Rating:	8 (strong) *Details on the methodological quality are available [here](#).*

Considerations for Public Health Practice

Conclusions from Health Evidence™	General Implications
This systematic review and meta-analysis is based on 17 unique randomized controlled trials (RCTs); 10 RCTs related to tobacco smoking, 6 RCTs related to alcohol and 3 RCTs related to cannabis use. There are a total of 13,706 participants in the tobacco analysis, 1,699 participants in the alcohol analysis, and 976 participants in the drug (cannabis) analysis. Meta-analysis is based on small studies of low quality. **Peer-led interventions for young people 11-21 years of age are:** • Effective in **reducing** odds of weekly or monthly **tobacco smoking** (OR=0.78, 0.62-0.99, P=0.040) • Effective in **reducing** odds of **alcohol use** (OR=0.80, 0.65-0.99, P=0.036) • Effective in **reducing** odds of **cannabis use** (OR=0.70, 0.50-0.97, P=0.034) *Due to the significant heterogeneity among the included studies for each outcome, results are reported above and interpreted using more conservative results from pooled analysis of unadjusted and adjusted data (adjusted for baseline differences) using random-effects model.*	Public health should consider peer-led interventions, in which the intervention includes a substantial component of peer involvement in the delivery of the intervention, in schools to reduce tobacco smoking, alcohol use, and cannabis use among young people, 11-21 years of age. Due to the significant heterogeneity among the included studies, the use of more conservative results from the unadjusted and adjusted data using random-effects model is recommended, suggesting such interventions are effective. Public health should be cautious implementing peer-led interventions for other illicit drug use as there is currently no evidence of effectiveness for young people.

Evidence and Implications	
What's the evidence?	**Implications for practice and policy**

Peer-led intervention for tobacco use (random-effects model)
• **Pooled analysis of unadjusted data** (7 RCTs, 12,228 participants, 182 schools):
  • Peer-led interventions **do not lower** odds of weekly or less frequent smoking compared to controls (OR=0.84, 0.63-1.13, P=0.253; I^2=49%, χ^2=11.73, P=0.068)
• **Pooled analysis of adjusted data** (4 RCTs, 10,767 participants, 97 schools):
  • Peer-led interventions **lower** odds of weekly or monthly smoking compared to controls (OR=0.72, 0.57-0.90, P=0.005; I^2=0%, χ^2=2.374, P=0.433)
  • Data is adjusted for baseline differences
• **Pooled analysis of adjusted and unadjusted data** (10 RCTs, 13,706 participants, 220 schools):
  • Peer-led interventions **lower** odds of weekly or monthly smoking compared to controls (OR=0.78, 0.62-0.99, P=0.040; I^2=41%, χ^2=15.17, P=0.086)
	Peer-led intervention for tobacco use
	• Due to the significant heterogeneity among the included studies, the use of more conservative results from the pooled analysis of adjusted and unadjusted data using random-effects model is recommended.
	• Public health should consider peer-led interventions in schools to prevent tobacco smoking among young people, age 11-21 years, as there is compelling evidence that such interventions significantly reduces odds of weekly or monthly smoking.

Peer-led interventions for alcohol use (random-effects model) • **Pooled analysis of unadjusted data** (2 RCTs, 597 participants, 20 schools): • Peer-led interventions **do not lower** odds of alcohol use compared to controls (OR=1.03, 0.74-1.45, P=0.036; I^2=0%, P=0.685) • **Pooled analysis of adjusted data** (4 RCTs, 1,102 participants, 46 schools): • Peer-led interventions **lower** odds of alcohol use compared to controls (OR=0.71, 0.56-0.89, P=0.003) • Data is adjusted for baseline differences • **Pooled analysis of adjusted and unadjusted data** (6 RCTs, 1,699 participants, 66 schools + 1 university): • Peer-led interventions **lower** odds of alcohol use compared to controls (OR=0.80, 0.65-0.99, P=0.036; I^2=14.5%, χ^2=5.85, P=0.321)	**Peer-led interventions for alcohol use** • Due to the significant heterogeneity among the included studies, the use of more conservative results from the pooled analysis of adjusted and unadjusted data using random-effects model is recommended. • Public health should consider peer-led interventions in schools to prevent alcohol use among young people, age 11-21 years, as there is evidence that such interventions significantly reduces odds of alcohol use.
Peer-led interventions for drug use (random-effects model) • All studies only included cannabis use • **Pooled analysis of all unadjusted data** (1 RCT) • Peer-led interventions **do not lower** odds of cannabis use compared to controls (OR=0.79, 0.40-1.56) • **Pooled analysis of adjusted data** (2 RCTs)	**Peer-led interventions for drug use** • Due to the significant heterogeneity among the included studies, the use of more conservative results from the pooled analysis of adjusted and unadjusted data using random-effects model is recommended. • Public health may consider peer-led interventions in schools to prevent cannabis use among young people, age 11-21 years, as there is evidence

• Peer-led interventions **lower** odds of cannabis use compared to controls (OR=0.67, 0.46-0.98) • Data is adjusted for baseline differences • **Pooled analysis of adjusted and unadjusted data** (3 RCTs, 976 participants, 38 schools) • Peer-led interventions **lower** odds of cannabis use compared to controls (OR=0.70, 0.50-0.97, P=0.034; I^2=0%, χ^2=1.0, P=0.605)	that such interventions significantly reduce odds of cannabis use. The findings are based on a limited number of RCTs. • Public health should be cautious implementing peer-led interventions for other illicit drug use as there is currently no evidence of effectiveness for young people, age 11-21 years.

Legend: P – Population; I – Intervention; C – Comparison group; O – Outcomes; CI – Confidence Interval; OR – Odds Ratio; RR – Relative Risk; MD – Mean Difference
**For definitions see the healthevidence.org glossary at* http://www.healthevidence.org/glossary.aspx

Why this issue is of interest to public health:

Among Canadian youth age 15-19 years in 2013, 11% were current smokers, 60% reported past-year alcohol consumption, and 22% reported past-year cannabis use.[1] While the overall smoking rate among Canadian youth has decreased steadily, the decline has slowed in recent years.[2] Alcohol remains the most commonly used drug among Canadian youth and is associated with increased risk for lasting brain damage as youth brains are still developing.[3] Heavy drinking and drug use is associated with risk-taking behaviours, including injury, violence, risky sexual behaviour, and prolonged use may lead to liver and heart disease.[3] Early and frequent use of cannabis is linked to lower school performance, increased risk of dropping out, and can also alter youth developing brains, including memory and decision making.[4] Effective and tailored interventions are needed to reduce tobacco, alcohol, and drug use among youth and prevent substance use in adulthood. School-based interventions are a convenient and promising setting to implement such interventions.

1. Statistics Canada (2013). *Canadian Tobacco, Alcohol and Drugs Survey (CTADS): Summary of results for 2013*. Retrieved from: http://healthycanadians.gc.ca/science-research-sciences-recherches/data-donnees/ctads-ectad/summary-sommaire-2013-eng.php
2. Reid JL, Hammond D, Rynard VL, Burkhalter R. *Tobacco Use in Canada: Patterns and Trends, 2015 Edition*. Waterloo, ON: Propel Centre for Population Health Impact, University of Waterloo.
3. Healthy Canadians (2015). *The Chief Public Health Officer's Report on the State of Public Health in Canada, 2015: Alcohol Consumption in Canada*. Retrieved from: http://healthycanadians.gc.ca/publications/department-ministere/state-public-health-alcohol-2015-etat-sante-publique-alcool/index-eng.php
4. George, T., & Vaccarino, F. (Eds.). (2015). *Substance abuse in Canada: The Effects of Cannabis Use during Adolescence*. Ottawa, ON: Canadian Centre on Substance Abuse.

*Other quality reviews on this topic are available on **www.healthevidence.org**.*

Suggested citation:

This evidence summary was written to condense the work of the authors of the review referenced on page one. The intent of this summary is to provide an overview of the findings and implications of the full review. For more information on individual studies included in the review, please see the review itself.