Male alcohol consumption is one of the accepted risk factors for intimate partner violence.1,2 The scientific literature often supports this association, not only considering that alcohol use in males plays an important role in the occurrence of intimate partner violence,3,4 but also promoting rehabilitation programmes addressed to ameliorate this problem.5–7 Male alcohol consumption has also been integrated in the most controversial nature. An evidence-based approach could provide valuable information to support preventive policies based on male alcohol consumption as a risk factor in the particular case of intimate partner violence.

## Methods


The keywords used were as follows: battered women and alcohol, violence against women and alcohol, domestic violence and alcohol, gender-based violence and alcohol, and gender violence and alcohol. From the identified papers, the quantitative empirical ones analysing the causal relationship between male alcohol consumption and physical intimate partner violence were selected for the systematic review.

Next, the selected studies were codified independently by two authors (C.V. and D.G.), using an ad hoc developed checklist. This checklist was made up of the following variables: degree of alcohol consumption (codified as ‘chronic’, ‘acute intoxication’, ‘not specified’), how alcohol consumption was measured (codified as ‘in batterers blood’, ‘by a third person’, and ‘no specified’), epidemiological design used (cohort, case-control, cross-sectional, ecological, case–series study), and sampling method (intentional, random, stratified, and no sampling); control of confounding variables; and, possible biases within the studies (selection, misclassification, and confounding) following the operative definitions given by Last in his Dictionary of epidemiology (4th edition).8–10

Since the present study aimed at assessing the magnitude of the association between male alcohol consumption and intimate partner violence, a descriptive statistical analysis was performed with the included papers, using SPSS–11 and Excel–2000 commercial software. Additionally, those studies from the systematic review that calculated crude odds ratio or had available 2 × 2 tables were analysed using meta-analytic techniques with Stats Direct v 4.1.11 In some studies, tables that only...
provided summary statistics could not be reconstructed. In order to include this information, a summary random effect meta-analysis was performed. On the one hand, the heterogeneity between studies was assessed graphically using the funnel plot (figure 1) of the standard error versus the observed effect. On the other hand, the relationship between the observed odds ratio and the study’s year of publication was also examined through the forest plot (figure 2). Lastly, in order to further measure the degree of the possible association between the variables’ year of publication and odds ratio of the studies, a Spearman’s rank correlation was also calculated.

Results

In this study, 1035 papers were identified for potential inclusion: 336 papers through the ‘battered women and alcohol’ keywords, 283 through ‘violence against women and alcohol’, and finally 416 through the ‘domestic violence and alcohol’ keywords. No papers were found when using the keywords ‘gender-based violence and alcohol’ and ‘gender violence and alcohol’. A total of 1013 of the studies (98%) were excluded, since the majority of them focused on other victims of violence, such as children, older people, and men (n = 580, 57.1%), while others consisted of intervention programme evaluations (n = 113, 11.2%) instead of the problem of violence against women. In addition, theoretical reviews, book reviews, editorials, qualitative studies, and summary of conferences were excluded. Table 1 outlines the reasoning behind this exclusion.

Systematic review

Only 22 of the studies published from 1996 to 2003 were included for the systematic review.22–43 All of them were related with physical intimate partner violence. 12 of them (54.5%)23–26,31–37,39 did not analyse the relationship between alcohol and violence as their primary hypothesis. Moreover, only 2 (9.1%) of the 22 studies33,41 made use of a direct measure of male alcohol consumption.

As for the epidemiological design of the papers, 14 (63.6%) of the selected studies consisted of a cross-sectional design,24,25,27,30,32,33,35–37,39,40–43 6 (27.3%) were case–series,23,28,29,31,34,38 and 2 (9.1%) were case–control studies.22,26 No cohort studies were found. Besides, intentional sampling was used in 13 (59%) studies,22,26–28,29,33,36,38,39,41,43 random sampling in 8 (36.6%) studies,23–25,27,34,37,40,42 and stratified sampling in 1 paper35 (4.5%).

As far as possible biases are concerned, all the papers specified clearly their exclusion and inclusion criteria. Also, the authors of the papers stated that confusion variables were controlled in 15 (68.2%) of the studies.22–27,30,33–37,39,40–43 A potential selection bias could not be identified in 19 (86.4%) studies.22–28,30–37,39–41,43 And no evidence of a potential misclassification bias of the outcome was found in 18 (81.8%) of the studies.22,24–32,35–41,43 Nonetheless, a potential misclassification bias in the exposure was observed in 15 (68.2%) of the studies.22–30,32,34,35,38,39,42

Meta-analysis

Table 2 outlines the most important features of the 11 studies included in the meta-analysis.22,24–26,30,33,35–37,39,40 An analysis of the role of male alcohol consumption as a predictive or determinant factor of intimate partner violence was found in all of them, of which two were case–control22,26 studies and nine were cross-sectional24,25,30,33,35–37,39,40 studies.

All of the studies which considered the causal association between male alcohol consumption and intimate partner violence showed a statistically significant risk excess. Nonetheless a high degree of heterogeneity regarding their most important features was observed (figure 1).

The relationship between odds ratio and the year of publication of the studies was also analysed. It could be observed that the different odds ratio decreased over time (figure 2). Thus, studies with bigger odds ratio and with broad confidence intervals were published in 1996 and 1998.30,22 In after years, the odds ratios decreased and smaller values could be found. For instance, the most recent study’s38 (2003) odds ratio has a value near to the combined odds ratio, and is lower in comparison with the odds ratio of the oldest study analysed30 (1996).

Lastly, a possible relationship between the sample size of the studies and their odds ratio was also assessed. A smaller odds ratio (figure 2) was observed in studies with big samples; while
The Spearman’s rank correlation between the year of publication and odds ratio obtained a value $r_s = 0.782$ ($P < 0.05$). The Spearman’s rank correlation between the year of publication and odds ratio obtained a value $r_s = 0.782$ ($P < 0.05$). The highest odds ratio were identified in studies with smaller sample sizes and broader confidence intervals.

**Spearman’s rank correlation**

The Spearman’s rank correlation between the year of publication and odds ratio obtained a value $r_s = 0.782$ ($P < 0.05$). The Spearman’s rank correlation between the year of publication and odds ratio obtained a value $r_s = 0.782$ ($P < 0.05$). The highest odds ratio were identified in studies with smaller sample sizes and broader confidence intervals.

**Discussion**

Evidence linking male alcohol consumption to violence against women is not strong enough. The lack of designs with enough inferential power (e.g., cohort studies) and the possibility of a publication bias stand in its way. Consequently, decisions on the development of male rehabilitation programmes as a result of intimate partner violence prevention policies are not evidence-based. Therefore, a better understanding about the causes of the problem is crucial for the effectiveness of the policy. New studies are urgently needed to explore the empirical evidence of the relationship between intimate partner violence and other risk factors.

Because grey literature has not been searched in this study and it is widely known that policy-makers make use of this information when designing their action programmes, this fact might be regarded as a limitation on the present study. The different cultural and political contexts of the countries where the intimate partner violence is studied in the papers reviewed, the number of these finally included in the meta-analysis, their heterogeneity, and their low quality seriously damages the credibility of the pooled odds ratio. In this respect, publication biases are probably one of the main sources of heterogeneity. The first two papers published on this subject (1996 and 1998) highlighted a strong association between alcohol and violence. Then, the large studies suggested weak associations compared with the strong associations proposed by smaller studies. For example, one of the highest odds ratios found (12.94) was obtained by one of the smaller samples compared with the strong associations proposed by smaller studies. For example, one of the highest odds ratios found (12.94) was obtained by one of the smaller samples compared with the strong associations proposed by smaller studies. For example, one of the highest odds ratios found (12.94) was obtained by one of the smaller samples compared with the strong associations proposed by smaller studies. For example, one of the highest odds ratios found (12.94) was obtained by one of the smaller samples compared with the strong associations proposed by smaller studies. For example, one of the highest odds ratios found (12.94) was obtained by one of the smaller samples compared with the strong associations proposed by smaller studies. For example, one of the highest odds ratios found (12.94) was obtained by one of the smaller samples compared with the strong associations proposed by smaller studies. For example, one of the highest odds ratios found (12.94) was obtained by one of the smaller samples compared with the strong associations proposed by smaller studies. For example, one of the highest odds ratios found (12.94) was obtained by one of the smaller samples.

As stated in the introduction to this paper, the treatments and the efficacy of the preventive programmes developed by public institutions are often based on the scientific evidence. For this reason, the possibility of a publication bias suggested in this study could be specially relevant, since a low validity of study findings usually precludes the institutional and financial efforts to ameliorate the problem of intimate partner violence against women. This finding has also been observed in other meta-analysis studies on other fields of knowledge (e.g., genetics).

**Figure 2** Relationship between the observed odds ratio and the year of publication of the studies (1996–2003) included in the meta-analysis about male alcohol consumption and intimate partner violence

**Table 1** Excluded papers for the systematic review

<table>
<thead>
<tr>
<th>Exclusion criteria</th>
<th>N excluded</th>
<th>% Out of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other victims</td>
<td>580</td>
<td>57.1</td>
</tr>
<tr>
<td>Intervention programme evaluation</td>
<td>113</td>
<td>11.2</td>
</tr>
<tr>
<td>Alcohol consumption by the victim</td>
<td>98</td>
<td>9.7</td>
</tr>
<tr>
<td>Other risk factors</td>
<td>74</td>
<td>7.3</td>
</tr>
<tr>
<td>Another type of violence (no IPV$^a$)</td>
<td>66</td>
<td>6.5</td>
</tr>
<tr>
<td>Qualitative studies</td>
<td>28</td>
<td>2.8</td>
</tr>
<tr>
<td>Theoretical reviews</td>
<td>24</td>
<td>2.4</td>
</tr>
<tr>
<td>Book reviews</td>
<td>9</td>
<td>0.9</td>
</tr>
<tr>
<td>Editorials</td>
<td>6</td>
<td>0.6</td>
</tr>
<tr>
<td>Summary of conferences</td>
<td>6</td>
<td>0.6</td>
</tr>
<tr>
<td>Violence from women against men</td>
<td>5</td>
<td>0.5</td>
</tr>
<tr>
<td>Lack of ethics$^b$</td>
<td>3</td>
<td>0.3</td>
</tr>
<tr>
<td>Meta-analysis</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>Total excluded papers</td>
<td>1013</td>
<td>100</td>
</tr>
</tbody>
</table>

a: Intimate partner violence
b: Clinical trials with men

the highest odds ratio were identified in studies with smaller sample sizes and broader confidence intervals.
<table>
<thead>
<tr>
<th>First author (Reference)</th>
<th>Year of publication</th>
<th>Objective</th>
<th>Sample size</th>
<th>Population</th>
<th>Country of study</th>
<th>Design</th>
<th>Measure of violence</th>
<th>Measure of alcohol</th>
<th>Odds ratio (IC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ramanathan (30)</td>
<td>1996</td>
<td>To assess the nature and consequences of violence against women</td>
<td>332</td>
<td>Women attending by psychiatric clinic</td>
<td>India</td>
<td>Cross-sectional</td>
<td>Survey (abuse and type of emotional problems)</td>
<td>Survey (abuse and type of emotional problems)</td>
<td>13.5 (6.15–29.88)</td>
</tr>
<tr>
<td>Kyriacou (22)</td>
<td>1998</td>
<td>To evaluate the associations between selected socioeconomic risk factors and acute injury from domestic violence against women</td>
<td>46</td>
<td>Group of injured woman (cases), group of women from an emergency department (control)</td>
<td>USA</td>
<td>Case–control</td>
<td>Items in Structured Interview</td>
<td>Items in Structured Interview</td>
<td>12.94 (2.67–62.57)</td>
</tr>
<tr>
<td>Kyriacou (26)</td>
<td>1999</td>
<td>To examine the socioeconomic and behavioural characteristics of women and their male partners to identify risk factors for injury to women as a result of domestic violence</td>
<td>915</td>
<td>Group of injured woman (cases), group of women from an emergency department (control)</td>
<td>USA</td>
<td>Case–control</td>
<td>Results of base-line characteristics of women</td>
<td>Results of base-line characteristics of women</td>
<td>5.8 (4.2–8.1)</td>
</tr>
<tr>
<td>Coker (39)</td>
<td>2000</td>
<td>To estimate the frequency and correlates of IPV by type (physical, sexual, battering, or emotional abuse) among women seeking primary health care</td>
<td>1401</td>
<td>Women aged 18–65 years who attended family practice clinics</td>
<td>USA</td>
<td>Cross-sectional</td>
<td>Index of Spouse Abuse and Women's Experience Battering Scale</td>
<td>Information self-reported by women in the survey</td>
<td>5.6 (3–10.4)</td>
</tr>
<tr>
<td>Vizcarra (25)</td>
<td>2001</td>
<td>To determine the prevalence of family violence against women in a population sample of Temuco, Chile</td>
<td>422</td>
<td>Women aged 15–49 years, low socioeconomic level, one or more child</td>
<td>Chile</td>
<td>Cross-sectional</td>
<td>Scale of 12 items</td>
<td>Alcohol Scale (EBBA)</td>
<td>3.28 (1.35–7.97)</td>
</tr>
<tr>
<td>Johnson (40)</td>
<td>2001</td>
<td>To investigate the importance of alcohol abuse as a predictive factor in cases of wife assault relative to other socio demographic and attitudinal factors using a nationally representative survey on violence against women conducted in Canada in 1993</td>
<td>12,300</td>
<td>Women 18 years of age and older</td>
<td>Canada</td>
<td>Cross-sectional</td>
<td>Survey by responses to a list of 10 behavioural items</td>
<td>Items in the same survey</td>
<td>2.42 (1.94–3.04)</td>
</tr>
<tr>
<td>First author (Reference)</td>
<td>Year of publication</td>
<td>Objective</td>
<td>Sample size</td>
<td>Population</td>
<td>Country of study</td>
<td>Design</td>
<td>Measure of violence</td>
<td>Measure of alcohol</td>
<td>Odds ratio (IC)</td>
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<tr>
<td>Savona-ventura (35)</td>
<td>2001</td>
<td>To identify the domestic violence problem in the pregnant population and its effects on pregnancy</td>
<td>405</td>
<td>Women unaware of the domestic violence services</td>
<td>Malta</td>
<td>Cross-sectional</td>
<td>Structured interviews</td>
<td>Structured interviews</td>
<td>6.51 (2.99–14.18)</td>
</tr>
<tr>
<td>Jewkes (24)</td>
<td>2002</td>
<td>To measure the prevalence of physical, sexual, and emotional abuse of women, to identify risk factors and associated health problems and health service use</td>
<td>1306</td>
<td>Central statistics for the 1998 South African Demographic and Health Survey (SADHS)</td>
<td>South Africa</td>
<td>Cross-sectional</td>
<td>Items in Structured Interview</td>
<td>Items in Structured Interview</td>
<td>3.98 (2.41–6.59)</td>
</tr>
<tr>
<td>Cunradi (36)</td>
<td>2002</td>
<td>To assess IPV rates by level of denominational homogamy, affiliative status, frequency of religious attendance, and importance of religion and to analyse the contribution of these factors to the risk of I</td>
<td>1440</td>
<td>Married couples interviewed for the 1995 National Study of Couples</td>
<td>USA</td>
<td>Cross-sectional</td>
<td>Conflict Tactics Scale</td>
<td>National Alcohol Survey</td>
<td>2.24 (1.25–4.02)</td>
</tr>
<tr>
<td>Koenig (37)</td>
<td>2003</td>
<td>To examine the specific socio demographic and behavioural risk factors associated with recent domestic violence and the attitudes of male and female respondents toward the circumstances under which such violence is justifiable</td>
<td>5109</td>
<td>Women with experience of intimate partner violence</td>
<td>Uganda</td>
<td>Cross-sectional</td>
<td>Survey adapted from Conflicts Tactics Scale</td>
<td>Information self-reported by women</td>
<td>4.62 (3.44–6.21)</td>
</tr>
<tr>
<td>Caetano (33)</td>
<td>2003</td>
<td>To estimate the prevalence rates of IPV among white, black, and Hispanic couples in the US and to assess the contribution of drinking pattern</td>
<td>1440</td>
<td>White, Black and Hispanic couples</td>
<td>USA</td>
<td>Cross-sectional</td>
<td>Conflict Tactics Scale</td>
<td>National Alcohol Survey</td>
<td>4.32 (1.16–16.07)</td>
</tr>
</tbody>
</table>
It is mentioned that the possible bias and the size of the study reduce drastically the credibility of the associations. Statistical approaches of the studies found in databases are not adequate to analyse the causal influence. Besides, studies which cannot establish strong associations are not often published, hence they are difficult to locate.

The political implications of these findings are crucial for clinicians and policy-makers. The role of substance consumption such as alcohol and its effect upon the occurrence of intimate partner violence are widely accepted in scientific literature.50–52 However, now we know that the evidence in support of this statement is weak. As a result, when treating people with alcohol problems clinicians should not forget that on doing so maybe they are not solving the social problem of intimate partner violence.

In order to determine any real association between male alcohol consumption and intimate partner violence more case-control and cohort studies are necessary. Case-series, though, should be excluded because of their low inferential power. Lastly, current information about this issue should also be carefully re-examined before it is put into practice.

Acknowledgements
The authors thank the Institute of Women of Spain for its logistic and financial support to this research (Grant I+D+I 106/02) and the Network for Research on Gender and Health (RISG) on its support. The authors also thank Dr Daniel La Parra, from the Sociology II Department, University of Alicante, for his valuable comments on earlier versions of the manuscript. Finally, the authors thank Irma Muñoz, from Education Faculty, University of Alicante, for her valuable support in the English edition on the last version of the paper.

Key points
• Systematic review and meta-analysis were performed to assess the magnitude of the association between male alcohol consumption and intimate partner violence.
• Evidence linking male alcohol consumption and violence against women is weak.
• There is not enough evidence to support preventive policies based on male alcohol consumption as a risk factor of intimate partner violence.
• When treating alcoholism, clinicians should not forget that maybe they are not solving the social problem of intimate partner violence.

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Received July 3, 2005, accepted December 8, 2005