

Alcohol- and drug-related public violence in Europe

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Abstract

This study summarizes the literature about alcohol- and drug-related public violence in Europe. The proportion of all public violent incidents linked to alcohol was about 50 percent in the UK and ranged from 26 percent to 43 percent in Germany, Austria and the Netherlands. Public violence related to drugs is much lower (1.5–18.0 percent). Relatively many public violent incidents occur in relation to nightlife (80 percent of alcohol-related incidents). Though a considerable proportion of public violence was alcohol or drug related, the actual use of such substances was rarely ascertained in perpetrators' specimens. Such analysis is a prerequisite to heavier penalize alcohol- or drug-intoxicated perpetrators of public violence. More capacity should be deployed to

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measure alcohol and drugs in the specimens of violent perpetrators by analytical-chemical tests. As a result, more accurate estimates of substance-related public violence are obtained, which will serve policy makers and police enforcement officials to take measures for securing a safer public environment and sustainable nightlife industry in the future.

Keywords

Aggression, alcohol, contextual factors, stimulants, violence

Introduction

In the past two decades the consumption of alcohol in Europe has steadily declined whereas that of illegal drugs has stabilized (EMCDDA, 2017; Shield et al., 2016). Despite the decrease in alcohol consumption in Europe, it is still considerable, with more European students reporting alcohol consumption and more intense patterns of drinking than their US peers (EMCDDA, 2017; McIlwain and Homel, 2009). The high consumption of alcohol, both at home and in public places, coincides with increased criminal violent behaviour, that is, a growing number of violent incidents in both the private and public space. For example, 30 percent of Canadian residents (aged 18–60) had experienced violent behaviour while in licensed premises (Graham et al., 2002). In addition, a recent meta-analysis showed that violence in general (that is, not specifically public violence) is related to the use of alcohol and illicit drugs with a medium effect size ($d = 0.45$) (Duke et al., 2018).

With respect to causality between alcohol use and public violence, it has been proposed that alcohol use (acute intoxication) plays a decisive role in about half of all violent crimes (Darke, 2010) by increasing the likelihood and degree of aggressive behaviour. Indeed, alcohol consumption induces disinhibition, which in turn may lead to inappropriate social behaviour, characterized by impaired decision-making, distorted perceptions of social cues, agitation and loss of respectful behaviour (Leonard, 1984). Between one-third and one-half of perpetrators had consumed alcohol prior to a violent incident; individual country estimates were USA 35 percent, South Africa 44 percent, England and Wales 45 percent and China 50 percent (WHO, 2009). However, because many people who (excessively) drink are not violent, it is tenuous to propose a causal relationship between alcohol and violence where alcohol is a necessary and sufficient cause. Though laboratory experiments have shown that alcohol-intoxicated people react more aggressively than sober people, which increases with increasing amounts of alcohol consumed (Bushman, 1997; Hoaken and Phil, 2000; Taylor and Leonard, 1983), it would be too trivial to describe violence and crime as ‘alcohol fuelled’. Alcohol use on its own is not a sufficient predictor of aggressive behaviour, considering the severe confounding and effect modification by numerous drinking, personal, and contextual variables (Graham et al., 1998; Pedersen et al., 2016).

Theoretical framework

Three useful explanatory models of drug-related crime have been described by Paul Goldstein (Goldstein, 1985): the psychopharmacological model, the economic motivation

model, and the systemic model. The psychopharmacological model proposes that the neurochemical and cognitive effects of alcohol and drugs cause criminal behaviour. The economic motivation model suggests that drug users are driven by economic factors to purchase the drug habit and this includes robbery and burglary. Finally, the systemic model suggests that the drug market is inherently violent. This violence refers to 'the traditionally aggressive patterns of interactions within the system of drug distribution and use'. The suitability of the psychopharmacological violence theory obviously depends on the type of drug, as well as on a variety of other factors (Kuhns and Clodfelter, 2009). According to Goldstein's tripartite model, the consumption of alcohol and psychostimulants that retain disinhibiting properties in particular would facilitate public violence. The relationship between illegal drug and alcohol use leading to criminal offending is a challenging issue. After highlighting some relevant issues, studies describing the relation between public violence and the consumption of alcohol and drugs will be presented and discussed.

Alcohol-related public violence

Still, alcohol is a contributing cause of aggressive behaviour and public violence. For instance, the Crime Survey for England and Wales (CSEW, 2015), a national survey, indicated that (1) more than half of violent incidents involved alcohol, (2) such alcohol-related violent incidents were more common during late-night hours (83–84 percent occurred between 10 pm and 6 am) and at the weekend when people go out (70 percent occurred between Friday night and Monday morning). In the southern part of the Netherlands, 42 percent of perpetrators of alcohol-related nightlife violence admitted that they became more aggressive under the influence of alcohol and according to some of them the offence would not have occurred if they had been sober (Spapens et al., 2001). Females who were drunk were more than five times more likely to have been involved in a physical fight during nightlife in the previous four weeks than those who were never drunk (OR for males: 1.99) (Schnitzer et al., 2010). In addition, drinking patterns shifted to increased pre-loading, where people drink excessively at home before going out, which is associated with high levels of self-reported intoxication and feelings of aggression and a 2.5-fold higher chance of getting involved in a fight in the city's nightlife (Hughes et al., 2008c; Barton and Husk, 2012).

Drugs-related public violence

It has been alleged that certain illicit substances are also associated with violent behaviour, though most authors agree that excessive alcohol consumption has a stronger relation to violence than do drugs (Russell, 1993). Experimental evidence for a causal role of drugs in violence is currently lacking (Kuhns and Clodfelter, 2009). Whereas cannabis, heroin or the 'love drug' ecstasy are unlikely to induce violent behaviour or crime (Hoaken and Stewart, 2003), stimulants (for example, (meth)amphetamine, cocaine and crack cocaine) are associated with violent behaviour (Darke et al., 2007). However, others failed to find such a relationship (Iritani et al., 2007; Martin et al., 2009) or suggested that this relationship was likely accounted for by third variable factors, such as

personality traits and environmental influences (Tomlinson et al., 2016). Across nine European cities the use of cocaine more than doubled the risk of involvement in violence among males (Schnitzer et al., 2010). Recurrent risky simultaneous methamphetamine and alcohol use was recently shown (Leslie et al., 2017) to be associated with methamphetamine-related aggression and hostility (Adjusted OR = 2.74, 95% CI 1.09–6.89). Concurrent use of alcohol and cocaine was shown to be associated with more severe forms of violence (such as physical assault, threatening with a knife or gun and use of a knife or gun) as compared with alcohol or cocaine alone (Chermack and Blow, 2002; Denison et al., 1997; Hough, 1996). As explained in Goldstein's economic motivation model (Goldstein, 1985), part of drug-related crime is acquisitive crime, including theft, forgery, burglary and prostitution (Hough, 1996; McKeganey et al., 2000).

Policy issues

Though alcohol use may not directly cause violence, alcohol contributes to violence in some people in particular circumstances. Alcohol-related public violence is of concern to academics, policy makers, policemen and law enforcement professionals, and the general public (Jayne and Valentine, 2016; Paglia and Room, 1998; Quigley et al., 2002; WHO, 2006). For instance, UK police officers claimed that 'street crime', that is, certain types of assault and public disorder offences, was largely alcohol related (up to 80 per cent). When asked to justify these assertions, they either admitted that it was just a guess or referred vaguely to 'experience' (SIRC, 2002). According to national surveys and routine police datasets, the emerging 'night-time economy' in the UK is seen as a primary location for violence (Finney, 2004; Hobbs et al., 2003; Stockwell, 2001). Therefore, the prevention of violence and alcohol-related harms in UK nightlife has gained governmental priority (HMG, 2012).

Aim of this review

Systematic studies about alcohol-related and drug-related violent incidents in the public space, especially in and around premises during nightlife, are lacking. The aim of this review is therefore to investigate the claim that a considerable part of public violence in Europe is due to the abuse of alcohol and illicit stimulant drugs by perpetrators, and to examine how abuse of these substances was established. Insight into the magnitude of substance-related violence will serve policy makers and police enforcement officials to develop a framework for securing a safer public environment and sustainable nightlife industry in the future. Despite its high prevalence, alcohol-related violence in the private space, such as intimate partner violence, is not a subject of this review because many violent incidents in the private domain are unlikely to come to police notice (Walby and Allen, 2004), which would result in an unreliable survey.

Methods

The aim of the study was to collect quantitative data about alcohol-related and drug-related public violence across Europe. Narrative or qualitative studies were excluded.

Datasets provided by international organizations (for example, the World Health Organization, the United Nations Office on Drugs and Crime and the European Monitoring Centre for Drugs and Drug Addiction) were not suitable for the present review because in these reports public violence was grouped with other types of violence. Multi-country studies that enable a direct comparison of prevalence rates of public violence between countries and nation-wide surveys were preferred for this review, but such studies are rare.

Using a systemic search, relevant data from the literature since 2007 was retrieved using MEDLINE accessed via PubMed, PsycINFO and web-based searches using Google and Google Scholar. If available, the Mesh term was preferred as the search term. The search focused on violence committed in the public space in Europe. Animal studies, single-case reports and studies about violence committed in the private domain were excluded.

The abstracts of 1563 retrieved papers (including 50 reviews) were screened for useful information. The searches in PubMed, PsycINFO yielded very few studies with quantitative data (< 10 studies). Data collection was focused on substance use by perpetrators of violence and not on substance use by victims. Most data were described in non-peer-reviewed governmental reports (see the Reference list), which were retrieved as grey literature (reports and other non-journal publications) by web-based searches using Google Scholar and Google. We used variations on applicable search terms, that is violence, aggression, nightlife violence, drunk, drugs, in the Dutch, German, French and English languages (including the specific substances). In addition, we manually cross-referenced sources and references and tried to retrieve all relevant information on all possible key indicators; strict limitations on search terms or study designs were not applied. This procedure also resulted in some relevant reports published before 2007. The studies included in this review are summarized in Table 1.

Results

Europe

In Europe, the prevalence of alcohol- and drug-related violence has not been systematically studied; only a limited number of countries have collected data on violent crimes under the influence of alcohol, and only scarce data on illegal drugs is available. In 2002, the association between the level of alcohol consumption during the previous 12 months and adverse consequences was studied among men and women (18–64 years) in an aggregate survey across seven European Member states (Ramstedt and Hope, 2003). Among men, getting involved in fights after drinking alcohol is more common in Germany (5.5 percent), the UK (7.5 percent), Finland (4.2 percent) and Ireland (11.5 percent) than in Italy (1.2 percent), France (2.0 percent) and Sweden (1.3 percent). For women, the rate was about three-fold lower (Ramstedt and Hope, 2003). A cross-sectional study performed in nine European cities found that the involvement of participants ($N = 1341$; 16–35 years) in nightlife violence in the previous 12 months ranged from 7.5 percent in Ljubljana, Slovenia, to 29.1 percent in Berlin, Germany (Schnitzer et al., 2010). Heavy drinking men (been drunk five times or more in the previous month) had

Table 1. Reports describing quantitative data about alcohol-related and drug-related violence.

Country	Number ^a	Country	Number ^a
<i>Europe</i>		<i>United Kingdom</i>	
Bellis et al., 2015	63,725	ACC, 2014	267
Ramstedt and Hope, 2003	6020	Boreham et al., 2007	8530
Schnitzer et al., 2010	1341	Budd, 2003	Statistics
		Cabinet Office, 2004	Statistics
<i>Nordic countries</i>		CPH, 2011	2302
Huhtanen and Tigerstedt, 2012	2725	Dodd et al., 2004	Statistics
Mattila et al., 2005	8135	Finney, 2004	Statistics
Moan et al., 2015	23411	Hughes et al., 2008b	380
		Hughes et al., 2008c	3003
<i>Ireland</i>		IAS, 2013	Statistics
Hope, 2005	2500	Maguire and Nettleton, 2003	Statistics
Hope, 2014	3077	Matthews and Richardson, 2005	Statistics
NACD, 2012	4843	ONS, 2017	Statistics
		Walker et al., 2009	Statistics
<i>Germany</i>		<i>The Netherlands</i>	
BKA, 2013	Statistics	Akkermans et al., 2015	Statistics
BKA, 2016	Statistics	Bruinsma et al., 2008	2444
BMI, 2016	Statistics	Ferwerda et al., 2012	38
Elsner and Laumer, 2015	Statistics	Goossens et al., 2013	3335
FRD, 2007	Statistics	Kooistra and Thijssen, 2014	Statistics
Luff, 2015	Statistics	Nabben et al., 2014	633
Müller et al., 2009	Statistics	Spapens et al., 2001	129
NMIS, 2008	Statistics		
Özsöz, 2014	Statistics		
Vitzthum, 2008	Statistics		
<i>Switzerland and Austria</i>			
BMG, 2009	Statistics		
Keller et al., 2008	214		

Note:

a. Number of participants in the survey or cross-sectional study.

at two-fold higher risk than abstainers (Schnitzer et al., 2010). The global anonymous Internet survey (Global Drug Survey) among 63,725 respondents from 21 European countries showed that 40 percent of all alcohol consumers had experienced some (physical, verbal or sexual) harm at least once in the previous year, and in 60 percent of these incidents it was caused by someone who was drunk (Bellis et al., 2015).

Nordic countries

In Sweden, about 80 percent of all violent crimes were committed by people who were under the influence of alcohol (Norstrom, 1998; Rehn et al., 2001). A large

national cohort study ($N = 162,220$) conducted between 2003 and 2011 showed that alcohol-related physical aggression was lower among women (0.7 percent) than among men (2.2 percent) and was most prevalent among low-skilled and low-income groups. A recent survey of 23,411 adults in Scotland and five Nordic countries found that in the previous year an average of 3.5 percent (1.5–5.7 percent) of the adult population was physically assaulted by someone under the influence of alcohol (Moan et al., 2015).

In a survey among 10,883 Finnish youths, almost half (45 percent) of all the violence consisted of alcohol-related violence. Of those who got involved in alcohol-related violence, 27 percent were injured, whereas this was ‘only’ 17 percent in violent incidents not related to alcohol. About 13 percent of 14-year-old victims were under the influence of alcohol when the violence incident took place; for 16- and 18-year-old victims it was 41 percent and 62 percent, respectively (Mattila et al., 2005). In 2008, almost 20 percent of Finnish young men and almost 10 percent of young women ($N = 2725$ subjects, 20–29 years) reported that they were physically threatened in the previous year by alcohol-intoxicated people (Huhtanen and Tigerstedt, 2012).

Ireland

A national survey in 2014 ($N = 3077$ adults) showed that 9 percent of the population had been involved in alcohol-related physical violence (Hope, 2014). A national study of emergency departments of Irish hospitals ($N = 2500$) on the relationship between alcohol and violence indicated that some 75 percent of the more than 2000 injuries were inflicted by a person under the influence of alcohol (Hope et al., 2005).

United Kingdom

According to the British Crime Survey of 2016 (ONS, 2017), victims believed the offender(s) was alcohol intoxicated in 40 percent of all violent incidents (an estimated 491,000 offences) and 19 percent of victims believed the offender(s) had used drugs. In Cheshire, 92 percent of all offences ($N = 2302$ offenders), including domestic violence, antisocial behaviour, disruption of public order, assault and traffic offences could be related to alcohol abuse (CPH, 2011). The most common violations were assault (40 percent), theft (10 percent) and traffic violation (10 percent). Half of those arrested for violent crimes were drunk (Dodd et al., 2004) and alcohol-intoxicated people were involved in 75 percent of all fights (Rehn et al., 2001).

A review of some 8000 detainees in 2005–6 found that 38 percent of respondents had started fighting or became violent after drinking alcohol (Boreham et al., 2007). Moreover, 58 percent of women and 72 percent of men confirmed that drinking had contributed to committing the violent offence (ACC, 2014). In the UK, 18–24-year-old ‘binge’ drinkers committed 24 percent of all violent crimes, and they were two times more violent (16 percent) than their normal drinking peers (7 percent) (Matthews and Richardson, 2005), and the risk of ‘pre-loaders’ or ‘pre-drinkers’ getting involved in a fight was 2.5 times higher than for those who did not drink alcohol before going out (Hughes et al., 2008a).

Excessive alcohol consumption was strongly associated with nightlife violence (Hughes et al., 2008b), which peaked throughout the UK at night on weekends (Finney, 2004); 41 percent of violent incidents occurring at the weekend, and 53 percent of violent incidents occurred in the evening or night (ONS, 2017). At this time of the day, approximately 70 percent of emergency department admissions were alcohol related (Cabinet Office, 2004). In England and Wales, 20 percent of all violence (Walker et al., 2009) and half of the alcohol-related violence (Budd, 2003) in the public space occurred in or around licensed premises. Of alcohol-related incidents in Cardiff at night on Fridays and Saturdays, 61 percent consisted of physical violence. More than half of violent alcohol-related incidents took place in or just outside licensed premises and 42 percent of the perpetrators had been previously arrested for violence or public order disturbance (Maguire and Nettleton, 2003). According to testimonies of crime victims in 2012 in Northern Ireland, alcohol was involved in 54 percent of public violence, in 36 percent of violence without injury and in 24 percent of serious sexual assaults (Institute of Alcohol Studies, 2013). It should be noted here that the number of incidents where the offender was under the influence of alcohol or drugs decreased over the previous decade alongside a fall in the overall level of violent crime (ONS, 2016).

Germany

In 2010, alcohol was involved in 28 percent of 135,835 solved violent crimes, especially (31 percent) in those with serious injury (BMI, 2016). Regarding violent incidents, 27 percent of all offenders were intoxicated (BKA, 2016); 20 percent of young people and half of the adolescents who had physically assaulted someone were under the influence of alcohol (FRD, 2007; NMIS, 2008). Between 2001 and 2011, the number of alcohol-related offences in Bavaria increased by 45 percent and the number of alcohol-related incidents of brutal violence and threats at night (between 1 am and 6 am) doubled (Elsner and Laumer, 2015). A similar increase in alcohol-related violence was seen in 2006 in Hamburg (Müller et al., 2009).

The multi-cross-sectional study performed in Bavaria from 2001 to 2010 focused on alcohol-related violence among young people in different age groups (Özsöz, 2014). The number of alcohol-related crimes increased from 10 percent to 17 percent of the total number of offences, and the share of alcohol-related violence increased from 26 percent to 35 percent of all violence. In 2011, nearly one-third of the violent assaults by juvenile suspects (14–17 years) were registered as alcohol related; in adolescents (18–20 years) it was as much as half. Alcohol-related violence usually took place at weekends (46 percent of the total) and at night (1 am to 6 am; 65 percent of the total) (Özsöz, 2014). In general, alcohol-related violence mainly took place on the street (47 percent), followed by semi-public spaces (31 percent; bars, pubs, public transport) and private homes (26 percent), but for young people (14–24 years) this was clearly different: street location (61 percent), entertainment venues (24 percent) and public transport (2 percent) (Özsöz, 2014).

In some German states, more than 60 percent of those resisting the maintenance of public order were under the influence of alcohol (Vitzthum, 2008). An estimated 65 percent and 31 percent of violence against police officers in Munich in 2012 was related to

alcohol or to illicit or pharmaceutical drugs, respectively (Luff, 2015). Of all suspects of offences against the German police, 68 percent were alcohol intoxicated. These offences mainly concerned mild but intentional assault (24 percent), aggravated intentional assault (6 percent) and resistance to the police (69 percent) (BKA, 2013). Only 8 percent of those who resisted the police were known as a user of hard drugs (which does not imply actual use prior to the crime) and 65 percent were alcohol intoxicated (BKA, 2013). A study from 2008 showed that drugs were detected in the blood of 192 out of 3252 (6 percent) suspects of resistance to the police; 129 of them (66 percent) tested positive for alcohol as well. The figure of 6 percent implies a rising trend, considering that this figure was 2.2 percent in 1992, 4.6 percent in 1998 and 5.9 percent in 2003. It cannot be ruled out, however, that the better test capability and capacity and higher frequency of drug testing are (at least partly) responsible for this increase (Elsner and Laumer, 2015).

Drugs are rarely involved in violent crimes in Germany; in Bavaria, only 1.5 percent of the suspects of violent crime in 2006 had used drugs (0.8 percent were juvenile and 1.8 percent were adolescent).

The Netherlands

A population survey showed that in 2014 more than 2 percent of Dutch inhabitants had been a victim of violence (Akkermans et al., 2015), which was typically committed by people younger than 25 years (12–17 years: 42 percent; 18–24 years: 27 percent) (Duijvestijn, 2004; Spapens et al., 2001), of whom 80 percent used alcohol.

Nightlife violence took place mainly in and around licensed premises, but rarely at parties and festivals (Ferwerda et al., 2012). Unlike frequently visiting clubs and bars, frequently attending a party was not predictive of experiencing violence in such premises (Goossens et al., 2013). Goossens et al. (2013) also found that in the previous year nearly a quarter of 3335 subjects who enjoyed nightlife entertainment reported to have become occasionally aggressive or agitated, almost 30 percent had been involved in a brawl, and about 5 percent had been beaten up at least once (see Figure 1). It appeared that most aggression and violent incidents were alcohol related, and men and young people (15–24 years) were more often involved than women and young adults (25–35 years), respectively (Goossens et al., 2013). Figure 1 further shows that alcohol is involved in nightlife violence and aggressive behaviour in at least 70–80 percent of incidents, ‘drugs only’ (that is, cannabis, ecstasy, amphetamine, cocaine or GHB) in less than 10 percent and the combination of alcohol and one to two drugs in 15–20 percent of cases (Goossens et al., 2013). However, it is encouraging that recent figures from the Dutch National Police indicate that the number of assaults and threats in nightlife decreased by 22 percent from more than 7500 in 2010 to 5862 in 2013 (Kooistra and Thijssen, 2014).

A study among 250 young adults showed that nearly 75 percent of the perpetrators of aggressive behaviour had consumed alcohol or drugs just before the offence – alcohol in 84 percent of cases and alcohol and drugs in 14 percent of cases (Bieleman et al., 1998). Another Dutch pilot study performed in three police districts, where the use of alcohol (assessed by police observation) and of drugs (assessed with Drugwipe® test) of 2244 violent perpetrators was registered (3 percent based on tests; 97 percent based on personal observation by policemen), showed substantial regional differences in

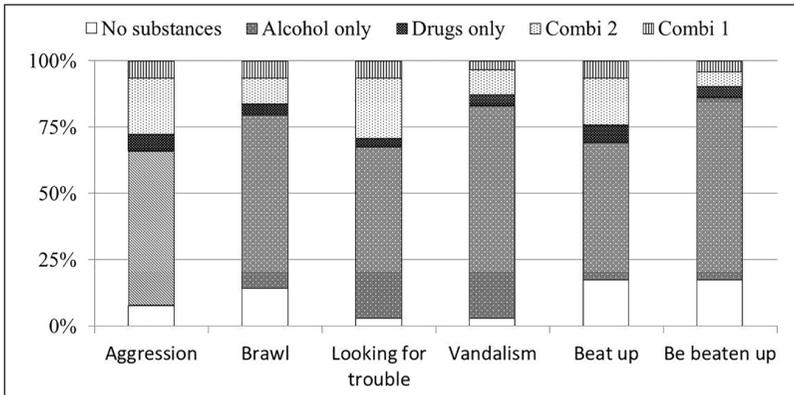


Figure 1. Nightlife violence and aggressive behaviour as reported by young Dutch visitors (15–35 years) to licensed premises and parties.

Source: Goossens et al. (2013).

Combi 1: two drugs or more (& alcohol); Combi 2: one drug & alcohol; Brawl: involved in a brawl; Beat up: beat someone else up. The drugs reported in this survey were cannabis, ecstasy, amphetamine, cocaine and GHB.

alcohol-related violence ranging from 30 percent to 49 percent of all violent incidents (Bruinsma et al., 2008). Of all suspects of violent offences (in one-third of violent incidents the victim was seriously injured) 23–42 percent had used alcohol, 2–4 percent had used drugs only, and 2 percent had used alcohol plus one or more drugs. For various reasons, only 78 (3.4 percent) of arrested violent perpetrators were tested on substance use (59 alcohol tests and 19 drug tests), which casts some doubts on the representativeness and generalizability of these findings. To compensate for the low testing rate, information about substance use based on observations by police officers was included in the study as well (Bruinsma et al., 2008). Table 2 shows that, in general (threat excepted), alcohol-related violence occurred about 10 times more often than violence related to (poly)drug use.

Interviews with 129 suspects arrested for nightlife violence (60 percent) revealed that 26 percent of the suspects showed to some extent a conduct disorder or psychiatric comorbidity (Spapens et al., 2001). In addition, of the interviewed suspects, 3 percent had used hard drugs on the evening prior to the violent incident and 19 percent indicated that they had recently used cocaine and synthetic drugs excessively, but not the night they became involved in nightlife violence. Based on this observation, it was concluded that drugs, often in association with psychiatric comorbidity, may be considered as a major risk factor in relation to nightlife violence (Spapens et al., 2001). Nonetheless, with an involvement of drug use of only 3 percent, the high prevalence of nightlife violence cannot be attributed to these substances. Because in the Netherlands drugs, such as cocaine, ecstasy and amphetamine, are frequently (89–94 percent) used simultaneously with alcohol (Nabben et al., 2014), it is likely that alcohol is the primary ‘suspect’ in the drug-using violence perpetrators.

Table 2. Number of violent incidents per type of substance use in police district IJsseland, The Netherlands (513,000 inhabitants), April–October 2007.

Offence	Violent incidents			
	Total number	Alcohol related	Drug related ^a	Polydrug use related ^b
Assault	679	187	16 (9%)	16 (9%)
Vandalism	325	100	6 (6%)	5 (5%)
Threat	307	39	10 (25%)	7 (18%)
Sexual offence	74	12	1 (8%)	1 (8%)
Disturbance of public order	59	37	2 (5%)	3 (8%)
Overt violence	21	5	1 (20%)	0 (–)
Street robbery	10	1	0 (–)	0 (–)

Source: Bruinsma et al. (2008).

Notes:

a. Drug type not further specified; the drug test used was Drugwipe®, which can detect cannabis amphetamine, methamphetamine, ecstasy, cocaine/crack and opiates. Percent of alcohol-related incidents in parentheses.

b. Alcohol plus one or more drugs. Percent of alcohol-related incidents in parentheses.

Switzerland and Austria

In the canton of Bern, Switzerland, an average of 40 percent of all violent crimes were alcohol related; the involvement of alcohol was highest (60 percent) in disturbance of public order, physical violence, extortion, robbery and domestic violence (Keller et al., 2008). In Austria, alcohol was involved in 34 percent of cases of physical violence and in 16 percent of cases of disruption of public order (BMG, 2009).

Violence related to simultaneous use of alcohol and drugs

Except for two studies, public violence related to the simultaneous use of alcohol and drug(s) has not been investigated. One study (Morley et al., 2015) showed that violent behaviour is associated ($r = 0.45$; 95% CI: 0.44–0.47) with polydrug use, that is, use of more than one drug over time prior to a violent act (note that polydrug use may reflect the use of different drugs over time one after the other and not necessarily their simultaneous use). More informative are the results obtained by Zhao et al. (2015) in a sample of clients in substance abuse treatment for alcohol or cocaine, who self-reported an injury ($N = 193$) or an aggressive incident ($N = 224$) in the previous year due to the use of either alcohol, cocaine or both substances simultaneously within 6 hours prior to the incident. The relative risk (RR) was significantly higher for alcohol use with respect to injury and aggression: $RR = 2.41$ (95% CI: 1.53–3.79) and $RR = 2.92$ (95% CI: 1.74–4.91), respectively. For cocaine use, similar findings were observed with respect to injury and aggression: $RR = 1.94$ (95% CI: 1.15–3.26) and $RR = 3.28$ (95% CI: 1.82–5.91), respectively. The RR for simultaneous use of cocaine and alcohol within 6 hours before the incident was higher than for the use of either of the two substances alone with respect

to injury and similar for aggression: RR = 3.35 (95% CI: 2.19–5.13) and RR = 3.18 (95% CI: 1.74–5.82), respectively. However, the RRs of simultaneous use within a 3 hour period prior to the incident were considerably higher for both injury and aggression: RR = 5.12 (95% CI: 2.96–8.86) and RR = 16.09 (95% CI: 9.43–27.46), respectively.

Summary

This study focused on the prevalence of public violence related to the use of alcohol and/or stimulant drugs with the aim of investigating the claim that the use of alcohol and/or stimulant drugs is responsible for a considerable part of public violence. An abundance of data shows that violent acts are clearly associated with alcohol use. Despite the study limitations, the comparisons generally show that the proportion of all violent incidents in the public space linked to alcohol use was about 50 percent in the UK, and ranged from 26 percent to 43 percent in Germany, Austria and the Netherlands. Relative to alcohol, the proportion of drug-related violence in Europe is low: 18 percent of all violent incidents in the UK, 3 percent in the Netherlands, and 1.5 percent in Germany. However, underreporting of drug-related violence cannot be excluded owing to the lack of systemic research performed on this topic. At the same time, the few data available on polydrug-related violence indicate that the impact of drugs is 6–10 times lower than that of alcohol. Of specific concern is violence in the night-time economy related to substance use. In the Netherlands and the UK, two-thirds of all public violence occurs in or around licensed premises, of which some 80 percent was related to alcohol and 10 percent to illicit drugs. No relevant reports written in the French language were retrieved.

Discussion and conclusion

The claim that a considerable part of all violence in town and city centres is ‘related’ to alcohol consumption is probably correct. However, it is important to note that actual substance use prior to the violent offence was rarely assessed by chemical analysis of a perpetrator’s specimen. In most cases, the evidence for substance use prior to the violent incident was anecdotal or subjective. For alcohol use such subjective evidence may be credible because serious drunkenness can generally be detected relatively easy via smell, flushed skin, poor muscle coordination and/or impaired speech. Moreover, alcohol tests are widely available to ascertain alcohol use in cases of doubt. In contrast, the physiological signs of drug use are much less clear. For a variety of reasons, such as technical complexity and insufficient budgets and capacity, drug use by violent perpetrators is rarely established via drug testing. In police reports, suspects of drug-related violence were therefore mostly described as ‘known drug user’ or ‘drugs have presumably been used’ and this information should be interpreted with caution, certainly when it has to serve as legal evidence to heavier penalize violent perpetrators.

From the presented data it can be deduced that public violence related to alcohol does not fit into economically motivated or systemic violence, because it is a freely available substance; that is, there are no violent black market sales. No substantial information was found for economically motivated or systemic drug-related public violence.

Alcohol-related violence can be reduced by implementing a variety of regulatory measures, including those aimed at reducing alcohol consumption (WHO, 2006). For instance, the provision of door-staff in Torquay (UK) with breathalysers to support them to prevent intoxicated individuals from entering the premises to consume alcohol resulted in a drop in the number of incidents of violence against the person by 39 percent (Boyd et al., 2018). Others have proposed restricting opening hours to reduce alcohol-related violence in nightlife (Wilkinson et al., 2016) and to reduce sales of alcohol to apparently intoxicated patrons in licensed premises (Quigg et al., 2018). However, with respect to public violence, no unambiguous results have been obtained by using this approach (Sanchez-Ramirez and Voaklander, 2018; Tesch and Hohendorf, 2018).

Following Australia in 2014, the Dutch parliament agreed in 2016 on a legal measure to enable heavier punishment of violence perpetrators if they had committed their crime under the influence of alcohol or illegal substances. By Dutch law, violent perpetrators are now obliged to donate specimens (exhalation air, saliva, blood) to allow analytical assay of substances used by the perpetrator in the hours before the offence. The analytical results (used: yes/no) will then serve as legal evidence to impose a higher penalty for the offence. The aim of this measure is to facilitate legal justice. However, three issues put a substantial obstacle in the way of this objective.

First, for violence, no established threshold level is available, comparable to the alcohol limit for driving under the influence. In experimental human aggression studies, blood alcohol concentration showed a complex dose–response relationship, with increasing aggression when alcohol blood levels were rising, but the reverse when blood levels declined (Chermack and Giancola, 1997), whereas for stimulants only one controlled experiment has shown that a high oral dose of cocaine (2mg/kg) induced more aggression than 1mg/kg or a placebo (Licata et al., 1993). Therefore, the dose-relationship between substance use and violence remains unclear.

Second, in contrast to the relationship between alcohol and driving capabilities, the alcohol and drug concentration threshold for violence varies hugely across individuals. Despite large numbers of people consuming alcohol in urban public spaces and commercial venues, levels of violence and disorder are relatively low (Jayne and Valentine, 2016), indicating that many subjects who have (heavily) used alcohol or drugs refrain from violent or aggressive acts. In other words, most people who consume alcohol (or drugs) do not become or will never become violent. Only a small fraction of alcohol or drug consumers become violent perpetrators and this is probably linked to the presence of either personal or environmental contextual factors (Hoaken and Stewart, 2003; Kuhns and Clodfelter, 2009; Snowden, 2015) that can predispose, provoke or facilitate violent behaviour (see CDC, 2016; Lipsey and Derzon, 1998; Losel and Farrington, 2012; Resnick et al., 2004; Snowden, 2015; White et al., 2013). It thus appears that substances such as alcohol and (stimulant) drugs may elicit violence predominantly in socially deprived or socially derailed subjects; that is, it is the combination of contextual factors and substance use rather than the consumption of alcohol or drugs per se that determines whether violence is elicited.

Third, from a legal point of view, one may dispute whether substance-intoxicated violent perpetrators should be punished more heavily or more mildly. The latter is based on the presumption that a person is not legally responsible when intoxicated.

In conclusion, it is highly probable that a considerable part of public violence is related to alcohol and less so to drugs, although actual substance use prior to the violent offence was assessed only occasionally by chemical analysis of a perpetrator's specimen. More capacity should be deployed to ascertain by analytical-chemical tests the actual use of alcohol and drugs in violent perpetrators. This will serve to clarify the relationship between substance use and violence. Moreover, it is a legal prerequisite when violent perpetrators are to be penalized more heavily when they have committed their offence under the influence of alcohol or drugs. It is further emphasized that personal and contextual factors may lower the threshold for substance-related violence. Overall, awareness and knowledge of the magnitude of substance-related violence across Europe enable the development of a framework for securing a safer public environment and a sustainable nightlife industry in the future. With respect to policy measures to attain the latter goal, one may – in addition to campaigns to encourage responsible use of substances (including alcohol) – consider the following measures: (a) stricter (that is, higher) age limits for selling alcohol and other substances, (b) limiting the sale of substances or restricting sales to only low-alcohol beverages in crowded places, (c) restricting the opening hours of nightlife premises, and (d) increasing surveillance via CCTV in or around premises where alcohol is used.

Strengths and limitations

This review has both strengths and limitations. The major strength is the use of both published peer-reviewed publications and reports from the grey literature, thus representing a broad and in-depth coverage of the available data. At the same time, the main limitation of this review is the wide variety of research methods and strategies that were used in the selected studies to acquire quantitative data about alcohol-related and drug-related public violence. This lack of methodological uniformity makes it very difficult to perform valid comparisons of prevalence data across the European countries. Moreover, actual assessment of substance use was seldom performed and was often based on subjective observations by policemen or participants in the survey. Finally, in the majority of European countries no relevant data could be retrieved. This limitation should be taken into account in drawing conclusions.

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References

ACC (Alcohol | Crime Commission) (2014) *The Alcohol and Crime Commission Report*. London: Addaction. URL (accessed 31 January 2019): https://www.basw.co.uk/system/files/resources/basw_125144-5_0.pdf.

- Akkermans M, Kloosterman R, Knoops K, Linden G and Moons E (2015) *Veiligheidsmonitor 2014*. The Hague: Centraal Bureau voor de Statistiek (CBS). URL (accessed 31 January 2019): download.cbs.nl/pdf/veiligheidsmonitor-2014.pdf.
- Barton A and Husk K (2012) Controlling pre-loaders: Alcohol related violence in an English night time economy. *Drugs and Alcohol Today* 12: 89–97.
- Bellis MA, Quigg Z, Hughes K, Ashton K, Ferris J and Winstock A (2015) Harms from other people's drinking: An international survey of their occurrence, impacts on feeling safe and legislation relating to their control. *British Medical Journal Open* 5: e010112.
- Bieleman B, Maarsingh H, Meijer G and ten Den C (1998) Aangeschoten wild: onderzoek naar jongeren, alcohol, drugs en agressie tijdens het uitgaan. Groningen: Intraval. URL (accessed 31 January 2019): <http://www.intraval.nl/nl/d/d04.html>.
- BKA (Bundeskriminalamt) (2013) Gewalt gegen Polizeivollzugsbeamten/-beamtinnen. Lagebild 2012. Stand: 31.07.13. Wiesbaden. URL (accessed 31 January 2019): <http://tinyurl.com/jp2pn78>.
- BKA (Bundeskriminalamt) (2016) *Bericht zur Polizeilichen Kriminalstatistik 2016* [Police Crime Statistics 2016]. Berlin: Bundesministerium des Innern. URL (accessed 31 January 2019): <http://tinyurl.com/y748s8mm>.
- BMG (Bundesministerium für Gesundheit) (2009) *Handbuch Alkohol – Österreich. Zahlen. Daten. Fakten. Trends*. Vienna: Bundesministerium für Gesundheit. URL (accessed 1 February 2019): <http://tinyurl.com/gsbem3>.
- BMI (Bundesministerium des Innern) (2016) *Polizeiliche Kriminalstatistik 2015*. Berlin: Bundesministerium des Innern. URL (accessed 31 January 2019): <https://www.bmi.bund.de/SharedDocs/downloads/DE/publikationen/themen/sicherheit/pks-2015.html>.
- Boreham R, Cronberg A, Dollin L and Pudney S (2007) *The Arrestee Survey 2003 – 2006, 2nd edition*. Home Office Statistical Bulletin. URL (accessed 31 January 2019): <http://tinyurl.com/zxd7ozt>.
- Boyd KA, Farrimond HR and Ralph N (2018) The impact of breathalysers on violence and attitudes in the night-time economy. *European Journal of Criminology* 15: 609–631.
- Bruinsma M, Balogh L and de Muijnck J (2008) Geweld onder invloed. Evaluatie van een nieuwe werkwijze van de politie gericht op versterking van de informatiepositie ten aanzien van alcohol- en drugsgebruik door geweldplegers. IVA, Universiteit Tilburg. URL (accessed 31 January 2019): <https://www.wodc.nl/onderzoeksdatabase/registratie-door-de-politie-van-alcohol-en-harddrugs.aspx>.
- Budd T (2003) Alcohol-related assault: Findings from the British Crime Survey. Home Office Online Report 35/03. London: Home Office.
- Bushman BJ (1997) Effects of alcohol on human aggression. Validity of proposed explanations. *Recent Developments in Alcoholism* 13: 227–243.
- Cabinet Office (2004) *Alcohol Harm Reduction Strategy for England*. London: Prime Minister's Strategy Unit. URL (accessed 31 January 2019): <http://www.ave.ee/download/Alcohol%20England.pdf>.
- CDC (Centers for Disease Control and Prevention) (2016) National Center for Injury Prevention and Control, Division of Violence Prevention. Youth violence: risk and protective factors. URL (accessed 31 January 2019): <http://www.cdc.gov/violenceprevention/youthviolence/riskprotectivefactors.html>.
- Chermack ST and Blow FC (2002) Violence among individuals in substance abuse treatment: The role of alcohol and cocaine consumption. *Drug and Alcohol Dependence* 66: 29–37.
- Chermack ST and Giancola PR (1997) The relation between alcohol and aggression: An integrated biopsychosocial conceptualization. *Clinical Psychology Review* 17: 621–649.

- CSEW (Crime Survey for England and Wales) (2015) 5 facts about alcohol-related violence. Office for National Statistics. URL (accessed 31 January 2019): <http://www.ons.gov.uk/ons/rel/crime-stats/crime-statistics/focus-on-violent-crime-and-sexual-offences-2013-14/sty-facts-about-alcohol-related-violence.html>.
- Darke S (2010) The toxicology of homicide offenders and victims: A review. *Drug and Alcohol Review* 29: 202–215.
- Darke S, Kaye S, McKetin R and Duflou J (2007) Physical and psychological harms of psychostimulant use. NDARC Technical Report No. 286. Sydney, Australia.
- Denison ME, Paredes A and Booth JB (1997) Alcohol and cocaine interactions and aggressive behaviors. *Recent Developments in Alcoholism* 13: 283–303.
- Dodd T, Nicholas D, Povey D and Walker A (2004) *Crime in England and Wales 2003/2004*. Supplementary tables: nature of burglary, vehicle and violent crime. Home Office Statistical Bulletin, London. URL (accessed 31 January 2019): <http://tinyurl.com/zszzrkc>.
- Duijvestijn HH (2004) *Uitgaansgeweld: oorzaken en preventie*. Stichting Maatschappij en Onderneming. The Hague, The Netherlands.
- Duke AA, Smith KMZ, Oberleiter LMS, Westphal A and McKee SA (2018) Alcohol, drugs, and violence: A meta-meta-analysis. *Psychology of Violence* 8: 238–249.
- Elsner E and Laumer M (2015) *Gewalt gegen Polizeibeamte in Bayern*. München, Bayerisches Landeskriminalamt. URL (accessed 31 January 2019): <https://www.polizei.bayern.de/content/4/3/7/gewapolvollversion06052015.pdf>.
- EMCDDA (European Monitoring Centre for Drugs and Drug Addiction) (2017) *European Drug Report 2017: Trends and Developments*. Luxembourg: Publications Office of the European Union. URL (accessed 31 January 2019): <http://www.emcdda.europa.eu/publications/edr/trends-developments/2017>.
- Ferwerda H, van Hasselt N, van Ham T and Voorham L (2012) *De Juiste Snaar. Professionals met een publieke taak en de omgang met overlast, agressie en geweld als gevolg van alcohol en/of drugsgebruik*. Arnhem: Bureau Beke. URL (accessed 31 January 2019): <https://repository.tudelft.nl/view/wodc/uuid:d2f9be8d-7901-4bbc-b69e-d6117153a526>.
- Finney A (2004) Violence in the night-time economy: Key findings from the research. Findings 214. Home Office, London. URL (accessed 31 January 2019): <http://tinyurl.com/hzeurel>.
- FRD (Federal Republic of Germany) (2007) *Bund-Länder-AG. 'Entwicklung der Gewaltkriminalität junger Menschen mit einem Schwerpunkt auf städtischen Ballungsräumen. Bericht zur IMK-Herbstsitzung 2007*. URL (accessed 31 January 2019): https://www.innenministerkonferenz.de/IMK/DE/termine/to-beschluesse/07-12-07/07-12-07-Bericht%20zu%20TOP%2016.pdf?__blob=publicationFile&v=2.
- Goldstein P (1985) The drugs/violence nexus: A tripartite conceptual framework. *Journal of Drug Issues* 15: 493–506.
- Goossens FX, Frijns T, van Hasselt NE and van Laar MW (2013) *Het Grote Uitgaansonderzoek 2013. Uitgaanspatronen, middelengebruik en risicogedrag onder uitgaande jongeren en jongvolwassenen*. Utrecht: Trimbos. URL (accessed 31 January 2019): <https://www.jellinek.nl/wp-content/uploads/2015/12/Het-Grote-Uitgaansonderzoek-2013.pdf>.
- Graham K, Leonard KE, Room R, Wild TC, Pihl RO, Bois C and Single E (1998) Current directions in research on understanding and preventing intoxicated aggression. *Addiction* 93: 659–676.
- Graham K, Wells S and Jolley J (2002) The social context of physical aggression among adults. *Journal of Interpersonal Violence* 17: 64–83.
- Harkins C, Morleo M and Cook PA (2011) Evaluation of the use of Alcohol Treatment Requirements and Alcohol Activity Requirements for offenders in Cheshire. Cheshire Probation and Centre for Public Health, Liverpool John Moores University. URL (accessed 31 January 2019):

- <http://www.champspublichealth.com/writedir/dd97AAR%20ATR%20Evaluation%20-%20final%20report.pdf>.
- HMG (HM Government) (2012) *The Government's Alcohol Strategy*. Cm 8336. London: HMSO. URL (accessed 31 January 2019): https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/224075/alcohol-strategy.pdf.
- Hoaken PN and Phil RO (2000) The effects of alcohol intoxication on aggressive responses in men and women. *Journal of Studies on Alcohol* 35: 471–477.
- Hoaken PN and Stewart SH (2003) Drugs of abuse and the elicitation of human aggressive behavior. *Addictive Behaviors* 28: 1533–1554.
- Hobbs R, Hadfield P, Lister S and Winlow S (2003) *Bouncers: Violence and Governance in the Night-time Economy*. Oxford: Oxford University Press.
- Hope A (2014) *Alcohol's Harm to Others in Ireland*. Dublin: Health Service Executive. URL (accessed 31 January 2019): <http://www.drugs.ie/resourcesfiles/ResearchDocs/Ireland/2014/ah2oreport.pdf>.
- Hope A, Gill A, Costello G, Sheehan J, Brazil E and Reid V (2005) *Alcohol and Injuries in the Accident and Emergency Department: A National Perspective*. Dublin: Health Promotion Unit, Department of Health and Children. URL (accessed 31 January 2019): http://www.drugs.ie/resourcesfiles/research/2005/DOHC_alcohol_and_injuries.pdf.
- Hough M (1996) *Drugs Misuse and the Criminal Justice System: A Review of the Literature*, London: Home Office Drugs Prevention Initiative Paper no. 15. URL (accessed 31 January 2019): <http://www.dldocs.stir.ac.uk/documents/houghdrugscrime.pdf>.
- Hughes K, Anderson Z, Morleo M and Bellis MA (2008a) Alcohol, nightlife and violence: The relative contributions of drinking before and during nights out to negative health and criminal justice outcomes. *Addiction* 103: 60–65.
- Hughes K, Bellis MA, Calafat A, Juan M, Schnitzer S and Anderson Z (2008b) Predictors of violence in young tourists: A comparative study of British, German and Spanish holidaymakers. *European Journal of Public Health* 18: 569–574.
- Hughes K, Anderson Z, Morleo M and Bellis MA (2008c) Alcohol, nightlife and violence: The relative contributions of drinking before and during nights out to negative health and criminal justice outcomes. *Addiction* 103: 60–65.
- Huhtanen P and Tigerstedt C (2012) Women and young adults suffer most from other people's drinking. *Drug and Alcohol Review* 31: 841–856.
- Institute of Alcohol Studies (2013) UK alcohol-related crime statistics. URL (accessed 1 February 2019): <http://www.ias.org.uk/Alcohol-knowledge-centre/Crime-and-social-impacts/Factsheets/UK-alcohol-related-crime-statistics.aspx>.
- Iritani BJ, Hallfors DD and Bauer DJ (2007) Crystal methamphetamine use among young adults in the USA. *Addiction* 102: 1102–1113.
- Jayne M and Valentine G (2016) Alcohol-related violence and disorder: New critical perspectives. *Progress in Human Geography* 40: 67–87.
- Keller L, Giger P, Haag C, Ming W and Oswald ME (2008) Alkohol und Gewalt: Eine Online-Befragung der Polizeiangehörigen im Kanton Bern. Universität Bern.
- Kooistra S and Thijssen W (2014) Uitgaansgeweld neemt af mede dankzij inzet horeca. *Volkskrant Magazine*, 22 January. URL (accessed 31 January 2019): <http://www.volkskrant.nl/magazine/uitgaansgeweld-neemt-af-mede-dankzij-inzet-horeca~a3581714/>.
- Kuhns JB and Clodfelter TA (2009) Illicit drug-related psychopharmacological violence: The current understanding within a causal context. *Aggression and Violent Behavior* 14: 69–78.
- Leonard KE (1984) Alcohol consumption and escalatory aggression in intoxicated and sober dyads. *Journal of Studies on Alcohol and Drugs* 45: 75–80.

- Leslie EM, Smirnov A, Cherney A, Wells H, Legosz M, Kemp R and Najman JM (2017) Simultaneous use of alcohol with methamphetamine but not ecstasy linked with aggression among young adult stimulant users. *Addictive Behaviors* 70: 27–34.
- Licata A, Taylor S, Berman M and Cranston J (1993) Effects of cocaine on human aggression. *Pharmacology Biochemistry & Behavior* 45: 549–552.
- Lipsey M and Derzon J (1998) Predictors of serious delinquency in adolescence and early adulthood: A synthesis of longitudinal research. In: Loeber R and Farrington DP (eds) *Serious and Violent Juvenile Offenders: Risk Factors and Successful Interventions*. Thousand Oaks, CA: SAGE, 86–105.
- Losel F and Farrington DP (2012) Direct protective and buffering protective factors in the development of youth violence. *American Journal of Preventive Medicine* 43: S8–S23.
- Luff J (2015) *Gewalt: Mehr oder weniger. Zur Quantität, Qualität und Bewertung in Bayern registrierter Körperverletzungen im Längsschnitt*. München: Bayerisches Landeskriminalamt. URL (accessed 31 January 2019): <http://tinyurl.com/z2eowwj>.
- McIlwain G and Homel R (2009) *Sustaining a Reduction of Alcohol-Related Harms in the Licensed Environment: A Practical Experiment to Generate New Evidence*. Brisbane, Australia: Key Centre for Ethics, Law, Justice and Governance, Griffith University. URL (accessed 31 January 2019): <http://hdl.handle.net/10072/29588>.
- McKeganey N, Connelly C, Knepil J, Norrie J and Reid L (2000) *Interviewing and Drug Testing of Arrestees in Scotland: A Pilot of the Arrestee Drug Abuse Monitoring (ADAM) Methodology*. Edinburgh: Scottish Executive Central Research Unit. URL (accessed 31 January 2019): <http://www.gov.scot/Publications/2000/07/fa87fd94-22bc-4f95-826f-cc8ab786b182>.
- Maguire M and Nettleton H (2003) *Reducing Alcohol-related Violence and Disorder: An Evaluation of the 'TASC' Project*. Home Office Research Study 265. London: Home Office Research, Development and Statistics Directorate. URL (accessed 31 January 2019): <http://tinyurl.com/hvr8jfo>.
- Martin I, Palepu A, Wood E, Li K, Montaner J and Kerr T (2009) Violence among street-involved youth: The role of methamphetamine. *European Addiction Research* 15: 32–38.
- Matthews S and Richardson A (2005) Findings from the 2003 Offending, Crime and Justice Survey: Alcohol-related crime and disorder. Findings 261. Home Office, London. URL (accessed 31 January 2019): <https://webarchive.nationalarchives.gov.uk/20110218135934/http://rds.homeoffice.gov.uk/rds/pdfs05/r261.pdf>.
- Mattila VM, Parkkari J, Lintonen T, Kannus P and Rimpela A (2005) Occurrence of violence and violence-related injuries among 12–18 year-old Finns. *Scandinavian Journal of Public Health* 33: 307–313.
- Moan IS, Storvoll EE, Sundin E, Lund IO, Bloomfield K, Hope A, Ramstedt M, Huhtanen P and Kristjansson S (2015) Experienced harm from other people's drinking: A comparison of Northern European countries. *Substance Abuse* 9: 45–57.
- Moore TM, Stuart GL, Meehan JC, Rhatigan DL, Hellmuth JC and Keen SM (2008) Drug abuse and aggression between intimate partners: A meta-analytic review. *Clinical Psychology Review* 28: 247–274.
- Morley KI, Lynskey MT, Moran P, Borschmann R and Winstock AR (2015) Polysubstance use, mental health and high-risk behaviours: Results from the 2012 Global Drug Survey. *Drug and Alcohol Review* 34: 427–437.
- Müller R, Groeneveld T and Preuss A (2009) *Phänomenologie der gefährlichen und schweren Körperverletzung im öffentlichen Raum*. Landeskriminalamt Hamburg. URL (accessed 31 January 2019): <http://tinyurl.com/jvd2svh>.

- Nabben T, Benschop A and Korf DJ (2014) *Antenne 2013. Trends in alcohol, tabak en drugs bij jonge Amsterdammers*. Amsterdam: Rozenberg Publishers. URL (accessed 31 January 2019): <https://www.jellinek.nl/wp-content/uploads/2014/07/Antenne-2013.pdf>.
- NMIS (Niedersächsisches Ministerium für Inneres und Sport (2008) Polizeiliche Kriminalstatistik 2007. URL (accessed 31 January 2019): http://www.mi.niedersachsen.de/portal/live.php?navigation_id=14797&article_id=62176&psmand=33.
- Norstrom T (1998) Effects on criminal violence of different beverage types and private and public drinking. *Addiction* 93: 689–699.
- ONS (Office for National Statistics) (2016) Compendium: Chapter 1: Overview of violent crime and sexual offences. *Findings from analyses based on the year ending March 2015 Crime Survey for England and Wales and crimes recorded by the police covering different aspects of violent crime*. URL (accessed 31 January 2019): <http://tinyurl.com/hw2utqb>.
- ONS (Office for National Statistics) (2017) Overview of violent crime and sexual offences. URL (accessed 31 January 2019): <http://tinyurl.com/y77rtldr>.
- Özsöz F (2014) *Gewaltdelikte unter Alkoholeinfluss bei jungen Menschen in Bayern*. München: Bayerisches Landeskriminalamt. URL (accessed 31 January 2019): https://www.polizei.bayern.de/content/4/3/7/25_alkohol_gewalt.pdf.
- Paglia A and Room R (1998) Alcohol and aggression: General population views about causation and responsibility. *Journal of Substance Abuse* 10: 199–216.
- Pedersen W, Copes H and Sandberg S (2016) Alcohol and violence in nightlife and party settings: A qualitative study. *Drug and Alcohol Review* 35: 557–563.
- Quigg Z, Hughes K, Butler N, Ford K, Canning I and Bellis MA (2018) Drink less enjoy more: Effects of a multi-component intervention on improving adherence to, and knowledge of, alcohol legislation in a UK nightlife setting. *Addiction* 113: 1420–1429.
- Quigley BM, Corbett AB and Tedeschi JT (2002) Desired image of power, alcohol expectancies, and alcohol-related aggression. *Psychology of Addictive Behaviors* 16: 318–324.
- Ramstedt M and Hope A (2003) The Irish drinking habits of 2002: Drinking and drinking-related harm, a European comparison. Department of Health and Children, Dublin. URL (accessed 31 January 2019): <http://www.drugsandalcohol.ie/5841/1/2396-2528.pdf>.
- Rehn N, Room R and Edwards G (2001) *Alcohol in the European Region: Consumption, Harm and Policies*. Copenhagen: WHO Europe. URL (accessed 31 January 2019): http://www.euro.who.int/_data/assets/pdf_file/0003/160680/e96457.pdf.
- Resnick MD, Ireland M and Borowsky I (2004) Youth violence perpetration: What protects? What predicts? Findings from the National Longitudinal Study of Adolescent Health. *Journal of Adolescent Health* 35: 424–510.
- Russell J (1993) *Alcohol and Crime: Proceedings of a Mental Health Foundation Conference*. London: Mental Health Foundation.
- Sanchez-Ramirez DC and Voaklander D (2018) The impact of policies regulating alcohol trading hours and days on specific alcohol-related harms: A systematic review. *Injury Prevention* 24: 94–100.
- Schnitzer S, Bellis MA, Anderson Z, Hughes K, Calafat A, Juan M and Kokkevi A (2010) Nightlife violence: A gender-specific view on risk factors for violence in nightlife settings: A cross-sectional study in nine European countries. *Journal of Interpersonal Violence* 25: 1094–1112.
- Shield KD, Rylett M and Rehm J (2016) *Public Health Successes and Missed Opportunities: Trends in Alcohol Consumption and Attributable Mortality in the WHO European Region, 1990–2014*. Copenhagen: WHO Regional Office for Europe. URL (accessed 31 January 2019): http://www.euro.who.int/_data/assets/pdf_file/0018/319122/Public-health-successes-and-missed-opportunities-alcohol-mortality-19902014.pdf?ua=1.

- SIRC (Social Issues Research Centre) (2002) Counting the cost. The measurement and recording of alcohol-related violence and disorder. The Portman Group, London. URL (accessed 31 January 2019): http://www.sirc.org/publik/counting_the_cost.pdf.
- Snowden AJ (2015) The role of alcohol in violence: The individual, small group, community and cultural level. *Review of European Studies* 7: 394–406.
- Spapens AC, Hoogeveen C, Pardoel C and Fijnaut CJ (2001) *Uitgegaan en ingesloten; oorzaken van uitgaansgeweld in de politieregio Brabant Zuid-Oost*. Tilburg: IVA. URL (accessed 31 January 2019): https://pure.uvt.nl/ws/files/473910/RAPPORT_761_UITGEGAAN_EN_INGESLOTEN.pdf.
- Stockwell T (2001) Responsible alcohol service: Lessons from evaluations of server training and policing initiatives. *Drug and Alcohol Review* 20: 257–265.
- Taylor SP and Leonard KE (1983) Alcohol and human physical aggression. In: Green RG and Donnerstein EI (eds) *Aggression: Theoretical and Empirical Reviews. Vol 2. Issues in Research*. New York: Academic Press, 77–101.
- Tesch F and Hohendorf L (2018) Do changes in bar opening hours influence violence in the night? Evidence from 13 Bavarian towns. *Journal of Drug Issues* 48: 295–306.
- Tomlinson MF, Brown M and Hoaken PN (2016) Recreational drug use and human aggressive behavior: A comprehensive review since 2003. *Aggression and Violent Behavior* 27: 9–29.
- Vitzthum V (2008) Jeder zeite Jugendliche Straftäter ist betrunken. *Welt*, 10 March. URL (accessed 31 January 2019): <http://www.welt.de/politik/article1783594/Jeder-zweite-jugendliche-Straftaeter-ist-betrunken.html>.
- Walby S and Allen J (2004) *Domestic Violence, Sexual Assault and Stalking: Findings from the British Crime Survey*. Home Office Research Study 276. London: Home Office.
- Walker A, Flatley J, Kershaw J and Moon D (2009) *Crime in England and Wales 2008/09. Volume 1. Findings from the British Crime Survey and Police Recorded Crime*. Home Office Statistical Bulletin 11/09. London: Home Office. URL (accessed 31 January 2019): http://news.bbc.co.uk/2/shared/bsp/hi/pdfs/16_07_09_bcs.pdf.
- White HR, Fite P, Pardini D, Mun EY and Loeber R (2013) Moderators of the dynamic link between alcohol use and aggressive behavior among adolescent males. *Journal of Abnormal Child Psychology* 41: 211–222.
- WHO (World Health Organization) (2006) Interpersonal violence and alcohol. WHO Policy Briefing. Geneva, Switzerland. URL (accessed 31 January 2019): http://www.who.int/violence_injury_prevention/violence/world_report/factsheets/pb_violencealcohol.pdf.
- WHO (World Health Organization) (2009) Preventing violence by reducing the availability and harmful use of alcohol. Geneva, Switzerland. URL (accessed 31 January 2019): http://www.who.int/violence_injury_prevention/violence/alcohol.pdf.
- Wilkinson C, Livingston M and Room R (2016) Impacts of changes to trading hours of liquor licences on alcohol-related harm: A systematic review 2005–2015. *Public Health Research & Practice* 26: e2641644.
- Zhao J, Macdonald S, Borges G, Joordens C, Stockwell T and Ye Y (2015) The rate ratio of injury and aggressive incident for alcohol alone, cocaine alone and simultaneous use before the event: A case-crossover study. *Accident Analysis and Prevention* 75: 137–143.