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Rapid Evidence Review: The role of alcohol in contributing to violence in intimate partner relationships

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Foreword

In developing its future programme of grant-funded research, Alcohol Change UK wished to explore what is known, and what is yet to be understood, in a series of key areas, as follows:

- Topic one The role of alcohol in intimate partner relationships

- Topic two The impact of alcohol on the human brain

- Topic three Alcohol interventions and the criminal justice system

- Topic four The relationship between alcohol and mental health problems

- Topic five Drinking problems and interventions in black and minority ethnic communities

- Topic six Digital interventions to reduce alcohol related harm

These areas were selected through stakeholder engagement and consultation, as well as 'horizon-scanning' the research, policy and practice environment to identify where particular gaps appeared.

Rapid evidence reviews were commissioned on the six topics and their findings will allow Alcohol Change UK to synthesise knowledge on this particular range of subjects. This will help inform its own work, as well as leading to outward-facing publications that will allow the public, practitioners and policy-makers to better understand the research in these key areas.

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Institutional details

At the Public Health Institute (PHI), Liverpool John Moores University we are influencing health service design and delivery, as well as health-related policy. PHI has recognised expertise in methodologies such as systematic reviews, the development of public health surveillance systems, qualitative research, the social return on investment, and developing visual and ethnographic methodologies.

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This report was funded by **Alcohol Change UK**. Alcohol Change UK works to significantly reduce serious alcohol harm in the UK. We create evidence-driven change by working towards five key changes: improved knowledge, better policies and regulation, shifted cultural norms, improved drinking behaviours, and more and better support and treatment.

Find out more at alcoholchange.org.uk.

Opinions and recommendations expressed in this report are those of the authors.

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Executive summary

Background

Research has evidenced the contribution of heavy alcohol use to a range of significant harms to people other than the drinker. Importantly, recent research highlights that alcohol-related harms to women from others largely stem from the behaviour of intimate male partners. Harms in relationships linked to alcohol use may extend from fairly minor grievances to more severe impacts, including intimate partner violence (IPV). The public health burden of IPV is considerable and alcohol use has been consistently identified as a risk factor for IPV perpetration.

Methods

This rapid review of alcohol's contribution to violence in intimate relationships was based on a review of:

- Articles that explicitly mentioned conceptual models or theories in the context of the relationship between IPV and alcohol use; and
- Meta-analyses that have examined problem alcohol use as the exposure and IPV perpetration or victimisation as the outcome of interest, and vice versa. Qualitative evidence from a recent meta-ethnography was used to provide further context to quantitative findings.
- Evidence for the effectiveness (and cost-effectiveness) of approaches that might impact on the relationship between alcohol and IPV perpetration and victimisation. This was achieved through a rapid review of systematic reviews.

Findings

Key findings from the review of the evidence on the relationship between alcohol use and IPV

- Different ideas and explanations link alcohol use and IPV. Whether alcohol use plays a causal, contributory or other role in IPV remains an area of debate.
- Meta-analyses show a robust association between alcohol use and IPV perpetration and victimisation in heterosexual relationships. Women appear to be at a higher risk of having physical IPV perpetrated against them by a male partner who has been drinking than vice versa.
- Alcohol-related IPV occurring in the context of lesbian, gay, bisexual and/or transgender relationships is understudied.
- Explanations for why some people who drink alcohol perpetrate IPV are complex. Considering the interplay between broader contextual and environmental influences, and relationship and individual characteristics is likely to be useful in linking models of alcohol use and IPV.

Key finding from the review of evidence for the effectiveness of approaches to tackle alcohol-related IPV

- Systematic reviews have identified a lack of robust evidence to determine whether population-level approaches to alcohol pricing and taxation, community-level policies and interventions to reduce alcohol availability, couples-based and individual-level alcohol treatment, and integrated alcohol and IPV perpetrator interventions effectively reduce or eliminate IPV-related outcomes.

Implications

Implications for research

- Overall, further research is required to better understand the contextual and environmental factors that link alcohol use and IPV perpetration and victimisation. Additional qualitative research is needed to provide a richer understanding of the relationship, and to better understand the impact of alcohol-related IPV across different drinking behaviours and forms of IPV.
- Although some assessments have been undertaken, the impact of whole population approaches on alcohol-related IPV requires further investigation. More specifically, we lack a clear understanding of the effects of pricing policy measures on alcohol-related IPV.
- Few interventions exist to address IPV perpetration among men accessing treatment for their alcohol use. Further evidence-based integrated interventions need to be developed and evaluated.

Implications for policy

- It is clear that there is a complex relationship between alcohol use and IPV. Theoretical frameworks underpinning policy actions need to incorporate a model of alcohol-related IPV that acknowledges the contextual and environmental factors that link alcohol use and IPV perpetration.
- Although few interventions exist to reduce alcohol-related IPV perpetration, evidence about the nature and relationship of alcohol-related IPV points to a need for guidance on addressing IPV among men accessing treatment for their alcohol use.

Conclusions

Bringing together the findings from across the different review elements, we have identified that different ideas and explanations have been provided about the relationship between alcohol use and IPV. Theoretical explanations for why some people who drink alcohol perpetrate IPV are complex and whether alcohol use plays a causal, contributory or other role in IPV remains an area of debate. Considering the interplay between broader contextual and environmental influences, and relationship and individual characteristics may

be useful in linking theoretical explanations and models of the relationship between alcohol use and IPV.

Alongside these theoretical and conceptual developments and debates, meta-analyses have provided evidence of a consistent and robust association between alcohol use and IPV perpetration and victimisation. Women appear to be at a higher risk of having IPV perpetrated against them by a male partner who has been drinking than vice versa. A synthesis of qualitative studies (meta-ethnography) found that substance use (including alcohol use) plays a complex role in IPV perpetration. Being under the influence of alcohol or other substances (intoxication) is interwoven with a range of other contributing contextual factors in influencing IPV perpetration.

Systematic reviews have identified a lack of robust evidence to determine which intervention approaches most effectively reduce or eliminate IPV-related outcomes. Further research is urgently needed to address the gaps in the evidence base.

Introduction

Alcohol use is one of the top five leading risk factors for death and loss of health in the UK (e.g. Murray et al., 2013). In addition to the well-established relationship between alcohol and the development of a number of different disease and health problems, alcohol use also has social and economic consequences to the drinker, others around the drinker and to society.

The harms of alcohol use to intimate partners

Our understanding of how a person's alcohol use may negatively affect the health and wellbeing of others has grown over the last decade. Research has evidenced the contribution of heavy alcohol use to a range of significant harms to people other than the drinker (Room et al., 2010; Quigg et al., 2019). These harms may affect those close to the drinker such as intimate partners and other family and household members (Laslett et al., 2011; Greenfield et al., 2015), as well as those in their wider social networks, such as friends and co-workers (Dale and Livingston, 2010; Laslett et al., 2010).

Importantly, recent research has highlighted that alcohol-related harms to women from others largely stem from the behaviour of intimate male partners. Pooling data across 10 countries, Stanesby et al. (2018) found that women were more likely to experience harm from a drinker with whom they had a close relationship, compared to harms to men, which resulted more often from drinkers who were male friends, co-workers or acquaintances. Further, an Australian study (Laslett, Jiang and Room, 2017) found that women were more likely than men to report harm from an intimate partner's drinking.

As noted by Laslett, Jiang and Room (2017), harms in relationships linked to alcohol use may extend from fairly minor grievances ("*poor performance of one's role, ignoring partners' needs, disregard for their feelings...*") to more severe impacts ("*...serious arguments, verbal abuse, physical and sexual harm*"). Any behaviour by a current or former intimate partner that causes physical, sexual or psychological harm to those in the relationship is included under contemporary definitions of intimate partner violence (IPV) (WHO, 2013b). IPV encompasses acts of physical aggression, sexual coercion, psychological abuse and other controlling and coercive behaviours (including financial abuse). Alcohol use has been consistently identified as a risk factor for IPV perpetration (Abramsky et al., 2011).

The public health burden of IPV is considerable. Experiencing IPV can lead directly to serious injury, psychological harm, disability or death and is associated with an increased risk of physical and mental health disorders (WHO/LSHTM, 2010). The total costs of domestic abuse in England and Wales for 2016/17 were estimated at over £66 billion (Oliver et al., 2019).

Prevalence of alcohol-related intimate partner violence

IPV is most frequently perpetrated by men against women (WHO/LSHTM, 2010). Although IPV may also be perpetrated by women against men, women are more likely than men to experience sexual violence, severe physical violence and to be

murdered by their partner (WHO, 2013a). IPV can also occur in the context of lesbian, gay, bisexual and/or transgender relationships, but prevalence is difficult to ascertain (Barnes and Donovan, 2018).

IPV is the most common form of violence against women globally (WHO, 2013a). The most recent Crime Survey for England and Wales (CSEW) found that an estimated 1 million women and 451,000 men in England and Wales reported having experienced partner abuse in 2017/18 (Office for National Statistics, 2018). The estimated lifetime prevalence of physical, psychological and sexual IPV in the UK is high; 37% of participants in the Avon Longitudinal Study (of births in 1990-1992 in the Bristol area of the UK) had experienced any IPV in their lifetime, and 29% had experienced IPV between ages 18 and 21 years (Yakubovich et al., 2019).

A survey in Wales found that the frequency of experiencing violent harm from others' drinking was higher when the source of harm was a partner (Quigg et al., 2019).

Although not all drinkers experience IPV and vice versa, high rates of alcohol use have been found among perpetrators of IPV (e.g. McKinney et al., 2010). Around one in five adults in England (20%) drink at hazardous levels, with 3-4% drinking at probably harmful or dependent levels (McManus et al., 2016). Hazardous and harmful drinking is more common in younger age groups and among men. For men aged 25 and 34 years, almost one in ten drink at levels indicative of harmful drinking or mild (or probable) dependence on alcohol (McManus et al., 2016). Gilchrist et al. (2017) found that a high proportion of men in treatment for substance use in England had perpetrated IPV (64% controlling behaviours; 63% emotional IPV; 60% physical IPV and 6% sexual IPV) during their current or most recent relationship.

Purpose of this rapid review

Increasing concerns about alcohol's harm to others and the considerable public health burden of IPV, highlight the need to develop effective prevention and treatment efforts that target hazardous and harmful drinkers in close relationships.

Historically, interventions for IPV perpetrators have generally conformed to ideas and concepts understood from a feminist-informed perspective (i.e. based on ideas about power and control) or adhered to a cognitive behavioural therapy (CBT) model (Gilchrist et al., 2015). Researchers have argued that this view of IPV has restricted the development of effective interventions that accommodate the complex range of factors that may contribute to aggressive behaviour in perpetrators (e.g. trauma, substance use). Researchers have highlighted the need for integrated interventions that address substance use and IPV together (Gilchrist and Hegarty, 2017). This rapid review aims to summarise what is known about the role of alcohol in IPV and bring together the evidence about what is known (and not known) about how to reduce or eliminate alcohol-related IPV.

Our objectives were to:

- Review theories and concepts that provide explanations about the nature of the relationship between alcohol use and IPV perpetration and victimisation;
- Review the extent and strength of the association between problem alcohol use

and IPV perpetration and victimisation; and

- Review the extent and strength of the evidence for the effectiveness and cost-effectiveness of interventions that might impact on the relationship between alcohol use and IPV perpetration and victimisation, either to prevent, respond to or treat alcohol-related IPV.

Methods

This rapid review is based on a review of:

- (i) Articles that explicitly mentioned conceptual models or theories in the context of the relationship between IPV and alcohol use; and
- (ii) Meta-analyses that have examined problem alcohol use as the exposure and IPV perpetration or victimisation as the outcome of interest, and vice versa. Qualitative evidence from a recent meta-ethnography was used to provide further context to quantitative findings.
- (iii) Evidence for the effectiveness (and cost-effectiveness) of approaches that might impact on the relationship between alcohol and IPV perpetration and victimisation. This was achieved through a rapid review of systematic reviews.

The conceptual framework developed in the first stage of research guided the evidence synthesis, and the development of policy and practice recommendations.

Further details of the methods used in compiling the evidence for this report is provided in Appendix 1.

Review of the relationship between alcohol and intimate partner violence

Introduction

No single factor explains IPV and a number of contributory risk factors are associated with IPV perpetration, including mental health disorders, exposure to child maltreatment, substance use problems, support for gender-specific roles, and acceptance of anger. Researchers have come to differing conclusions about whether alcohol use plays a causal, contributory or other role in IPV perpetration. Recently, Leonard and Quigley (2017) have described alcohol's contribution to IPV perpetration as "*approximately equal to other contributing causes such as gender roles, anger and marital functioning*".

In this section, we review the evidence on the relationship between alcohol use and IPV perpetration and victimisation and show how evidence on alcohol's role in IPV has accumulated through the development of theory and empirical research.

Overview of theoretical and conceptual models

Understandings and explanations of the relationship between alcohol use and IPV build on multidisciplinary bodies of knowledge that relate both separately and jointly to our understandings of IPV and alcohol use. As these ideas and concepts provide the starting point for developing theories and ideas about how alcohol and IPV are related, we briefly review them here.

Theories and concepts about IPV

Theories that offer explanations about the causes of IPV are complex and come from various perspectives. However, two sociocultural approaches have tended to dominate responses to IPV, family violence and feminist-based approaches (Lawson, 2012). Some researchers have been critical of such "*single-factor theories*" in understandings of IPV (e.g. Heise, 1998) and have argued for theories that are more comprehensive.

Social ecological frameworks are widely used in research and policy and have formed the basis of integrative frameworks of IPV (e.g. Heise, 1998; Whitaker, Hall and Coker, 2009). For example, the WHO IPV model (WHO/LSHTM, 2010; shown in Figure 1) proposes that the manifestation of IPV is the result of influences across multiple domains in the social ecology; including at individual, relationship, community and societal levels. By highlighting the links and interactions between different level and factors, the model offers a useful framework for understanding IPV and for designing comprehensive approaches to prevent and respond to IPV.

PERPETRATION BY MEN	VICTIMISATION OF WOMEN
INDIVIDUAL LEVEL	
<p style="text-align: center;">DEMOGRAPHICS</p> <ul style="list-style-type: none"> • Young age • Low socio-economic status/income • Low education • Unemployment 	<p style="text-align: center;">DEMOGRAPHICS</p> <ul style="list-style-type: none"> • Young age • Low socio-economic status/income • Low education • Separated/divorced marital status
<p style="text-align: center;">EXPOSURE TO CHILD MALTREATMENT •</p> <ul style="list-style-type: none"> Intra-parental violence • Sexual abuse • Physical abuse 	<p style="text-align: center;">EXPOSURE TO CHILD MALTREATMENT •</p> <ul style="list-style-type: none"> Intra-parental violence • Sexual abuse
<p style="text-align: center;">MENTAL DISORDER</p> <ul style="list-style-type: none"> • Antisocial personality 	<p style="text-align: center;">MENTAL DISORDER</p> <ul style="list-style-type: none"> • Depression
<p style="text-align: center;">SUBSTANCE USE</p> <ul style="list-style-type: none"> • Harmful use of alcohol • Illicit drug use 	<p style="text-align: center;">SUBSTANCE USE</p> <ul style="list-style-type: none"> • Harmful use of alcohol • Illicit drug use
<ul style="list-style-type: none"> • Acceptance of violence • Past history of being abusive 	<ul style="list-style-type: none"> • Acceptance of violence • Exposure to prior abuse/victimization
RELATIONSHIP LEVEL	
<ul style="list-style-type: none"> • Educational disparity 	<ul style="list-style-type: none"> • Educational disparity
<ul style="list-style-type: none"> • Multiple partners/infidelity • Low resistance to peer pressure 	
<p style="text-align: center;">RELATIONSHIP QUALITY</p> <ul style="list-style-type: none"> • Marital dissatisfaction/discord • Gender role disputes • Marital duration 	<p style="text-align: center;">RELATIONSHIP QUALITY</p> <ul style="list-style-type: none"> • Marital dissatisfaction/discord
COMMUNITY LEVEL	
<ul style="list-style-type: none"> • Acceptance of traditional gender roles 	<ul style="list-style-type: none"> • Acceptance of traditional gender roles
<p style="text-align: center;">NEIGHBOURHOOD CHARACTERISTICS</p> <ul style="list-style-type: none"> • High proportion of poverty • High proportion of unemployment • High proportion of male illiteracy • Acceptance of violence • High proportion of households that use corporal punishment 	<p style="text-align: center;">NEIGHBOURHOOD CHARACTERISTICS</p> <ul style="list-style-type: none"> • High proportion of poverty • High proportion of unemployment • High proportion of female illiteracy • Acceptance of violence • Low proportion of women with high level of autonomy • Low proportion of women with higher education
<ul style="list-style-type: none"> • Weak community sanctions 	<ul style="list-style-type: none"> • Weak community sanctions
SOCIETAL LEVEL	
	<ul style="list-style-type: none"> • Divorce regulations by government • Lack of legislation on intimate partner violence within marriage • Protective marriage law
<ul style="list-style-type: none"> • Traditional gender norms and social norms supportive of violence 	<ul style="list-style-type: none"> • Traditional gender norms and social norms supportive of violence

Figure 1. WHO social ecological model of intimate partner violence (reproduced from WHO/LSHTM, 2010)

Researchers have also sought to better understand the complexities of IPV, and its causes, correlates and consequences by developing different typologies of IPV based on the characteristics of the violence, the individual characteristics of the perpetrator, or a combination (Ali, Dhingra and McGarry, 2016). Johnson's typology (Kelly and Johnson, 2008) has been particularly influential and classifies IPV into four types:

- Coercive Controlling Violence (“*patterns of emotionally abusive intimidation, coercion and control coupled with physical violence*”);
- Violent Resistance (“*women and men may, in attempts to get the violence to stop or to stand up for themselves, react violently to their partners*”);
- Situational Couple Violence (“*types of partner violence that does not have a basis in the dynamic of power and control*”); and
- Separation-Instigated Violence (“*violence that first occurs in the relationship at separation*”).

However, there are concerns about the use of IPV typologies. In the context of substance use-related IPV, Gilchrist et al. (2019) have challenged the use of discrete categories and types to classify IPV or the men who perpetrate it. They point instead to the importance of contextual factors such as “*intoxication, withdrawal and addiction, concomitant impact on the relationship, such as ‘overburden’ and ‘hypervigilance’, together with the gendered dynamics of power, control and psychological vulnerabilities that substance use coalesces with*” (Gilchrist et al., 2019).

Theories and concepts about alcohol-related harms

The harmful use of alcohol is a major contributor to violence and a range of other harms. Social ecological models and community systems theory position alcohol-related harms as the interaction of individual drinker behaviours with the social and environmental features of communities in which they live. Room, Laslett and Jiang (2016) also highlight the ‘*rediscovery*’ of harm from others’ drinking in research and policy, noting a move among researchers to conceptualise “*a more social and interactional view of the nature of many problems from drinking*”. Underpinning these explanations is an understanding that drinking in different settings exposes drinkers to different risks, and that these risks become greater with the continued use of alcohol (Gruenewald, Remer and Lipton, 2002).

There is a complex relationship between alcohol availability, patterns of use and harm (Skog, 1985; Stockwell and Gruenewald, 2004a). There is a need for greater empirical work on the impact of changes in availability (Gmel, 2014; Rehm, 2014) and how alcohol use has changed across birth cohorts and across the life course (Gmel, 2014; Livingston and Room, 2014; Rehm, 2014). These limitations notwithstanding, consideration of alcohol availability continues to be influential in shaping responses to harm. Whole population approaches that target alcohol availability are thought to be the most effective and efficient ways of tackling problem alcohol use across all drinkers (Anderson, Chisholm and Fuhr, 2009; Babor et al., 2010).

Approaches to regulating alcohol availability may be divided into those that seek to reduce economic availability (e.g. by altering price through taxation; minimum alcohol unit pricing) and those that seek to reduce physical availability (e.g. laws to restrict underage sales or sales to intoxicated persons; restrictions of opening hours; restrictions on outlet density). Research from empirical studies has linked IPV to alcohol outlet density within communities (Beyer, Wallis and Hamberger, 2015). Cunradi, Mair and Todd (2014) have identified three pathways linking greater densities of alcohol outlets to IPV: (i) indirectly, as a marker for social disorganisation; (ii) by promoting alcohol consumption among at-risk couples; and (iii) by providing environments where high-risk groups form (e.g. through social stratification as described below).

Gruenewald (2007) has argued that theoretical understandings of outlet density (e.g. those based on the role of social capital and social disorganisation theory) have been limited as they do not address the dynamic social processes that shape the distributions of alcohol problems across communities. Gruenewald's niche theory and assortative drinking model (Gruenewald, 2007) proposes that over-concentration of alcohol outlets leads to the stratification of drinking groups, and that this social stratification of drinkers intensifies the levels of problems in some drinking outlets. The theory assumes that one of the reasons why drinking outlets (i.e. pubs, bars and clubs) vary by type, size and character is because each venue is competing for a market share of, and catering for, a particular segment (or strata) of the drinking population. Greater numbers of alcohol outlets provide more opportunities for drinkers to make choices about where they drink. Gruenewald's model proposes that having selected a common place to drink, drinkers are then placed at greater risk of harm because of the clustering of a particular drinker type (e.g. socially marginalised drinkers) within outlets, for example, resulting in 'hot spots' associated with hostility, aggression and heavy drinking.

Theories and concepts about alcohol-related IPV

Although understandings of the mechanisms by which alcohol may facilitate or increase the risk of IPV perpetration are still developing (Eckhardt, Parrott and Sprunger, 2015), different ideas and concepts about the nature of the relationship have emerged.

Individual- and situational-based models of alcohol-related IPV

At the individual level, three competing explanations have been proposed for the association between alcohol and IPV perpetration:

- (i) Alcohol use and IPV occur together but are related via a third variable that influences both IPV and alcohol use (e.g. younger age, deprivation, exposure to child maltreatment) – termed the *spurious model* (e.g. Leonard and Quigley, 1999).
- (ii) Alcohol use has an indirect role in IPV as it may cause conflict and dissatisfaction in a relationship leading to events (e.g. arguments and fights) that precipitate IPV – termed the *indirect effects model* (e.g. Murphy et al., 2001).

- (iii) Alcohol use is directly linked to IPV due to its psychopharmacological effects, alcohol-related expectancies, impaired information processing and poorer interpretation of social cues – termed the *proximal effects model* (e.g. Leonard and Roberts, 1998).

Two models that are complementary of one another, the *multiple thresholds model* (Fals-Stewart, Leonard and Birchler, 2005; Leonard and Quigley, 2017) and *I³ theory* (Finkel, 2014) have coalesced around the idea of a “perfect storm” precipitating IPV. These models propose that alcohol’s role in facilitating aggression differs according to the balance of instigating/impelling factors (e.g. high anger arousal and antisocial traits) and inhibiting factors (e.g. empathy and self-regulation) (Leonard and Quigley, 2017).

Galvani (2004) constructed an alternative theory to link alcohol to IPV, termed “*responsible disinhibition*”. The theory acknowledges that the ‘choice’ to perpetrate IPV is additional to alcohol’s disinhibiting effects and other influencing social and cultural factors. In later work, Galvani (2006) refers to “alcohol plus...” factors that describe a recognition among women that the psychopharmacological (disinhibiting) effects of alcohol alone are insufficient to explain IPV perpetration by their male partners. These included personality-specific factors and moods, and the environmental context of the drinking (e.g. a group or crowd may act as a control on violent behaviour).

Relationship-based models of alcohol-related IPV

Intimate partners

Eckhardt, Parrott and Crane (2019) have argued that there is a need to move beyond traditional, individual-centred models of alcohol-related IPV and to understand it as “*a dyadic [relationship-focused] phenomenon that is dependent upon the characteristics of both partners*”. Intimate relationships provide a context for each partner’s behaviours to have an impact on, and be affected by the other partner’s behaviours (Kelley and Thibaut, 1978). In relation to alcohol use, a typology developed by Roberts and Leonard (1997) proposed that couples establish a “drinking partnership” based on both partner’s drinking levels and the pattern of their reciprocal alcohol use. Although the wider literature does not consistently support such an association (Eckhardt, Parrott and Crane, 2019), a US study showed that compared to partners who share similar drinking habits, couples with major discrepancies in the amount of alcohol drunk by each partner may be more likely to experience IPV within their relationship (Leadley, Clark and Caetano, 2000). Another factor at the relationship level is that perpetrators may use their partner’s alcohol consumption to justify their actions (Gilchrist et al., 2014). Devries et al. (2014) note that perpetrators may “*perceive their partners to have behaved in an unacceptable way or to have transgressed a gender norm or to be a more ‘deserving’ victim because they have been drinking*”.

Family

IPV also affects the wider family and childhood exposure to IPV is associated with significant negative emotional and behavioural outcomes (McTavish et al., 2016).

Exposure to IPV in childhood has also been associated with exposure to other forms of child maltreatment (Hamby et al., 2010) and it is thought that it may contribute to intergenerational cycles of violence, whereby exposure to IPV as a child is related to later experiences of IPV (e.g. Stith et al., 2000). However, the involvement of alcohol in family functioning and violence and the mechanisms through which exposure to alcohol-related IPV influences outcomes requires further research.

Friends, family and neighbours

Interest in bystander intervention (or action) and its potential role in tackling IPV has grown over the last two decades. The theoretical underpinnings of bystander intervention programmes have been discussed by others (see Fenton et al., 2016) but more research is needed outside of college and university settings (Wee et al., 2016).

Broader contextual and environmental influences

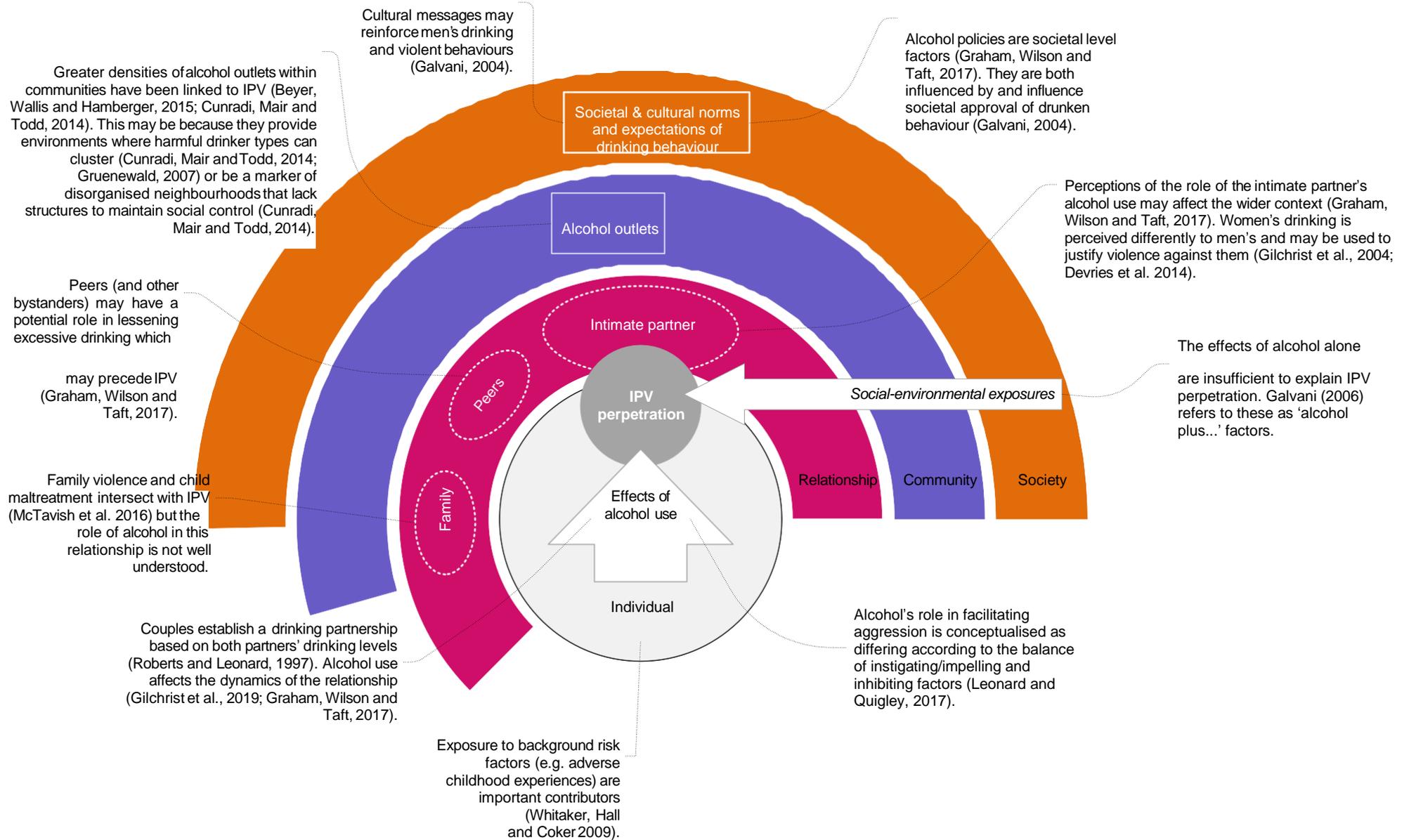
In two recent articles (Cunradi, Mair and Todd, 2014; Graham, Wilson and Taft, 2017), researchers have sought to incorporate broader contextual and environmental influences into theories and concepts about the relationship between alcohol use and IPV. The ideas and concepts in both articles seek to build on social ecological models of IPV by incorporating explanations and understanding of mechanisms within the alcohol environment.

Graham, Wilson and Taft (2017) developed an alcohol-related IPV prevention model by situating two criminological theories (routine activities theory and situational crime prevention) within a social ecological model. This mirrors moves among other alcohol researchers towards the integration of criminological theory with availability theory (e.g. Stockwell and Gruenewald, 2004b). Routine activities theory suggests that crime occurs based on the convergence of three factors – a motivated offender, a suitable victim, and the lack of a capable guardian. Graham, Wilson and Taft (2017) drew on situational crime prevention theory to extend routine activity to include the environment and other factors that precipitate crime. The model also incorporates criminological ideas relating to ‘offender handling’, whereby handlers (i.e. individuals such as peers) influence perpetration through informal social control or by acting to prevent perpetration (i.e. bystander intervention). Graham, Wilson and Taft (2017) conclude that their framework expands consideration of research and interventions to address societal and cultural norms and expectations of drinking behaviour; highlights the potential role of guardians and handlers in discouraging alcohol use; and the impact of drinking generally on the relationship and perceptions of the role of victims’ drinking.

A conceptual framework developed by Cunradi, Mair and Todd (2014) to link IPV to drinking contexts, builds on the developmental, social ecological model proposed by Whitaker, Hall and Coker (2009) by incorporating social ecology (Gruenewald’s niche theory and assortative drinking model – discussed in Section 3.2.2) and social disorganisation theories. Social disorganisation theory suggests that disorganised neighbourhoods that lack structures to maintain social control have higher rates of ‘deviant’ behaviours, such as public drunkenness and IPV. From this perspective, alcohol outlets have been suggested as a marker of neighbourhood disorder. Cunradi, Mair and Todd (2014) conclude that while IPV typically occurs in the home,

the wider contextual and environmental factors, such as the use of drinking outlets and exposure to neighbourhoods' conditions, may influence the likelihood of IPV occurring.

Figure 2. Conceptual framework of the relationship between alcohol use and intimate partner violence



Is alcohol a contributory cause of intimate partner violence?

Research suggests a consistent link between alcohol consumption and IPV. However, researchers have disagreed about whether there is enough evidence to support the hypothesis that alcohol has a causal role (Leonard, 2005; Gil-Gonzalez et al., 2006). Meta-analyses published in the last 10 years have consistently demonstrated that overall there is a statistically significant association between alcohol use and IPV perpetration and victimisation. We discuss the findings from these meta-analyses below and draw on the findings from a recently published meta-ethnography that provides a richer understanding of the nature of the relationship between the amount of alcohol consumed, intoxication levels and subsequent IPV.

Evidence from recent systematic reviews and meta-analyses

This section reports the findings from six systematic reviews and meta-analyses, which examined the associations between alcohol use, and IPV perpetration and victimisation (Gil-Gonzalez et al., 2006; Foran and O'Leary, 2008; Devries et al., 2014; Bacchus et al., 2018; Cafferky et al., 2018; Spencer, Stith and Cafferky, 2019). Findings are summarised in Table 1. This section also draws on the findings of a recent meta-ethnography of qualitative studies that explored how substance use features in survivors' and perpetrators' accounts of IPV perpetration (Gilchrist et al., 2019).

IPV perpetration

Alcohol use has a significant, small to moderate association with the perpetration of physical IPV by both men and women (Foran and O'Leary, 2008; Cafferky et al., 2018). A stronger association is seen between male alcohol use and IPV perpetration than between female alcohol use and IPV perpetration (Cafferky et al., 2018). Among men, heavy alcohol use (e.g. problem drinking and dependence) is more strongly associated with IPV perpetration than more moderate alcohol use (Foran and O'Leary, 2008; Cafferky et al., 2018). Men who are intoxicated or who experience withdrawal symptoms seem to be more likely to perpetrate IPV (Cafferky et al., 2018).

Difficulties have been encountered at a meta-analytic level in exploring whether alcohol is associated with increased severity of IPV (e.g. Foran and O'Leary, 2008). However, individual studies suggest that physical harm is more likely (Wupperman et al., 2009; Moore et al., 2011) and more severe (Testa, Livingston and Leonard, 2003; Graham et al., 2011) on days when drinking or heavy drinking has occurred (Shorey et al., 2014).

Drawing on qualitative evidence, Gilchrist et al. (2019) identified a complex interplay between substance use (including alcohol) and the effects of the substance (in the contexts of intoxication, withdrawal and craving), gendered power relations and controlling behaviours. They identified that both survivors and perpetrators talk about substances as changing the perpetrator's behaviours, but that survivors understood these behaviours more often as part of a pattern of abusive behaviours within a wider context (referred to as "*alcohol... plus factors*" in one study by Galvani (2006)). Perpetrators who used substances were more likely than survivors to blame their violence on intoxication or their partner's behaviour.

IPV victimisation

Alcohol use also has a significant, moderate association with IPV victimisation (Devries et al., 2014; Cafferky et al., 2018). Alcohol use appears to be more strongly associated with IPV victimisation among women than it does with IPV victimisation among men (Spencer, Stith and Cafferky, 2019).

Among women, longitudinal studies (i.e. studies that follow participants over time) show that alcohol use may precede IPV victimisation, suggesting that women who drink are more likely to have experienced IPV (Devries et al., 2014). IPV victimisation is also significantly associated with later alcohol use, suggesting that women who have experienced IPV are more likely to be heavy drinkers (Devries et al., 2014). Women may use alcohol as a coping mechanism for the violence in their relationship (e.g. Testa, Livingston and Leonard, 2003). Bacchus et al. (2018) examined recent IPV victimisation among women (occurring up to and including the last 12 months), but in contrast to Devries et al. (2014), found no evidence of an association between recent IPV victimisation and alcohol use, according to whether alcohol preceded IPV or vice versa.

Specific groups

Four additional systematic reviews and meta-analyses (Rothman et al., 2012; Buller et al., 2014; Badenes-Ribera et al., 2016; Warmling, Lindner and Coelho, 2017) were identified that examined the relationship between alcohol use and IPV within specific groups.

Young people

Rothman et al. (2012) examined the relationship between alcohol use and dating violence perpetration. They found an increased risk of dating violence perpetration among young people who drank more frequently or in higher quantities, engaged in heavy episodic drinking and were problem drinkers. They identified that the association between problem alcohol use and dating violence perpetration was particularly strong.

Same-sex relationships

Two systematic reviews examined IPV perpetration and victimisation among same-sex partners, specifically self-identified lesbians (Badenes-Ribera et al., 2016) and men who have sex with men (Buller et al., 2014). Badenes-Ribera et al. (2016) only identified one study that examined the relationship between alcohol use and IPV perpetration among self-identified lesbians, which found a positive and statistically significant relationship. Buller et al. (2014) examined associations between IPV and health, finding that IPV victimisation was associated with a significantly increased risk of substance (including alcohol) use among men who have sex with men.

Older people

Warmling, Lindner and Coelho (2017) examined IPV among older intimate partners (aged over 60 years). The review identified a greater prevalence of psychological violence and financial abuse than other forms of IPV. The review also found that

alcohol use was the most frequent factor associated with IPV. However, the review authors did not clearly report whether the association between alcohol use and IPV related to perpetration or victimisation, or both.

Laboratory-based experimental studies

Crane et al. (2016) reviewed the experimental literature on the relationship between acute alcohol use and male-to-female aggression. The results showed a small but significant overall association between acute alcohol consumption and male-to-female aggression in studies of experimentally manipulated alcohol use.

Table 1. Summary of findings from recent meta-analyses

Association	Reference	No. of studies (Study design) Location	Pooled risk estimates	
			Effect size (95% CI)	Overall results (combined)
IPV perpetration by males				
Alcohol use & physical IPV	Gil-Gonzalez et al., 2006	11 studies (2 case-control; 9 cross-sectional) India, USA, Chile, Canada, Malta, South Africa, Uganda	OR 4.57 (3.30, 6.35)****	All studies showed a statistically significant positive association between alcohol use and IPV perpetration.
Alcohol use & physical IPV	Foran & O'Leary, 2008	47 studies (not reported) Not reported	<i>r</i> 0.23 (0.21, 0.24)***	Mean overall effect size was statistically significant.
Alcohol use & physical IPV	Cafferky et al., 2018	Not reported (277 effect sizes)	<i>r</i> 0.22 (0.21, 0.24)****	Mean overall effect size was statistically significant.
IPV perpetration by females				
Alcohol use & physical IPV	Foran & O'Leary, 2008	8 studies (not reported) Not reported	<i>r</i> 0.14 (0.08, 0.20)**	Mean overall effect size was statistically significant.
Alcohol use & physical IPV	Cafferky et al., 2018	Not reported (77 effect sizes)	<i>r</i> 0.15 (0.12, 0.18)****	Mean overall effect size was statistically significant.
IPV victimisation of females				
Alcohol use & IPV	Spencer et al., 2019	Not reported (207 effect sizes)	<i>r</i> 0.19 (0.17, 0.21)	Mean overall effect size was statistically significant.
Alcohol use & IPV	Cafferky et al., 2018	Not reported (162 effect sizes)	<i>r</i> 0.18 (0.16, 0.20)****	Mean overall effect size was statistically significant.
Alcohol-subsequent IPV	Devries et al., 2014	3 studies (all longitudinal) USA	OR 1.27 (1.07, 1.52)*	Positive association between alcohol use and subsequent IPV.
IPV-subsequent alcohol use	Devries et al., 2014	5 studies (all longitudinal) New Zealand, USA	OR 1.25 (1.02, 1.52)*	Positive association between IPV and subsequent alcohol use.
Alcohol-subsequent <i>recent</i> IPV	Bacchus et al., 2018	2 studies (all longitudinal) USA	OR 1.11 (0.91, 1.35)*	No evidence of an association between alcohol use and recent IPV.
<i>Recent</i> IPV-subsequent alcohol use	Bacchus et al., 2018	3 studies (all longitudinal) New Zealand, USA	OR 1.19 (0.91, 1.55)*	No evidence of an association between recent IPV and subsequent alcohol use.
IPV victimisation of males				
Alcohol use & IPV	Spencer et al., 2019	Not reported (76 effect sizes)	<i>r</i> 0.14 (0.11, 0.18)	Mean overall effect size was statistically significant.
Alcohol use & IPV	Cafferky et al., 2018	Not reported (58 effect sizes)	<i>r</i> 0.15 (0.11, 0.18)****	Mean overall effect size was statistically significant.
*Low heterogeneity ($I^2=0-25\%$). **Moderate heterogeneity ($I^2=30-60\%$). ***Significant, substantial heterogeneity ($I^2=50-90\%$). ****Significant, considerable heterogeneity ($I^2=75-100\%$). CI=confidence interval; RR=relative risk; OR=odds ratio.				

Summary

Key findings

- This section sought to review the evidence on the relationship between alcohol use and IPV perpetration and victimisation.
- Different ideas and explanations link alcohol use and IPV. Whether alcohol use plays a causal, contributory or other role in IPV remains an area of debate.
- Meta-analyses show a robust association between alcohol use and IPV perpetration and victimisation in heterosexual relationships. Women appear to be at a higher risk of having IPV perpetrated against them by a male partner who has been drinking than vice versa.
- Alcohol-related IPV occurring in the context of lesbian, gay, bisexual and/or transgender relationships is understudied.
- Explanations for why some people who drink alcohol perpetrate IPV are complex. Considering the interplay between broader contextual and environmental influences, and relationship and individual characteristics is likely to be useful in linking models of alcohol use and IPV.

Different ideas and explanations have been provided about the relationship between alcohol use and IPV. Theoretical explanations for why some people who drink alcohol perpetrate IPV are complex and whether alcohol use plays a causal, contributory or other role in IPV remains an area of debate. Considering the interplay between broader contextual and environmental influences, and relationship and individual characteristics may be useful in linking theoretical explanations and models of the relationship between alcohol use and IPV.

Alongside these theoretical and conceptual developments and debates, meta-analyses provide evidence of a consistent and robust association between alcohol use and IPV perpetration and victimisation in heterosexual relationships. Women appear to be at a higher risk of having IPV perpetrated against them by a male partner who has been drinking than vice versa. A synthesis of qualitative studies (meta-ethnography) found that substance use (including alcohol use) plays a complex role in IPV perpetration. Being under the influence of alcohol or other substances (intoxication) is interwoven with a range of other contributing contextual factors in influencing IPV perpetration.

Reducing alcohol-related intimate partner violence

A comprehensive approach to tackling alcohol-related IPV should include a range of interventions that target the multi-level factors characterised in the socio-ecological model (Figure 2, pg 12). Both generic strategies to treat heavy alcohol use and address IPV perpetration, and measures to reduce the availability and harmful use of alcohol may be important approaches (WHO/LJMU, 2006; WHO/LJMU, 2009). This section reports the findings from five systematic reviews and meta-analyses, which examined interventions that aim to prevent, respond to or treat alcohol-related IPV. Although systematic reviews of cost-effectiveness studies were eligible for inclusion, none were identified.

Individual-level intervention approaches

Five systematic reviews (Wilson, Graham and Taft, 2014; Gilchrist, Munoz and Easton, 2015; Tait and Lenton, 2015; Tarzia et al., 2017; Stephens-Lewis et al., under review) included studies of individual-level intervention approaches. Studies examined intervention that: (i) addressed IPV in the context of alcohol treatment; and (ii) addressed alcohol use in the context of (or as an adjunct to) IPV perpetrator programmes.

Online alcohol brief interventions

Online or computer-delivered screening and brief intervention programmes have been highlighted as one means of addressing alcohol use and its related harms among university/college students. Tait and Lenton (2015) identified four studies that examined online brief interventions and reported outcomes for sexual assault or IPV. Only one of the interventions (SafERteens) contained components that targeted interpersonal violence but these were not specific to IPV. There is therefore insufficient evidence to evaluate the effectiveness of online brief alcohol interventions in reducing IPV.

Alcohol treatment interventions

Wilson, Graham and Taft, 2014 identified 12 studies that evaluated alcohol treatment interventions for individuals, including alcohol treatment only, and combined alcohol treatment and perpetrator programme approaches. Only three studies met the design criteria for inclusion, all of which were primarily perpetrator interventions. These are discussed below. Of the studies that did not meet the design criteria, there was only weak evidence from three studies that suggested that improvements in alcohol treatment outcomes were also associated with improvements in IPV outcomes.

Interventions targeting perpetrators of IPV

Across four systematic reviews (Wilson, Graham and Taft, 2014; Gilchrist, Munoz and Easton, 2015; Tarzia et al., 2017; Stephens-Lewis et al., under review), 13 studies were identified that examined a range of interventions targeting IPV perpetration in the context of co-occurring alcohol (or other substance) use. Intervention approaches included:

- Integrated alcohol (or other substance) use treatment and IPV perpetrator interventions (Wilson, Graham and Taft, 2014; Gilchrist, Munoz and Easton, 2015; Tarzia et al., 2017; Stephens-Lewis et al., under review)
- IPV perpetrator interventions with adjunct brief/motivational alcohol treatment interventions (Wilson, Graham and Taft, 2014; Stephens-Lewis et al., under review) [and vice versa (Wilson, Graham and Taft, 2014; Tarzia et al., 2017)]
- Other approaches, including standalone IPV perpetrator interventions (Stephens-Lewis et al., under review) and a pharmacological intervention (a serotonin reuptake inhibitor, fluoxetine) (Wilson, Graham and Taft, 2014).

Further, Gilchrist, Munoz and Easton (2015) specifically examined CBT interventions with anger management components and identified four studies for inclusion; one of which (an integrated intervention) overlapped with those included in the other systematic reviews.

The approaches examined across the included studies were diverse. The authors of all four systematic reviews considered the evidence too limited or insufficient to draw clear conclusions about effectiveness. Findings from the studies included across the four systematic reviews are summarised in Table 2.

Relationship-level intervention approaches

Couples-based treatment

It has been suggested that couples-based treatment interventions for alcohol and drug use disorders (e.g. behavioural couples therapy) may achieve better outcomes than individual-based treatment for some married or cohabiting individuals seeking help for alcohol and other substance use disorders (Powers, Vedel and Emmelkamp, 2008). Although couples therapy originated as an intervention specifically for men with alcohol dependence and their partners, the effects of the intervention on IPV have also been explored. There is controversy over the indications for couple therapy in cases of IPV and whether it is appropriate, effective or safe (McCollum and Stith, 2007).

Wilson, Graham and Taft (2014) identified five studies that evaluated the impact of couples-based alcohol treatment on IPV outcomes, but only one met the design criteria for inclusion in their review. Tarzia et al. (2017) also included two studies of couples-based alcohol treatment (one study overlapped with those included by Wilson, Graham and Taft, 2014). Both systematic reviews found that the evidence for effectiveness of couples-based treatment in reducing IPV was weak and that study design issues affected the interpretation of effects. Findings from the studies included across the two systematic reviews are summarised in Table 2.

Community-level intervention approaches

Reducing physical availability

Reducing or regulating alcohol outlet density is one approach to limiting the physical availability of alcohol and evidence strongly suggests that alcohol outlet density has

an impact on drinking patterns and problems (Popova et al., 2009; Jackson et al., 2010). Another approach is to maintain limited, or introduce reductions in, days and hours of sale. Wilson, Graham and Taft (2014) identified 11 studies (both longitudinal and cross-sectional designs) that examined the relationship between alcohol outlet density and IPV and one study that evaluated the impact of restrictions on the hours and days of sale of alcohol. Overall, the evidence in support of an association between alcohol availability restrictions and a reduction in IPV was weak. Among the included longitudinal studies, two studies from Australia the USA, respectively, found positive associations between IPV and “off-premises” outlet density. The review also provides some insight into the potential mediating role of alcohol consumption in the relationship between outlet density and IPV, suggesting that there may be a link between the amount of alcohol sold/consumed and IPV. Findings from these studies are summarised in Table 2.

Societal-level intervention approaches

Pricing and taxation

A large literature has established that alcohol prices and taxes are inversely related to drinking (Wagenaar, Salois and Komro, 2009). It follows therefore, that increasing the price of alcohol may be expected to reduce the frequency and severity of IPV as an extension of its effect at reducing the amount of alcohol consumed by potential perpetrators of alcohol-related IPV. Wilson, Graham and Taft (2014) identified four studies that evaluated the relationship between alcohol pricing/taxation and IPV, of which three met the review inclusion criteria. Overall, they identified only weak or indirect evidence that increasing the price of alcohol reduces IPV. All three studies were conducted in the USA and only one found a significant relationship between the price of alcohol and IPV. Findings from these studies are summarised in Table 2.

Table 2. Summary of findings from studies of interventions that aim to prevent, respond to or treat alcohol-related IPV

Level Intervention Author (year), Country, Study Design	Setting	Population	Intervention and Control condition	IPV outcome measure(s) Follow-up	Change in IPV outcome(s)	Review
Individual-level						
Online alcohol brief interventions						
Tait and Lenton (2015) identified four studies but none specifically targeted IPV or reported change in IPV-related outcomes.						
Alcohol treatment						
Wilson, Graham and Taft (2014) identified 12 studies of which three met the design criteria for inclusion. These studies are detailed under <i>Intervention targeting perpetrators</i> .						
Intervention targeting perpetrators						
Alexander (2010), USA, RCT	Community setting serving victims and perpetrators of IPV	528 court ordered male substance abusers; sober for at least one month	Stages of change MI + group-based CBT vs. group-based CBT alone	CTS2 (psychological and physical aggression) 6 and 12 months	No significant difference between groups in psychological IPV. Reduction in partner reports of physical IPV at follow-up in intervention group.	(4)
Brannen and Rubin (1996), USA, RCT	Criminal justice setting	49 court ordered males, part of a couple. Alcohol identified as recurrent problem in the relationship.	Couples group intervention vs. gender-specific group intervention (feminist model)	Modified CTS (physical and verbal aggression) 6 months	No significant difference between groups	(4)
Dunford (2000), USA, RCT	Family service centres and Navy medical facilities	861 couples with active- duty husbands who had physically assaulted their wives	Men's group, conjoint group or rigorous monitoring group vs. no treatment	Modified CTS (physical) 6 and 12 months	No significant difference between groups	(4)
Easton (2007), USA, RCT	Outpatient substance abuse treatment facility	75 alcohol dependent males arrested for IPV within past year.	Group-based CBT integrated treatment approach vs. TSF	CTS2 (psychological and physical aggression) 3 months	No significant difference between groups	(2); (3); (4); (5)
Easton, Crane and Mandel (2018), USA, RCT	Outpatient substance abuse treatment facility	63 alcohol dependent males arrested for DV in past year	Individually delivered CBT integrated treatment approach vs. modified CBT approach	CTS2 (physical) 3 months	No significant difference between groups	(5)

Level Intervention Author (year), Country, Study Design	Setting	Population	Intervention and Control condition	IPV outcome measure(s) Follow-up	Change in IPV outcome(s)	Review
Kistenmacher (2008), USA, RCT	Psychology clinic	33 court ordered men and women in current intimate relationship with IPV, diagnosis of alcohol or Substance abuse/dependence	Individually delivered MI vs. no MI	CTS2 2 weeks	No significant difference between groups	(5)
Kraanen et al. (2013), The Netherlands, RCT	Outpatient substance abuse treatment facility	52 alcohol or substance abusing/dependent and perpetrated IPV in past year	Integrated treatment (I-Stop) using evidence-based CBT approaches and MI techniques vs. manualised CBT	CTS2 (physical) Post-treatment only	No significant difference between groups	(5)
Mbilinyi et al. (2011), USA, RCT	Community self-referral	124 male IPV perpetrators with substance use disorder	Personalised MET delivered by telephone vs. mailed education materials	CTS2 (physical and psychological) 30 days	No significant difference between groups	(2); (5)
Murphy et al. (2018), USA, RCT	Community domestic violence agencies	228 males IPV perpetrators (within past year) showing signs of hazardous drinking	MET (providing feedback on both alcohol use and IPV) vs. alcohol education	TLFB-SV and CTS (physical) 12 months	No significant difference between groups	(5)
Palmstierna et al. (2012), Norway, RCT	Specialised outpatient mental health service	26 male perpetrators voluntarily seeking therapy	Group-based CBT vs. waiting list	CTS2 (physical, material, any violence, verbal aggression) 15 weeks	Reduction in self-reported violence in intervention group	(5)
Satyanarayana (2016), India, RCT	Inpatient psychiatric services	177 alcohol dependent married males and had perpetrated IPV in past 6 months	Integrated CBT vs. routine care (pharmacotherapy and psychoeducation)	Index of Spouse Abuse (physical and non-physical violence) 1 and 3 months	Reduction in severity of violence in intervention group	(3); (5)
Schumacher (2011), USA, RCT	Outpatient substance abuse treatment programme	23 alcohol dependent men, married or cohabiting, had perpetrated IPV in previous year	MI + self-help handout and list of resources vs. community resource list only	TLFB-SV and CTS (physical and verbal aggression) 3 and 6 months	No significant difference between groups	excluded from (2); (3)
Stuart et al. (2013; 2016), USA, RCT	Batterer intervention programme	252 hazardous drinking men in batterer intervention programmes	SBP + one-off motivational alcohol intervention vs. SBP	CTS2 (physical and psychological) 3, 6 and 12 months	No significant difference between groups in physical IPV (primary outcome)	(2); (5)

Level Intervention Author (year), Country, Study design	Setting	Population	Intervention and Control condition	IPV outcome measure(s) Follow-up	Change in IPV outcome(s)	Review
Relationship-level						
Couples based treatment						
Woodin and O'Leary (2010), USA, RCT	State university	49 dating college couples with at least one act of male perpetration of physical aggression	Individualized motivational feedback targeting physical aggression and risk factors (including alcohol use) vs. minimal, non-motivational feedback	CTS2 (physical and psychological) 3, 6 and 9 months	Reduction in physical IPV in the intervention group No significant difference between groups in psychological IPV	(2)
Fals-Stewart and Clinton-Sherrod (2009), USA, RCT	Outpatient substance abuse clinic	207 men admitted to treatment programme and their female partners (married/cohabiting)	Partner involved BCT + individual TSF vs. individual TSF alone	TLFB-SV and CTS (physical) 12 months	Reduction in male-to-female percentage of days with (any or severe) violence in the intervention group*	(3)
O'Farrell et al. (2004), USA, Case-control study	Outpatient substance abuse treatment programmes	303 couples where male partner was alcohol dependent	BCT vs. case-matched non-alcoholic individuals	CTS (physical and verbal aggression) 1 and 2 years	Reduced within cases but significantly higher than controls	excluded from (2); (3)
Community-level						
Reducing physical availability of alcohol						
Duailibi et al. (2007), Brazil, Longitudinal	Diadema, São Paulo, Brazil	All residents	New licensing law introduced closing all bars at 11pm from July 2002	Police-recorded assaults against women NA	No association with police-recorded assaults against women	(2)
Livingston (2011), Australia, Longitudinal TS	Melbourne, Australia	All residents	Increase in the number and density of alcohol outlets	Police-recorded IPV incidents NA	Increase in alcohol outlets associated with an increase in police-recorded DV incidents	(2)
Cunradi et al. (2011), USA, Longitudinal	Sacramento, California, USA	All residents	Increase in the number and density of alcohol outlets	IPV-related police calls NA	Off-premises outlet density associated with an increase in IPV-related police calls No association with on-premises outlet density	(2)

Level Intervention Author (year), Country, Study Design	Setting	Population	Intervention and Control condition	IPV outcome measure(s) Follow-up	Change in IPV outcome(s)	Review
Cunradi et al. (2012), USA, Longitudinal	State of California, USA	All residents	Increase in the number and density of alcohol outlets	IPV-related ED visits NA	On-premises outlet density associated with an increase in IPV-related ED visits Off-premises outlet density associated with an increase in IPV-related ED visits (but weaker association than on-premises)	(2)
Societal-level						
Pricing and taxation						
Durrance et al. (2011), USA, Longitudinal	National	46 US states and DC	Changes in state-level beer, wine and liquor taxes (1990-2004); increase in Federal-level beer, wine and liquor (spirits) tax (1991-2004)	State-level female homicide victimization rates NA	No association between tax changes and state-level female homicide victimization rates	(2)
Markowitz (2000), USA, Repeated measures/CS	National	National representative population of married/cohabiting couples, prices calculated by state	Changes in the prices of liquor, wine & beer	CTS (physical) NA	Changes in price associated with a reduced probability of severe male-to-female IPV	(2)
Zeoli and Webster (2010), USA, Multiple TS	National	46 US states	Changes in Federal, State and local beer excise taxes	Intimate partner homicide NA	No association between tax changes and intimate partner homicide	(2)
<p>BCT= Behavioural Couples Therapy. CBT = cognitive behavioural therapy. CS = cross-sectional. CTS = Conflict Tactics Scale. CTS2 = Revised Conflict Tactics Scale. ED = emergency department. MET = motivational enhancement therapy. MI = motivational interviewing. NA = not applicable. RCT = randomised controlled trial. SBP = standard batterer programme. TLFB-SV = Timeline Followback interview-Spousal Violence. TS = time series. TSF = Twelve Step Facilitation.</p> <p>*Tarzia et al. (2017) note that the reduction is not clinically meaningful.</p> <p>Systematic reviews: (1) Tait and Lenton (2015); (2) Wilson, Graham and Taft (2014); (3) Tarzia et al. (2017); (4) Gilchrist, Munoz and Easton (2015); (5) Stephens-Lewis et al. (under review)</p> <p>References to the primary studies are provided in Appendix 4.</p>						

Summary

Key finding

- Systematic reviews have identified a lack of robust evidence to determine whether population-level approaches to alcohol pricing and taxation, community-level policies and interventions to reduce alcohol availability, couples-based and individual-level alcohol treatment, and integrated alcohol and IPV perpetrator interventions effectively reduce or eliminate IPV-related outcomes.

This rapid review has shown that intervention and prevention research targeting alcohol-related IPV covers population-level approaches to pricing and taxation, community-level policies and interventions to reduce alcohol availability, couples-based and individual-level alcohol treatment, and integrated alcohol and IPV perpetrator interventions. However overall, few studies have been undertaken in the area and there is currently a lack of robust evidence to determine whether these approaches effectively reduce or eliminate IPV-related outcomes.

At an individual-level, few interventions exist to reduce alcohol-related IPV perpetration and further evidence-based integrated interventions need to be developed and evaluated (Wilson, Graham and Taft, 2014; Stephens-Lewis et al., under review).

Whole population approaches remain the focus of the public health approach to alcohol policy, and these approaches are considered likely to have the greatest impact on alcohol use and consequently generate the greatest reductions in alcohol-related harm (including IPV). However, currently there is insufficient evidence to support a population level approach to alcohol use as an effective means of reducing or eliminating IPV. To address the gaps in our understanding, Wilson, Graham and Taft (2014) suggest that we need more robust evaluations of alcohol pricing changes (including measures that can distinguish the effects on alcohol-related IPV) and assessment of the extent to which those with heavy or binge drinking patterns are sensitive to changes in alcohol price. They also suggest that we need further research to understand the relationship between alcohol-related IPV and drinking location, and how this might be linked to outlet density.

Recommendations

Research recommendations

- Overall, further research is required to better understand the contextual and environmental factors that link alcohol use and IPV perpetration and victimisation. Additional qualitative research is needed to provide a richer understanding of the relationship, and to better understand the impact of alcohol-related IPV across different drinking behaviours and forms of IPV.
- Although some assessments have been undertaken, the impact of whole population approaches on alcohol-related IPV requires further investigation. More specifically, we lack a clear understanding of the effects of pricing policy measures on IPV-related outcomes.
- Few interventions exist to address IPV perpetration among men accessing treatment for problems with their alcohol use. Further evidence-based, integrated interventions need to be developed and evaluated.

Policy recommendations

- It is clear that there is a complex relationship between alcohol use and IPV. Theoretical frameworks underpinning policy actions need to incorporate a model of alcohol-related IPV that acknowledges the contextual and environmental factors that link alcohol use and IPV perpetration.
- Although few interventions exist to reduce alcohol-related IPV perpetration, evidence about the nature and relationship of alcohol-related IPV points to a need for guidance on addressing IPV among men accessing treatment for their alcohol use.

Conclusions

This rapid review of theoretical and conceptual models, and systematic reviews and meta-analyses sought to better understand the relationship between alcohol use and IPV, and the extent and strength of evidence for the effectiveness of interventions that might reduce or eliminate alcohol-related IPV.

Different ideas and explanations have been provided about the relationship between alcohol use and IPV. Meta-analyses provide evidence of a consistent and robust association between alcohol use and IPV perpetration and victimisation. Women appear to be at a higher risk of having IPV perpetrated against them by a male partner who has been drinking than vice versa.

Explanations for why some people who drink alcohol perpetrate IPV are complex and whether alcohol use plays a causal, contributory or other role in IPV remains an area of debate. Considering the interplay between broader contextual and environmental influences, and relationship and individual characteristics may be useful in linking theoretical explanations and models of the relationship between

alcohol use and IPV.

Systematic reviews have identified a lack of robust evidence to determine whether population-level approaches to alcohol pricing and taxation, community-level policies and interventions to reduce alcohol availability, couples-based and individual-level alcohol treatment, and integrated alcohol and IPV perpetrator interventions effectively reduce or eliminate IPV-related outcomes. Further research is urgently needed to address the gaps in the evidence base.

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Appendices

Appendix 1. Detailed methods

Searching

A database of literature was compiled in EndNote based on systematic searches of the literature.

(i) *Systematic identification of theory*: Drawing on methods for the systematic identification of theory [15], including searches of electronic sources (Box 1), we identified theoretical and conceptual models of the relationship between alcohol and IPV. Targeted search strategies were developed by combining keyword terms for IPV and alcohol use with generic theory-related terms (i.e. theor* or concept* or framework).

(ii) *Systematic reviews and meta-analyses*: We identified relevant systematic reviews and meta-analyses through searches of electronic sources (Medline, PsycINFO, CINAHL, Web of Science Social Science Citation Index, Criminal Justice Abstracts and ETOH) and by drawing on the project team's previous work and knowledge of the alcohol and violence prevention literature (e.g. Violence Info). We developed targeted search strategies by combining keyword terms for IPV and alcohol use with a search filter for systematic reviews and meta-analyses. We also searched review-specific databases (Cochrane Database of Systematic Reviews, DARE, DoPHER, JBI Database and Epistemonikos) that index systematic reviews of effectiveness and cost-effectiveness.

Example Ovid Medline search strategy:

#	Search terms
1	intimate partner violence/ or spouse abuse/ or domestic violence/ or battered women/
2	((abuse* or violen* or rape or abuse or batter*) adj3 (woman or women or spous* or partner* or wife or wives or domestic* or home* or date or dating or marital or marriage)).tw.
3	1 or 2
4	alcohol drinking/ or binge drinking/ or drinking behavior/ or alcoholism/
5	(alcohol or drinking or binge or intoxication or intoxicated or alcoholi*).tw.
6	4 or 5
7	(search* or meta analy* or medline or pubmed or (systematic and review) or meta-review or meta-synthesis).tw.
8	(review or meta analy*).pt.
9	7 or 8
10	3 and 6 and 9

Study selection

We screened the results of the search to identify relevant studies in two stages. Firstly, two reviewers from a group of three (LJ, HG, NB) double screened 20% of titles and abstracts and we established levels of agreement between the reviewers. Any discrepancies were identified and resolved through discussion. A single reviewer (from the team of three) screened the remaining titles and abstracts. Full-text publications of any potentially relevant titles were retrieved and assessed against the inclusion criteria by two reviewers (LJ, HG).

Theoretical and conceptual models of the relationship between alcohol use and IPV: We included studies of any design that explicitly mentioned conceptual models or theories in the context of the relationship between IPV and alcohol use. Only studies that provided a clear description of the framework/theory/model were eligible for inclusion.

Empirical evidence underpinning the relationship between alcohol use and IPV: Systematic reviews and meta-analyses of observational studies that examined exposure to alcohol and the outcome of interest (IPV) were eligible for inclusion. We included systematic reviews and meta-analyses that (i) examined alcohol use among perpetrators and/or victims and its relationship to IPV; and (ii) examined IPV as the exposure and alcohol use as the outcome of interest.

Evidence on the effectiveness and cost-effectiveness of interventions that aim to prevent, respond to, or treat alcohol-related IPV: We included systematic reviews and meta-analyses of effectiveness studies based on experimental or observational designs, and cost-effectiveness studies that were full economic evaluations. Interventions of interest were all types of interventions that aimed to: (i) indirectly address IPV by aiming to reduce the availability and harmful use of alcohol; or (ii) directly addressed alcohol use and IPV together in any type of intervention or approach. Participants of interest included general population groups, those considered at high-risk of perpetrating or becoming a victim of IPV, and perpetrators and victims of IPV. The outcome of interest was IPV perpetration or victimisation.

Data extraction and quality assessment

We used a coding strategy to concisely record information from the included systematic reviews and meta-analyses. This included details about methods and findings in order to judge their relevance and reliability in addressing the overarching review questions. Details of the identified theories, frameworks and models were also extracted, including the framework name and a short description of their components.

For systematic reviews and meta-analyses, we judged quality according to the items on the AMSTAR 2 quality checklist¹.

Analysis

Findings were grouped by the review aims. A conceptual framework guided the overall analysis of the evidence, and the relevance and coherence of emerging conclusions was checked by reference to this framework. Initial assumptions were tested through an iterative process and the conceptual framework revised as necessary. For the review of effectiveness and cost-effectiveness, summary and tabulation of findings from the included studies was used to bring together the evidence on what works to prevent, respond to and treat alcohol-related IPV.

¹ Shea, B.J., Reeves, B.C., Wells, G., Thuku, M., Hamel C., Moran, J. et al. (2017) AMSTAR 2: a critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both. *BMJ*, 358, j4008.

Appendix 2. Data extraction tables

Reference	Search strategy	Inclusion criteria	Data extraction and QA	Methods of analysis
Bacchus et al., 2018	<p>Databases searched: Medline, EMBASE and PsycINFO</p> <p>Years searched: Beginning to 2016</p> <p>Keywords/MeSH terms: Full example strategy provided in <i>Supplementary Materials</i>.</p> <p>Other strategies: Reference list screening</p> <p>Limits: English-language publications.</p>	<p>Population(s): Women who experienced IPV within the past 12 months; aged 15 years and over.</p> <p>Exposure: Recent IPV victimisation; conceptualised as either the independent or dependent variable. All author definitions of 'recent IPV victimisation' that occurred up to and including 12 months prior were eligible.</p> <p>Outcome(s): Adverse health outcomes or health risk behaviours</p> <p>Study design(s): Longitudinal (cohort) studies (exposure or the outcome was measured on at least two occasions).</p> <p>Process for selection: One reviewer screened title/abstracts</p>	<p>Data extraction variables: Not reported</p> <p>Process for data extraction: One reviewer completed data extraction</p> <p>Details of QA tool/checklist: Reviewer quality appraisal</p> <p>Process for quality assessment: Attrition, timeframe, adjusted for confounders, effect estimate</p>	<p>How were studies combined: Random effects meta-analysis</p> <p>Measure of effect: Odds ratio</p> <p>Assessment of heterogeneity: I²</p> <p>Assessment of publication bias: Not possible to quantitatively assess as too few studies.</p> <p>Sensitivity analyses: NR</p>
Badenes-Ribera et al., 2016	<p>Databases searched: Pubmed & PsycInfo</p> <p>Years searched: 1990 to 2013</p> <p>Keywords/MeSH terms: Intimate partner violence and lesbian, lesbian domestic violence, lesbian violence, lesbian battering, and abusive lesbian relationship</p> <p>Other strategies: Manual search performed of journals; manual review of included reference lists; contacted experts in the field</p> <p>Limits: None</p>	<p>Population(s): General population; self-identified lesbians in same-sex couples, aged 16 years old or more (excluded studies of drug users; persons accessing domestic violence assistance resources; or samples coming from psychological treatment, therapies, prison, racial minorities)</p> <p>Exposure: Alcohol consumption</p> <p>Outcome(s): IPV</p> <p>Study design(s): Quantitative studies reporting prevalence of IPV and/or its correlates. Sample size ≥50.</p> <p>Process for selection: Independently by two researchers</p>	<p>Data extraction variables: n study characteristics (authors and year, research design, geographic location, definition of violence, and measurement instrument), sample characteristics (size, age, ethnicity, educational level, and income level), prevalence of victimisation and perpetration of intimate partner violence, and IPV correlates.</p> <p>Process for data extraction: Independently by two researchers</p> <p>Details of QA tool/checklist: Methodological criteria rating guide for descriptive studies on same-sex partner violence</p> <p>Process for quality assessment: Independently by two researchers</p>	<p>How were studies combined: Narrative synthesis</p> <p>Measure of effect: NA</p> <p>Assessment of heterogeneity: NA</p> <p>Assessment of publication bias: NA</p> <p>Sensitivity analyses: NA</p>

Reference	Search strategy	Inclusion criteria	Data extraction and QA	Methods of analysis
Buller et al., 2014	<p>Databases searched: MEDLINE, EMBASE, Global Health, PsycINFO, HMIC, CINAHL, Social Policy and Practice, IBSS, Web of Science, Africa Web, IMSEAR, IMEMR, LILACS</p> <p>Years searched: First record to 23 October 2013</p> <p>Keywords/MESH terms: Terms for IPV and MSM were adapted from Cochrane protocols and peer-reviewed systematic reviews</p> <p>Other strategies: Reference lists of all included studies were searched; backward and forward citation tracking; hand searched three journals; consulted experts.</p> <p>Limits: None</p>	<p>Population(s): Men who have sex with men</p> <p>Exposure*: Experience and perpetration of IPV</p> <p>Outcome(s): Health and sexual risk behaviours</p> <p>Study design(s): Cohort studies, case-control studies, or cross-sectional studies</p> <p>Process for selection: Two authors screened abstracts and full texts</p> <p>*Excluded if: (a) reported on adult sexual assault or non-consensual sex outside of an intimate relationship; (b) reported IPV in a specific group that made it difficult to generalise the results to the wider population, such as IPV in the armed forces, among prison inmates, or in HIV positive individuals.</p>	<p>Data extraction variables: Study design; sample characteristics; definitions and measures of IPV; the health conditions and sexual risk behaviours measured; and their effect estimates and measures of uncertainty. Details about confounders controlled for were also recorded.</p> <p>Process for data extraction: Two authors extracted data</p> <p>Details of QA tool/checklist: Strengthening the Reporting of Observational Studies in Epidemiology</p> <p>Process for quality assessment: Two authors appraised quality</p>	<p>How were studies combined: Random effects meta-analysis</p> <p>Measure of effect: Odds ratio</p> <p>Assessment of heterogeneity: Higgins' I²</p> <p>Assessment of publication bias: Funnel plot assessment</p> <p>Sensitivity analyses: NR</p>

Reference	Search strategy	Inclusion criteria	Data extraction and QA	Methods of analysis
Cafferky et al., 2018	<p>Databases searched: ERIC, Medline, PsychLit, Social Sciences Abstracts, Sociological Abstracts, and Social Sciences Citations Index, Web of Science, PROQUEST, MEDLINE, PsycINFO, Social Services Abstracts, and Sociological Abstracts</p> <p>Years searched: 1980 to 2000; 2001 to 2012; prior to 2013</p> <p>Keywords/MESH terms: intimate partner and abuse, intimate; partner and violence; spousal/spouse and violence, spousal/spouse abuse, spousal/spouse and aggression, family and violence, family and abuse, family and aggression, couple and violence, couple etc.</p> <p>Other strategies: Handpicked through family violence journals, and abstracts from national conferences. Prominent IPV researchers were contacted. Handpicked references from 12 comprehensive reviews/meta-analyses on IPV.</p> <p>Limits: English language.</p>	<p>Population(s): Heterosexual adults. Excluded studies that used adolescent or university samples which focused on dating violence.</p> <p>Exposure: Alcohol consumption</p> <p>Outcome(s): Physical IPV. Excluded if did not differentiate results by victimisation or perpetration.</p> <p>Study design(s): Not reported; included if statistics sufficient for calculating at least one bivariate ES</p> <p>Process for selection: Not reported</p>	<p>Data extraction variables: Published or unpublished, type of publication (e.g. journal article, thesis, or dissertation), dyadic or non-dyadic data, domestic or international sample, substance use measurement instrument, and nonclinical or clinical populations (a study was coded as clinical if participants were from a women's shelter, hospital/emergency care, couples therapy, batterer intervention or substance use program, psychologist/psychiatrist/outpatient mental health clinic, or prison)</p> <p>Process for data extraction: Graduate student research coding team who met with project leaders</p> <p>Details of QA tool/checklist: Not reported</p> <p>Process for quality assessment: Not reported</p>	<p>How were studies combined: Random effects meta-analysis</p> <p>Measure of effect: Correlation coefficient r</p> <p>Assessment of heterogeneity: I^2 statistic</p> <p>Assessment of publication bias: the trim and fill test; the Fail-safe N; Orwin's Fail-safe N</p> <p>Sensitivity analyses: NR</p>

Reference	Search strategy	Inclusion criteria	Data extraction and QA	Methods of analysis
Crane et al., 2016	<p>Databases searched: PsycINFO, PubMed</p> <p>Years searched: Prior to 2014</p> <p>Keywords/MESH terms: Aggression (i.e. Sexual Aggression, Sexual Assault, Sexual Violence, Partner Aggression, Partner Violence, Domestic Violence, Marital Violence, Dating Violence) and laboratory (i.e. Challenge, Manipulation, Placebo, BAC, BAL, BIAC, BrAC)</p> <p>Other strategies: Review through the references included</p> <p>Limits: English language.</p>	<p>Population(s): Alcohol consumption and male-to-female aggression</p> <p>Exposure: An alcohol exposed group and a suitable control group (e.g. no alcohol or placebo)</p> <p>Outcome(s): Male-to-female aggression</p> <p>Study design(s): Experimental studies. Needed to present data pertaining to a laboratory-based experiment</p> <p>Process for selection: Not reported</p>	<p>Data extraction variables: Sample characteristics (e.g. size, age, and ethnic composition), measures of aggression, and the alcohol manipulation. The aggression paradigm, interactive nature of the paradigm, the method of quantifying the outcome, the participant's relationship to the victim, and aggression scores. Finally, coders recorded the active alcohol dose and the specified type of control group.</p> <p>Process for data extraction: Double coding</p> <p>Details of QA tool/checklist: Not reported</p> <p>Process for quality assessment: Not reported</p>	<p>How were studies combined: Random effects meta-analysis</p> <p>Measure of effect: Cohen's <i>d</i></p> <p>Assessment of heterogeneity: Cochran's Q</p> <p>Assessment of publication bias: Failsafe N</p> <p>Sensitivity analyses: NR</p>
Devries et al., 2014	<p>Databases searched: 23 databases</p> <p>Years searched: First records to 2008</p> <p>Keywords/MESH terms: Terms included 'domestic violence', 'alcohol'</p> <p>Other strategies: Researchers were contacted to identify additional studies, and searched the internet to find additional population-based surveys</p> <p>Limits: None</p>	<p>Population(s): Women who had experienced IPV</p> <p>Exposure: IPV/Alcohol consumption</p> <p>Outcome(s): Alcohol consumption in women/IPV</p> <p>Study design(s): Cross-sectional and longitudinal</p> <p>Process for selection: Not reported</p>	<p>Data extraction variables: Study characteristics, quality information and estimates of association</p> <p>Process for data extraction: Data from studies were extracted by trained violence researchers fluent in the language used by study authors. Extracted data for all included studies were checked for accuracy and completeness.</p> <p>Details of QA tool/checklist: A range of items to collect information related to quality, drawing on bias assessment tools for different study designs from the UK National Institutes of Clinical Excellence and the Cochrane EPOC Group</p> <p>Process for quality assessment: Not reported</p>	<p>How were studies combined: Random effects meta-analysis</p> <p>Measure of effect: Odds ratio</p> <p>Assessment of heterogeneity: I^2 statistic</p> <p>Assessment of publication bias: NR</p> <p>Sensitivity analyses: NR</p>

Reference	Search strategy	Inclusion criteria	Data extraction and QA	Methods of analysis
Foran & O'Leary, 2008	<p>Databases searched: PsycINFO, PsycARTICLES</p> <p>Years searched: 1980 and 2006</p> <p>Keywords/MESH terms: alcohol, partner aggression, domestic violence, intimate partner violence, couples, aggression, physical abuse, and alcohol abuse</p> <p>Other strategies: Reference lists of identified articles</p> <p>Limits: Published, peer-reviewed studies. English language.</p>	<p>Population(s): Perpetrators of abuse. Study participants had to be at least 18 years of age.</p> <p>Exposure: Alcohol use. Multiple effect sizes from a single study were included to permit comparisons across measures (e.g. frequency consumed vs. abuse/dependence);</p> <p>Outcome(s): Female-to-male or male-to-female physical IPV. Had to be reported alone not as a combined-report of sexual and/or psychological aggression.</p> <p>Study design(s): Not reported. Studies had to report enough information to compute an effect size for perpetrator alcohol use/abuse and physical aggression and have a sample size >20.</p> <p>Process for selection: Not reported</p>	<p>Data extraction variables: Type of sample (clinical, community, clinical vs. non-clinical) and characteristics of alcohol and aggression measurement.</p> <p>Process for data extraction: A graduate student in clinical psychology coded 30% of the studies</p> <p>Details of QA tool/checklist: Not reported</p> <p>Process for quality assessment: Not reported</p>	<p>How were studies combined: 'Mixed effect model' meta-analysis</p> <p>Measure of effect: Point-biserial correlation or Pearson's r</p> <p>Assessment of heterogeneity: Cochran's Q</p> <p>Assessment of publication bias: NR</p> <p>Sensitivity analyses: NR</p>
Gil-Gonzalez et al., 2006	<p>Databases searched: ISI Current Contents, Medline, CINAHL, Psycinfo, Econlit, Francis, Sociological Abstracts, and Eric.</p> <p>Years searched: Inception to February/March 2004</p> <p>Keywords/MESH terms: Battered women and alcohol, violence against women and alcohol, domestic violence and alcohol, gender-based violence and alcohol, and gender violence and alcohol</p> <p>Other strategies: Not reported</p> <p>Limits: None</p>	<p>Population(s): Not reported</p> <p>Exposure: Male alcohol consumption</p> <p>Outcome(s): Physical intimate partner violence</p> <p>Study design(s): Quantitative empirical research</p> <p>Process for selection: Not reported</p>	<p>Data extraction variables: Degree of alcohol consumption, how alcohol consumption was measured, epidemiological design used, and sampling method; control of confounding variables; and, possible biases within the studies</p> <p>Process for data extraction: Coded independently by two authors</p> <p>Details of QA tool/checklist: Not reported</p> <p>Process for quality assessment: Not reported</p>	<p>How were studies combined: Random effects meta-analysis</p> <p>Measure of effect: Odds ratio</p> <p>Assessment of heterogeneity: Visual assessment of funnel plot and forest plot</p> <p>Assessment of publication bias: Narrative overview of bias</p> <p>Sensitivity analyses: NR</p>

Reference	Search strategy	Inclusion criteria	Data extraction and QA	Methods of analysis
Gilchrist et al., 2019	<p>Databases searched: PsycINFO, ASSIA, Web of Science</p> <p>Years searched: Jan 1995 – Dec 2016. Updated to Dec 2017.</p> <p>Keywords/MESH terms: IPV act terms, qualitative research terms, and IPV actor terms (full list provided in table).</p> <p>Other strategies: Experts were contacted; key author forward and backward citation tracking</p> <p>Limits: English language studies.</p>	<p>Population(s): Heterosexual adult (≥18 years old) IPV survivors and/or perpetrators</p> <p>Phenomenon of Interest: Survivor or perpetrator accounts of IPV (as opposed to, for example, coping with IPV or help seeking for IPV)</p> <p>Context: Interplay between substance use and IPV perpetration</p> <p>Study design(s): Primary qualitative studies or studies that had a qualitative component (e.g. mixed-methods studies)</p> <p>Process for selection: One reviewer screened the texts; 10% checked by second reviewer</p>	<p>Data extraction variables: Studies' aims, context, methods, sample, and perspective, alongside relevant participant quotes and authors' key concepts and interpretations</p> <p>Process for data extraction: Four reviewers independently built third order interpretations</p> <p>Details of QA tool/checklist: 'Eight Big-Tent Criteria for Excellent Qualitative Research'</p> <p>Process for quality assessment: Two reviewers independently assessed the quality of included studies</p>	<p>How were studies combined: 'Translation-based' meta-ethnography</p> <p>Measure of effect: NA</p> <p>Assessment of heterogeneity: NA</p> <p>Assessment of publication bias: NA</p> <p>Sensitivity analyses: NA</p>
Rothman et al., 2012	<p>Databases searched: ISI Web of Knowledge database, PsycINFO</p> <p>Years searched: 1985 to 2010</p> <p>Keywords/MESH terms: "alcohol" and "dating abuse" was used, as well as the combinations of each of the following keywords with "alcohol": "dating violence," "dating aggression," "partner violence," "partner abuse," "date fighting," and "courtship violence."</p> <p>Other strategies: The reference sections of obtained articles were searched</p> <p>Limits: None</p>	<p>Population(s): Youth aged 11 to 21 years. Excluded studies that analysed sexual violence against non-dating partners.</p> <p>Exposure: Alcohol use</p> <p>Outcome(s): Dating violence perpetration.</p> <p>Study design(s): Longitudinal and cross-sectional</p> <p>Process for selection: Not reported</p>	<p>Data extraction variables: Analytic sample size, sample population, and setting of study (abbreviated as sample), age of study participants (abbreviated as age), way that alcohol use was operationalised in the calculation of interest for this review (abbreviated as alcohol), way that partner violence perpetration was operationalised in the calculation of interest (abbreviated as DVP), any covariates included in adjusted analyses, where relevant, crude effect of the relation between alcohol use and DVP, and adjusted effect of the same.</p> <p>Process for data extraction: 2 reviewers</p> <p>Details of QA tool/checklist: Not reported</p> <p>Process for quality assessment: Not reported</p>	<p>How were studies combined: Fixed and random effects meta-analysis</p> <p>Measure of effect: Odds ratio</p> <p>Assessment of heterogeneity: Cochran's Q, I² statistic</p> <p>Assessment of publication bias: Visually inspected funnel plots</p> <p>Sensitivity analyses: NR</p>

Reference	Search strategy	Inclusion criteria	Data extraction and QA	Methods of analysis
Spencer et al., 2019	<p>Databases searched: ProQuest ResearchLibrary, ProQuest Theses and Dissertations Global, PsycINFO, SocialServices Abstracts, Sociological Abstracts</p> <p>Years searched: 1980 to 2016</p> <p>Keywords/MESH terms: Intimate partner, spouse abuse, domestic violence, aggression, maltreatment, violence, risk, factors</p> <p>Other strategies: Screening conference abstracts or reference lists from comprehensive reviews</p> <p>Limits: English language</p>	<p>Population(s): Heterosexual adults in married or cohabitating samples</p> <p>Exposure: Univariate or bivariate effect sizes of risk markers</p> <p>Outcome(s): Physical IPV victimisation</p> <p>Study design(s): Not reported, studies had to report univariate or bivariate effect sizes of risk markers</p> <p>Process for selection: Not reported</p>	<p>Data extraction variables: Not reported</p> <p>Process for data extraction: Used 37-item coding sheet to gather study information and effect sizes</p> <p>Details of QA tool/checklist: Not reported</p> <p>Process for quality assessment: Not reported</p>	<p>How were studies combined: Random effects meta-analysis</p> <p>Measure of effect: Correlation coefficient <i>r</i></p> <p>Assessment of heterogeneity: Cochran's Q</p> <p>Assessment of publication bias: the trim and fill test; fail-safe N; Orwin's fail-safe N</p> <p>Sensitivity analyses: NR</p>
Warmling et al., 2017 (Warmling, Lindner and Coelho, 2017)	<p>Databases searched: PubMed, Lilacs, PsycInfo</p> <p>Years searched: NR</p> <p>Keywords/MESH terms: "Intimate Partner Violence"; "Spouse abuse"; "Prevalence"; "Cross-Sectional Studies"; "aged"; "aged, 80 and over"; "80 and over aged"; elderly</p> <p>Other strategies: Manual search was done for other potentially eligible publications</p> <p>Limits: None</p>	<p>Population(s): Elderly</p> <p>Exposure: IPV and associated factors</p> <p>Outcome(s): IPV and associated factors</p> <p>Study design(s): Cross-sectional population-based studies</p> <p>Process for selection: Selected by two independent reviewers</p>	<p>Data extraction variables: Year and place of collection, gender and age of respondents, sample size and violence measurement tool, prevalence and factors associated with IPV</p> <p>Process for data extraction: Not reported</p> <p>Details of QA tool/checklist: QA tool proposed by Loney et al. 1998 (Ref title: Critical appraisal of the health research literature: prevalence or incidence of a health problem. Chronic Dis Can 1998; 19(4):170-176)</p> <p>Process for quality assessment: Not reported</p>	<p>How were studies combined: Narrative synthesis</p> <p>Measure of effect: NA</p> <p>Assessment of heterogeneity: NA.</p> <p>Assessment of publication bias: NA</p> <p>Sensitivity analyses: NA</p>

Reference	Search strategy	Inclusion criteria	Data extraction and QA	Methods of analysis
Gilchrist et al., 2015	<p>Databases searched: Cochrane Library (Issue 2, 2012), MEDLINE (1950 to 1 January 2012), CINAHL (1982 to January 2012) and PsycINFO (1806 to week 4, January 2012)</p> <p>Years searched: See above</p> <p>Keywords/MESH terms: Anger Control, Anger, Intervention Therapy, Conflict Resolution, Anger Management, Relationship Therapy or “intervention types” and both “Intimate partner violence” and “substance abuse” terms</p> <p>Other strategies: Articles were reviewed for relevant studies; backward and forward citation</p> <p>Limits: None</p>	<p>Population(s): Adult male physical IPV offenders. All available trials where alcohol use was assessed or described at baseline were included.</p> <p>Intervention: CBT and included components of anger management.</p> <p>Comparator: Other intervention or no intervention.</p> <p>Outcome(s): Physical IPV</p> <p>Study design(s): Randomised controlled trials</p> <p>Process for selection: Two authors independently assessed all articles</p>	<p>Data extraction variables: The sample, setting and inclusion criteria, the intervention and control conditions, assessments and results</p> <p>Process for data extraction: Two authors independently extracted all data</p> <p>Details of QA tool/checklist: JADAD scale</p> <p>Process for quality assessment: Two authors independently assessed quality</p>	<p>How were studies combined: Narrative synthesis</p> <p>Measure of effect: NA</p> <p>Assessment of heterogeneity: NA</p> <p>Assessment of publication bias: NA</p> <p>Sensitivity analyses: NA</p>
Stephens-Lewis et al., in press	<p>Databases searched: MEDLINE, EMBASE, CINAHL, PsycINFO, SSCI, IBSS and Social Services Abstracts</p> <p>Years searched: Inception to May 2018. MEDLINE searches updated to April 2019.</p> <p>Keywords/MESH terms: IPV, interventions, and substance use. Example strategy provided in online file.</p> <p>Other strategies: Consulting experts; clinical trial databases; forward and backward citation searching</p> <p>Limits: None</p>	<p>Population(s): Adult heterosexual males. At least 60% described as current hazardous drinker or met criteria for abuse or dependence on alcohol or drugs</p> <p>Intervention: Targeted IPV or relationship</p> <p>Comparator: IPV perpetrator or substance use treatment as usual, or intervention or lesser intensity or frequency</p> <p>Outcome(s): Perpetrator and/or victim reports of IPV perpetration, and/or SU, and/or marital satisfaction/conflict</p> <p>Study design(s): Randomised controlled trials or non-randomised controlled trials</p> <p>Process for selection: Titles and abstracts were assessed by two reviewers</p>	<p>Data extraction variables: Based on TIDieR checklist</p> <p>Process for data extraction: Two reviewers extracted data</p> <p>Details of QA tool/checklist: Cochrane EPOC tool for assessing risk of bias</p> <p>Process for quality assessment: Two reviewers assessed trial methodological quality.</p>	<p>How were studies combined: Narrative synthesis, random effects meta-analysis</p> <p>Measure of effect: Mean difference</p> <p>Assessment of heterogeneity: I² statistic</p> <p>Assessment of publication bias: NR</p> <p>Sensitivity analyses: NR</p>

Reference	Search strategy	Inclusion criteria	Data extraction and QA	Methods of analysis
Tait et al., 2015	<p>Databases searched: PsycInfo, Embase, Global Health, and Medline, CINAHI, Pubmed, ProQuest</p> <p>Years searched: June 2003 to January 2015</p> <p>Keywords/MESH terms: (computer OR online OR CD-ROM) AND (alcohol OR alcohol intoxication OR alcohol abuse OR alcohol related problems) AND (rape OR sexual assault OR intimate partner violence OR date rape)</p> <p>Other strategies: NR</p> <p>Limits: Peer reviewed publications.</p>	<p>Population(s): Studies of male-to-female, female-to-male and same-sex partner violence were eligible</p> <p>Intervention: Online or computer-based brief interventions</p> <p>Comparator: Not reported</p> <p>Outcome(s): Measures of changes in alcohol use and outcomes relating to sexual assault (excluded engaging in unsafe sex or sex that was later regretted but included sexual events where there was no consent) or IPV.</p> <p>Study design(s): Any design; not limited to RCTs</p> <p>Process for selection: NR</p>	<p>Data extraction variables: Study characteristics (interventions, measures), effect sizes, characteristics of sample</p> <p>Process for data extraction: Not reported</p> <p>Details of QA tool/checklist: Cochrane Risk of Bias tool</p> <p>Process for quality assessment: Not reported</p>	<p>How were studies combined: Narrative synthesis</p> <p>Measure of effect: Cohen's <i>d</i> calculated for individual studies</p> <p>Assessment of heterogeneity: NA</p> <p>Assessment of publication bias: NA</p> <p>Sensitivity analyses: NA</p>
Tarzia et al., 2017	<p>Databases searched: Medline, CINAHL, PsycInfo, EMBASE, Cochrane Library, and Google Scholar</p> <p>Years searched: Prior to March 2017</p> <p>Keywords/MESH terms: Full example strategy provided.</p> <p>Other strategies: World Health Organization website and Google were searched for additional grey literature. Reference lists of identified papers were examined in order to identify other relevant studies.</p> <p>Limits: None</p>	<p>Population(s): Men aged over 16 years of age who were victims and/or perpetrators of IPV</p> <p>Intervention: Any type of intervention intended to identify or respond to male perpetrators or victims of IPV</p> <p>Comparator: Not reported</p> <p>Outcome(s): IPV perpetration or victimisation</p> <p>Study design(s): Systematic reviews, meta-analyses, randomized controlled trials [RCTs], case-control studies, cohort studies, cross-sectional studies, and qualitative studies</p> <p>Process for selection: Two reviewers screened titles and abstracts</p>	<p>Data extraction variables: Year, study type, sample size and characteristics, type of intervention, and outcomes</p> <p>Process for data extraction: Two reviewers extracted data with a third and fourth consulted</p> <p>Details of QA tool/checklist: Grades of Recommendation, Assessment, Development, and Evaluation (GRADE)</p> <p>Process for quality assessment: Two reviewers quality assessed included articles</p>	<p>How were studies combined: Narrative synthesis</p> <p>Measure of effect: NA</p> <p>Assessment of heterogeneity: NA</p> <p>Assessment of publication bias: NA</p> <p>Sensitivity analyses: NA</p> <p>Dose-response analyses: NA</p>

Reference	Search strategy	Inclusion criteria	Data extraction and QA	Methods of analysis
Wilson et al., 2014	<p>Databases searched: Medline, CINAHL, EMBASE, PsycINFO, Proquest Central, Cochrane Library, Campbell Collaboration Library, ATSI Health, Drug and Rural Health, and Women's Studies International</p> <p>Years searched: 1992 to 2013</p> <p>Keywords/MESH terms: (i) Alcohol use, (ii) IPV, and (iii) interventions, using medical subject headings</p> <p>Other strategies: Hand searching reference lists and contacting key experts</p> <p>Limits: None</p>	<p>Population(s): Aged 18 years and older and IPV perpetration by either sex within a current heterosexual or homosexual dating, co-habiting or marital relationship, or from a former partner</p> <p>Intervention: Any intervention or policy to reduce alcohol consumption</p> <p>Comparator: Not reported</p> <p>Outcome(s): Change in any form of IPV</p> <p>Study design(s): Randomised controlled trials, longitudinal studies</p> <p>Process for selection: One reviewer initially reviewed title and abstracts</p>	<p>Data extraction variables: PICOS criteria - population/sample, intervention, controls or comparisons, outcomes (IPV and alcohol consumption and other measures pertaining to IPV) and study design</p> <p>Process for data extraction: Two reviewers extracted data</p> <p>Details of QA tool/checklist: Not reported</p> <p>Process for quality assessment: Not reported</p>	<p>How were studies combined: Narrative synthesis</p> <p>Measure of effect: NA</p> <p>Assessment of heterogeneity: NA</p> <p>Assessment of publication bias: NA</p> <p>Sensitivity analyses: NA</p> <p>Dose-response analyses: NA</p>

Appendix 3. AMSTAR 2 assessment

Author & Year	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Bacchus et al., 2018	N	PY	N	PY	N	N	N	PY	NA	N	Y	N	N	Y	N	Y
Badenes-Ribera et al., 2016	N	N	N	PY	Y	Y	N	PY	NA	N	NMA	NMA	N	N	NMA	Y
Buller et al., 2014	N	PY	Y	Y	Y	Y	N	PY	Y	N	N	N	N	Y	Y	Y
Cafferky et al., 2018	N	N	N	Y	?	Y	N	PY	PY	N	Y	Y	N	Y	Y	N
Crane et al., 2016	N	N	Y	PY	?	Y	N	PY	N	N	Y	N	N	Y	N	N
Devries et al., 2014	N	N	Y	PY	?	Y	N	PY	PY	N	Y	N	Y	Y	Y	N
Foran & O'Leary, 2008	N	N	N	PY	?	N	N	PY	N	N	Y	N	N	Y	N	N
Gilchrist et al., 2015	Y	N	N	PY	Y	Y	N	PY	PY	N	NMA	NMA	N	N	NMA	N
Gilchrist et al., 2019	N	N	Y	PY	Y	Y	N	Y	NA	N	NMA	NMA	N	N	NMA	Y
Gil-Gonzalez et al., 2006	N	N	N	PY	?	Y	N	PY	PY	N	Y	N	N	Y	N	N
Rothman et al., 2012	N	N	N	PY	?	Y	N	PY	PY	N	Y	N	N	Y	N	Y
Spencer, 2019	Y	N	N	Y	?	Y	N	N	PY	N	Y	?	N	N	Y	N
Stephens-Lewis et al., in press	Y	Y	Y	Y	Y	Y	N	Y	Y	N	Y	Y	Y	Y	N	Y
Tait et al., 2015	N	N	Y	PY	?	?	N	PY	PY	N	NMA	NMA	N	N	NMA	Y
Tarzia et al., 2017	N	PY	Y	PY	Y	N	N	PY	PY	N	NMA	NMA	Y	Y	NMA	Y
Warmling et al., 2017	N	PY	N	PY	Y	?	N	PY	N	N	NMA	NMA	N	Y	NMA	N
Wilson et al., 2014	Y	N	Y	PY	?	Y	N	N	NA	N	NMA	NMA	N	Y	NMA	Y

N=No. Y=Yes. PY=Partial Yes. NMA=No meta-analysis. ?=Can't tell.

Appendix 4. References to primary studies summarised in Table 2

- Alexander, P.C., Morris, E., Tracy, A. and Frye, A. (2010) Stages of change and the group treatment of batterers: A randomized clinical trial. *Violence and Victims*, 25 (5), 571-587.
- Brannen, S.J. and Rubin, A. (1996) Comparing the effectiveness of gender-specific and couples groups in a court-mandated spouse abuse treatment program. *Research on Social Work Practice*, 6 (4), 405-424.
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- Dunford, F.W. (2000) The San Diego Navy experiment: an assessment of interventions for men who assault their wives. *Journal of Consulting and Clinical Psychology*, 68 (3), 468-476.
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- Kraanen, F.L., Vedel, E., Scholing, A. and Emmelkamp, P.M. (2013) The comparative effectiveness of Integrated treatment for Substance abuse and Partner violence (I-StoP) and substance abuse treatment alone: a randomized controlled trial. *BMC Psychiatry*, 13 (1), 189.
- Livingston, M. (2011) A longitudinal analysis of alcohol outlet density and domestic violence. *Addiction*, 106 (5), 919– 925.
- Markowitz, S. (2000) The price of alcohol, wife abuse, and husband abuse. *Southern Economic Journal*, 279-303.
- Mbilinyi, L.F., Neighbors, C., Walker, D.D., Roffman, R.A., Zegree, J., Edleson, J. and O'Rourke, A. (2011) A telephone intervention for substance-using adult male perpetrators of intimate partner violence. *Research on Social Work Practice*, 21 (1), 43-56.
- Murphy, C.M., Ting, L.A., Jordan, L.C., Musser, P.H., Winters, J.J., Poole, G.M. and Pitts, S.C. (2018) A randomized clinical trial of motivational enhancement therapy for alcohol problems in

partner violent men. *Journal of Substance Abuse Treatment*, 89, 11-19.

O'Farrell, T.J., Murphy, C.M., Stephan, S.H., Fals-Stewart, W. and Murphy, M., 2004. Partner violence before and after couples-based alcoholism treatment for male alcoholic patients: the role of treatment involvement and abstinence. *Journal of Consulting and Clinical Psychology*, 72 (2), 202-217.

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