

Fitzgerald, N., Angus, K., Emslie, C., Shipton, D. and Bauld, L. (2016) Gender differences in the impact of population-level alcohol policy interventions: evidence synthesis of systematic reviews. *Addiction*, 111(10), pp. 1735-1747.

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Deposited on: 07 August 2017

Gender differences in the impact of population-level alcohol policy interventions: evidence synthesis of systematic reviews.

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Running head: Alcohol policy and gender: evidence synthesis

Word count: 3,963

Declarations of interest: The authors declare no competing interests. The work leading to this paper was funded and commissioned by Glasgow Centre for Population Health. No contractual constraints on publishing were imposed by the funder.

Abstract

Background: Consistent review-level evidence supports the effectiveness of population-level alcohol policies in reducing alcohol-related harms. Such policies interact with well-established social, cultural and biological differences in how men and women perceive, relate to and use alcohol, and with wider inequalities in ways which may give rise to gender differences in policy-effectiveness.

Aims: To examine the extent to which gender-specific data and analyses were considered in, and are available from, systematic reviews of the impact of population-level alcohol policy interventions, and where possible to conduct a narrative synthesis of relevant data.

Methods: A prior systematic 'review of reviews' of population level alcohol interventions 2002-2012 was updated to May 2014, all gender-relevant data extracted, and the level and quality of gender reporting assessed. A narrative synthesis of extracted findings was conducted.

Results: Sixty-three systematic reviews, covering ten policy areas, were included. Five reviews (8%) consistently provided information on baseline participation by gender for each individual study in the review and twenty-nine (46%) reported some gender-specific information on the impact of the policies under consideration. Specific findings include evidence of possible gender differences in the impact of and exposure to alcohol marketing, and a failure to consider potential unintended consequences and harm to others in most reviews.

Conclusions: Gender is poorly reported in systematic reviews of population-level interventions to reduce alcohol-related harm, making it difficult to assess the intended and unintended effects of such policies on women and men. Further consideration of potential gender differences is warranted in both research and policy.

1 Introduction

2 The identification and implementation of effective policies to reduce the adverse consequences of
3 alcohol is a major public health imperative (1). While the heterogeneity of the interventions and
4 outcomes may impede understanding of the mechanisms of effect, (2–4), consistent review-level
5 evidence supports the effectiveness of population-level alcohol policy interventions. These include
6 those involving regulatory enforcement such as increased taxation or price controls, drink-driving
7 limits, and the regulation of availability and marketing (4,5).

8
9 There is persistent and strong evidence, from multiple countries worldwide, that men and women
10 relate to, perceive and use alcohol differently (6,7). *“Nearly everywhere that epidemiological or
11 ethnographic research has been carried out, historically and cross-culturally, men have consumed
12 more alcohol than women”* (8)(p153). Women are more likely to abstain; men are more likely to drink
13 heavily and develop alcohol problems (7,9). Women are more likely to suffer intimate partner
14 violence; men to engage in drink-driving (5).

15
16 While sex-linked biological differences influence alcohol consumption and related harms (7,10), the
17 variation in magnitude of differences in drinking between men and women (6,7,10,11), and the
18 convergence in consumption levels between men and women in many countries over recent decades
19 (7,11–14), suggest that societal and cultural influences may be more important. Public excessive
20 drinking has historically been perceived as a demonstration of ‘masculinity’ in western societies (15).
21 Alcohol consumption has historically been associated with fewer social sanctions for men than women
22 (10,16), particularly among poorer populations (17).

23
24 The convergence in drinking between women and men has largely been attributed to a rise in
25 women’s drinking rather than a fall in men’s (18–21). Hypothesized influences include greater gender
26 equality, marriage and parenting at an older age, increasing female participation in the workplace and
27 financial independence, changes in drinking environments such as bar design, and more mixed-gender
28 drinking occasions (16). The alcohol industry is likely to have played, and continues to play, a role
29 through deliberate differentiation between men and women in product development, targeting and
30 marketing: *“in many countries [women] have been the obvious group in which the market has been
31 far from saturated”* (16).

32
33 Policies which attempt to reduce alcohol-related harms interact with social, cultural and biological
34 differences in how men and women relate to, perceive, and use alcohol. For this reason alone, there
35 may be gender differences in the effectiveness and unintended effects of alcohol policy interventions.
36 In addition, these differences intersect with wider gender inequality, which is acknowledged as an
37 influential social determinants of health (22–24): *“sex and society interact to determine who is well or
38 unwell, who is treated or not, who is exposed or vulnerable to ill health and how, whose behaviour is
39 risk-prone or risk-averse, and whose health needs are acknowledged or dismissed”* (23). Increasing
40 recognition of structural gender inequality, and its links with economic and other inequality, has led
41 to efforts to ‘mainstream gender’ within policy-making more broadly (25–28), as well as calls for
42 greater attention to gender in research(23,24,29–31).

43
44 ‘Umbrella’ reviews (reviews of reviews) are increasingly used to synthesize systematic review evidence
45 (32). Published umbrella alcohol policy reviews (4,5) have not focused on how well-represented
46 females are in studies, or the potential role of gender differences in influencing overall policy
47 effectiveness. Therefore, the aims of this umbrella review were to:

- 48
49
- examine the extent to which sex/gender data and analyses were considered in, and are
50 available from, systematic reviews of population-level alcohol policy interventions

- 51 • conduct a narrative synthesis of findings from systematic reviews relating to sex/gender
52 differences in effectiveness or potential effectiveness of such interventions.

53

54 Given the difficulty of separating differences in 'sex' (biological differences between men and
55 women) and 'gender' (cultural constructions of masculinity and femininity), we refer to 'gender' to
56 encompass both, in line with current thinking (33).

57

58

59 **Methods**

60 Search Strategy

61 Martineau and colleagues previously conducted a review of reviews in 10 alcohol policy areas ("the
62 Martineau review") without focusing on sex/gender (4). It was used as the starting point for this
63 umbrella review. Their search strategy (Table 1) from October 2012, identified 52 reviews from 2002
64 onwards from six databases (4); all 52 were included in this current review.

65 <Table 1 to be inserted here>

66

67 The Martineau review search strategy was re-run for the period 1st July 2012 to 19th May 2014, to
68 allow for delays in indexing. Six academic literature databases were searched: five the same as those
69 searched by Martineau and colleagues (*Medline, Database of Abstracts of Reviews of Effects (DARE),*
70 *Cochrane Database of Systematic Reviews, Campbell Collaboration Library of Systematic Reviews,* and
71 a site search of the National Institute for Health and Care Excellence's (NICE) website); and one
72 covering the same subject areas (*Applied Social Sciences Index and Abstracts*) as an older database
73 used by Martineau and colleagues (*Social Policy and Practice*). No reviews included in Martineau were
74 identified only in the latter database.

75 Results Screening

76 The search results were downloaded into bibliographic software (RefWorks) and duplicates removed.
77 Two researchers (KA, NF) assessed the new reviews by first applying the Martineau review inclusion
78 criteria (4)(p.259) to titles and abstracts, and then, if necessary, to the full text. The inclusion criteria
79 were:

- 80 1. Does the review have a stated aim to evaluate interventions to reduce alcohol use and/or
81 related harm, and report outcome data on alcohol use and/or related harm?
- 82 2. Does the review concern intervention effectiveness? (*And include studies with controlled,*
83 *before-and-after or time series designs.*)
- 84 3. Is at least one of the interventions reviewed population level? (*Exclude interventions*
85 *involving interaction between health professionals and individuals or groups, and*
86 *interventions selectively targeting high-risk individuals, such as those convicted of alcohol-*
87 *related offences.*)
- 88 4. Is the review a systematic review? (*If the study reports search strategy details, inclusion*
89 *and exclusion criteria, and clearly identifies all included studies. Exclude reviews of*
90 *reviews.*)

91

92 If the answer to all four questions above was yes, the review was included and assigned to the relevant
93 policy area. In the event of any disagreement or doubt about eligibility that could not be resolved by
94 discussion between KA and NF, a third researcher (LB) read the review to resolve disagreement by
95 majority opinion. We planned to use updated reviews in place of the original reviews; however no
96 updated reviews were identified by our search.

97

98 The Martineau review did not limit the searches by language, although all the included reviews were
99 in English. In our updated search, we excluded non-English language reviews due to lack of resources
100 for full-text translation. We planned to list any identified by our search, however none emerged. In
101 both the original and updated searches, reviews were not excluded on the basis of methodological
102 quality other than as outlined in the above criteria. This is in line with guidance on synthesizing
103 evidence on health equity which emphasises an inclusive approach (34).

104

105 Data Extraction

106

107 Each review was assessed for relevant sex/gender content as follows:

108

- 109 • Searchable PDF documents: electronic searches were conducted for key terms (including:
110 male female women woman man men girl boy gender sex mother father maternal paternal
111 daughter son pregnant pregnancy schoolgirl schoolboy husband wife wives spouse spousal);
- 112 • Data extraction tables within reviews: scanned for findings reported by gender using the
113 abbreviations 'f' and 'm', or 'w' and 'm'.
- 114 • PDF documents that were not fully text-searchable or photocopies: full text read carefully for
115 key terms.

116

117 Data were extracted from systematic reviews using a standardised framework (Table 2), which was
118 developed and revised by two researchers (NF, KA). Initially, data were extracted using the
119 preliminary framework from three reviews, one from each of three policy areas, by the two
120 researchers independently. The results were reconciled, and a consensus reached on adaptations to
121 the framework. The adapted framework was applied independently to two new reviews in two more
122 policy areas. The final version of the data extraction framework (Table 2) was agreed and applied to
123 all the remaining identified reviews by one researcher. A sample of reviews in each policy area was
124 checked for accuracy by a second researcher.

125

126 Many reviews included studies not relating to population-level alcohol policy interventions (e.g.
127 studies measuring the effectiveness of policy interventions for other addictive substances or those
128 targeting an individual rather than a population). As in the Martineau review, data relating to these
129 studies were not extracted. Within the eligible reviews, data were extracted from relevant studies of
130 any design.

131

132 <Table 2 to be inserted here>

133 Data analysis

134

135 The level and quality of reporting of sex/gender data in the reviews was analysed summatively for
136 each policy area using the items included in the data extraction framework (Table 2). An overall
137 narrative synthesis of sex/gender-relevant findings was conducted, as well as for individual policy
138 areas.

139

140 **Results**

141 In total, 63 unique systematic reviews were identified and included (52 from the Martineau review,
142 and 11 from our updated search: see Figure 1). Table 3 shows the reviews categorised into 10 broad
143 alcohol policy areas as defined by Martineau: three reviews covered two policy areas and one review
144 covered three policy areas.

145

146 <Figure 1 to be inserted here>

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<Table 3 to be inserted here>

Level of consideration and availability of gender-relevant data (Table 4)

<Table 4 to be inserted here>

Most of the systematic reviews (87%, n=55) did not plan to conduct pooled analysis of intervention effects by gender (Table 4). Seven of the 8 reviews which did plan to do so reported insufficient data in the primary studies to enable such analysis (35–41). The eighth of these reported pooled effects by gender in the area of higher education interventions (42), and a review of mass media interventions did post-hoc pooled gender analysis (43) (see policy findings below).

Five reviews (8%) (37–39,41,44) ‘consistently’ provided information on baseline participation by gender for the individual studies included in the review; four of these were conducted for the Cochrane Library. Another review sometimes (45) and another rarely (46) provided such information; the rest (89%, n=56) never did so.

More than half of the reviews (54%, n=34) provided no information on individual study findings relating to the impact of the reviewed policy by gender, and there was wide variation in the location, quality and level of detail of information provided for those which did (Table 4).

Gender-relevant findings from systematic reviews

Notwithstanding the gaps in reporting at review level, available information relevant to gender is outlined below by policy area.

Alcohol server setting/drinking environment (Table S1 – 6 reviews)

Five reviews focused on policies to prevent alcohol-related harm or intoxication in or around licensed premises (47–51), with between 13 and 26 studies in each; a further review included a single study of warning labels (52). Across all six reviews, gender-relevant findings were reported only for a single included study - of ‘Operation Drinksafe’ (a personalised risk-assessment in bars involving the AUDIT screening tool and breath alcohol concentration measurement) – which reported a greater reduction in AUDIT scores in women (p1588, Van Beurden et al., (2000) cited in (47)).

Sales Availability (Table S2 – 8 reviews)

Eight reviews, including between 13 and 132 studies, considered policies limiting the availability of alcohol through hours/days of sale, outlet density and/or purchase age (53–60). Gender-relevant findings were reported for very few (15% or less) of the included studies in each review. Such data were reported for 5 of 88 studies in one review (54), all of which suggested that increasing outlet density was associated with increased consumption or harms (suicides, night-time crashes, assaults) in males, less so in females. Another review (60) reported relevant findings for 10 of 69 studies, that were more mixed suggesting either no effect or an enhanced effect in males.

In another review, relevant data were reported from one paper which found that following an extension of hours of sale in Scotland, women’s drinking increased while men’s decreased (Knight & Wilson (61) as cited in (59)). The same paper was cited in another review (56) as finding that the introduction of Sunday alcohol sales in Scotland was associated with an increase in consumption amongst males aged 18-45, with no significant change in women’s drinking..

197 Two reviews cited studies considering the effect of increased availability on assaults against women;
198 one suggested no effect (Norstrom & Skog, 2003 cited in (56)) and the other found a decrease in
199 assaults against women but could not conclude causation (Duailibi et al., 2007, cited in (62)).
200

201 No gender-relevant data were reported for the 132 studies included in the one review of minimum
202 drinking age laws (58).
203

204 **Illicit alcohol – 1 review**

205 No gender relevant data were reported for the 14 studies included in the review of policy options to
206 address illicit alcohol (63).
207

208 **Taxation/pricing (Table S3 – 4 reviews)**

209 Gender relevant findings were reported for fewer than 25% of the studies included in the reviews,
210 which included between 9 and 50 studies overall. No consistent differences in the direct effect of
211 increased price/taxation on consumption or harms in men compared to women were found.
212

213 Two reviews (46,64) reported findings from 5 studies suggesting that higher prices were associated
214 with decreased male but not female harms, including suicide (Markowitz, 2003, cited in (46,64)) and
215 sexually transmitted diseases (Grossman 2004; Carpenter 2005 both cited in (46); Markowitz et al.,
216 2005; Chesson et al., 2000 both cited in (64)). A sixth study found an association between higher
217 prices and improved use of birth control and condoms that was only significant in males (Grossman &
218 Markowitz, 2005 cited in (64)). One other study (Heeb et al., 2003 cited in (65)) found a greater
219 increase in male spirits drinking with a decrease in price.

220 Three studies found greater decreases in female than male drinking or harms with increased price
221 (Chaloupka & Wechsler, 1996; Makela et al., 2008; Academy of Medical Sciences, 2004, all in (46); the
222 latter also cited in (60)). A further study (Herttua et al.2008a, as cited in (60)) found that a tax
223 reduction increased alcohol deaths more in females than in males.
224

225 Finally, one study did not find any evidence that an overall increase in spirits consumption following a
226 decrease in price differed by gender (Kuo et al., 2003 cited in (65)).
227

228 There was some consistency in studies considering indirect impact with five studies, all cited in one
229 review (46), suggesting an increase in price would reduce rapes (Cook and Moore, 1993), child abuse
230 perpetrated by females (but not males) (Markowitz & Grossman, 2000), sexual assault against women
231 (Markowitz, 2000, second listing), unwanted pregnancies/teen abortions (Sen et al., 2003 also cited
232 in (64)) and violence aimed at wives (Markowitz, 2000).
233

234 **Alcohol Marketing, Mass Media, Promotion, Counter-Advertising (Table S4 – 7 reviews)**

235 Of the 7 reviews, Booth et al. (46) included the most relevant findings: males were found more likely
236 to be exposed to or influenced by broadcast advertising in 7 studies (Aitken, 1988; Casswell & Zhang,
237 1998; Chen et al., 2005; Kelly, 1998; Sargent, 2006; Stacy, 2004; Zwarun, 2006; all cited in (46)), notably
238 for beer, and such exposure was associated with increased consumption of beer in two studies (Collins
239 et al., 2003; Connolly, 1994, both cited in (46)). Two studies found that point of sale
240 pricing/advertising may have increased female drinking to a greater extent than male drinking (Saffer
241 & Dave, 2003; Smith et al., 2005; both cited in (46)); 2 found no gender difference (Pederson, 2002;
242 Yang & Raghubir, 2005; both cited in (46)). Two studies found a greater exposure of females to
243 billboard and print media advertising (Dring & Hope, 2001; Jernigan, 2004; both cited in (46)) and 2
244 studies suggested that the effects of advertising bans were generally larger for females (Saffer & Dave,
245 2003; Saffer & Dave, 2006; both cited in (46)). One study found an association between possession of
246 alcohol promotional items and binge drinking in girls and a stronger association between such
247

248 possession and alcohol initiation in girls rather than in boys (Fisher, 2007, cited in (46)). Finally, a
249 different study found that males were more likely to have alcohol promotional clothing items and that
250 that was associated with a range of drinking variables (Workman, 2004, cited in (46)).

251 The Jackson et al. review (60) was conducted by members of the same team as the Booth review (46).
252 It covered three policy areas, and rather than conducting a new review, reported on the earlier
253 findings from the Booth review, however it summarised the findings slightly differently. It reported
254 that younger age-groups and 15 to 17 year old girls experienced the greatest impact of alcohol
255 advertising, but did not highlight the finding from Booth that males may be more influenced by and
256 exposed to broadcast advertising.

257

258 **Drink-driving (Table S5 – 12 reviews)**

259 No two reviews reported gender-relevant information from the same primary studies of drink-driving
260 policy. Reported studies suggested that such interventions have more of an impact on males than on
261 females in reducing consumption: (Carpenter et al., 2007 cited in (36)); breath alcohol concentration
262 (Zwicker, 2007 cited in (35); Kloeden & McLean, 1997; 1994 cited in (36)); crash-related hospital
263 admissions (Harden et al., 1985 cited in (66)); road traffic fatalities (Albalade et al., 2006, cited in (36));
264 and insurance claims for crashes (Mercer et al., 1996 also cited in (66)). Other studies suggested that
265 females tended to be more compliant with drink driving laws (Timmerman et al., 2003; Boots and
266 Midford, 1999 both cited in (67); Kaplan and Prato, 2007 cited in (36)). A small number of studies
267 across the reviews involved male drivers only.

268

269 **School (Table S6 – 17 reviews)**

270 There was no consistent evidence of gender differences in the effectiveness of school programmes
271 targeting alcohol. Across all the reviews, gender relevant findings were reported for 14 studies, of
272 which six suggested greater impact of the intervention in females, five suggested greater impact in
273 males, and three found no gender differences. There was limited evidence that males may have
274 responded better to classroom management interventions such as the 'Good Behaviour Game'
275 (Kellam et al., 2008 cited in (38)). However, the review-level evidence for the effectiveness of school-
276 based interventions was weak overall (4).

277

278 **Higher Education (Table S7 – 5 reviews)**

279 There was no evidence to suggest gender differences in the effects of a range of higher-education
280 interventions focusing on alcohol. One meta-analysis (42) found that gender was not a significant
281 moderator for first-year college students' alcohol consumption post-intervention.

282

283 **Family and community (Table S8 – 4 reviews)**

284 Reported review-level findings did not suggest a consistent gender difference in the efficacy of family
285 and community interventions: two cited studies found no significant moderation of effect by gender
286 (Brody, 2006, Haggerty, 2007, both in (39)); another study suggested a negative impact on females
287 only (Wiggins et al., 2009, cited in (68)); another a greater positive impact on males (Perry et al., 2003,
288 cited in (69)); and a final study found a greater positive impact on females (Spath et al., 1999a cited in
289 (39)).

290

291 Four trials of a female only intervention for daughters and their parents (mostly mothers) showed
292 signs of efficacy in the short to medium term (39) (p.12).

293

294 **Workplace (Table S9 – 4 reviews)**

295 Few relevant findings were reported and there was no clear evidence overall for any specific gender
296 differences from the studies cited in these reviews (41,45,70,71).

297

298
299

Discussion

300 Although there is widespread recognition that *“explicitly identifying to whom the evidence does or*
301 *does not apply, is necessary to formulate social policy initiatives... and to determine what interventions*
302 *are appropriate with particular populations”* (72), gender has not been well-reported in reviews of
303 population-level alcohol policy. Across 10 policy areas, and 63 reviews of population-level alcohol
304 policies, few or no reviews reported results by gender and some reported a lack of such data in the
305 primary studies. Notwithstanding the lack of data in the reviews, the information extracted suggests
306 that there are likely to be gender differences that are relevant to policy effectiveness in some areas.

307

Policy Implications

309

310 Possible gender differences exist in the area of alcohol marketing/mass media interventions, where
311 young men may be more affected by broadcast advertising especially for beer; and young women by
312 billboard/print advertising. If broadcast advertising was subjected to restrictions (as has been
313 suggested (73) p19), which were not applied to print advertising, that may reduce advertising
314 exposure to a greater extent in young men and requires further investigation.

315

316 In school and family interventions, a number of studies evaluated single-gender interventions aimed
317 at daughters (along with a parent, mainly their mothers) cited in (37,38). There is potential for
318 reinforcing gender stereotypes and inequality, for example, by invoking even by their existence, a
319 sense of drinking being somehow more problematic, shameful or inappropriate for girls, than for boys
320 (see de Visser (74,75)). It has been suggested that mass media campaigns focusing on ‘binge drinking’
321 can fall into this category or engage in ‘victim-blaming’ in relation to sexual assaults sustained after
322 drinking alcohol (76). No measures of this potential unintended outcome were reported in any of the
323 included reviews.

324

325 While there were no consistent trends in the many gender differences reported in the impact of
326 increased alcohol prices or taxation on consumption or harms, studies did consistently report that
327 such interventions may have reduced harms such as assaults. Importantly, these indirect outcomes
328 were not reported in reviews for eight of the ten policy areas, despite an increasing focus on ‘harm to
329 others’ from alcohol (77,78).

330

Research implications

332 This review suggests a significant gap in the literature, which is not unusual. Similar ‘gender blindness’
333 has been reported in research in other health areas (79–81) and is both a symptom of, and contributor
334 to, wider gender inequality (22–24). More basic research is required to better consider, measure and
335 report on the effectiveness of alcohol policy interventions by gender, as well as potential unintended
336 consequences such as gender stereotyping, and indirect effects including ‘harm to others’.

337

338 Current developments may improve the analysis and reporting of sex and gender in health research.
339 Many research and governmental organisations require sex/gender issues to be addressed in research
340 proposals and policy initiatives (72). In addition, a group of science editors are currently consulting
341 on common standards for reporting of sex/gender differences in scientific research (31). Specific
342 guidance is available on how to address sex and gender issues in systematic reviews of policy
343 interventions (82).

344

345 It remains to be seen how transformative initiatives to incorporate a gendered perspective will be:
346 long-standing efforts to mainstream gender into policy-making (83) have faced challenges (84) and
347 criticism for having a narrow ‘technocratic’ focus on processes (such as gender impact assessment
348 (85)) while failing to achieve societal change (25,28). This review focused only on gender, it is

349 important to acknowledge that gender inequality intersects with other forms of inequality (including
350 economic, racial, sexual orientation) in complex ways (23,30) that can have important implications for
351 alcohol-related harms (17,86,87), and which require a broader focus in both research and policy
352 (22,29).

353

354 Strengths and limitations

355 This umbrella review synthesizes a large amount of evidence about the impact of population-level
356 alcohol policy interventions on males and females, and adds to the current literature on alcohol and
357 gender, which focuses predominantly on consumption and consequences (7). Its value is constrained
358 by a lack of focus on, and low levels of reporting of, gender-relevant data at review level, either due
359 to gaps in primary studies, selective reporting in the reviews, or more likely both. This makes it difficult
360 to speculate on the reasons for the differences found or to assume their wider transferability.
361 Different reviews reported different aspects of the same primary studies and working from reviews
362 impeded judgement of the quality of the primary evidence. Even reviews which sought to analyse by
363 gender were largely unable to do so, suggesting that further study of the primary literature may not
364 yield results that are any more conclusive.

365

366 **Conclusions**

367 Gender differences in experiences of direct and indirect harm from alcohol are well established (87–
368 89) but appear to be rarely considered in policy reviews. Available evidence from systematic reviews
369 suggests that there may be plausible and important gender differences in the impact of population-
370 level alcohol policy interventions which require further consideration in research and policy,
371 particularly in the area of advertising controls and mass media campaigns.

372

373 **Acknowledgements:** Funding for this review from Glasgow Centre for Population Health is gratefully
374 acknowledged. Special thanks to Fred Martineau, Mark Petticrew, Elizabeth McGill and co-authors,
375 for sharing their review data and answering our queries. NF, KA and LB are members of the UK
376 Centre for Tobacco and Alcohol Studies (www.ukctas.ac.uk). Funding for UKCTAS from the British
377 Heart Foundation, Cancer Research UK, the Economic and Social Research Council, the Medical
378 Research Council and the National Institute of Health Research, under the auspices of the UK Clinical
379 Research Collaboration, is also gratefully acknowledged.

380

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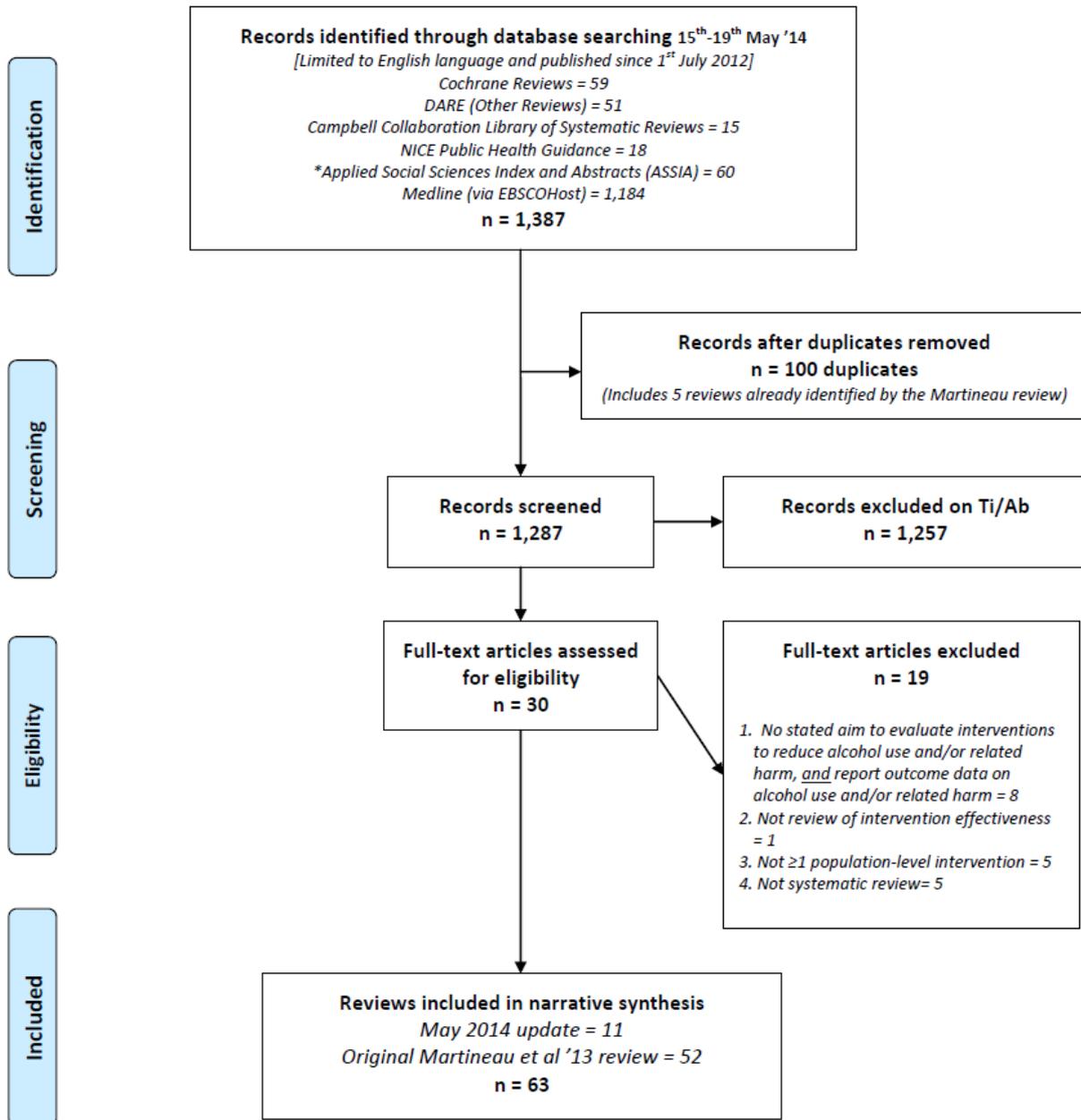
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Figure 1: Flow diagram of the review screening process updating the searches from Martineau *et al.* 2013



*Substitution database for Social Policy and Practice

Table 1: Search Strategy from Martineau et al., 2013 (4).

| | | | | | | |
|---|------------|---|------------|------------------------|------------|-------------------------|
| Alcohol terms | <u>AND</u> | Policy settings and interventions terms: <ul style="list-style-type: none"> • sexual or risky behaviour • roads and transport • public space • domestic • workplace • school • leisure • social • availability • affordability • acceptability | <u>AND</u> | Population-level terms | <u>AND</u> | Systematic review terms |
| | | <u>OR</u> Outcomes terms: <ul style="list-style-type: none"> • mental harm • communicable diseases • unintentional injury and accidents • violence and crime • employment • economic • environment • social | | | | |
| | | <u>OR</u> Specific interventions terms | | | | |
| <p>See Appendix A. 'Supplementary Data' of the Martineau review for the complete search strategy. Online at http://dx.doi.org/10.1016/j.ypped.2013.06.019</p> | | | | | | |

Table 2: Final Framework for Data Extraction from Reviews

| Item | Item description and/or instructions/response options |
|---|---|
| Study Details | |
| A. Review Title | Brief reference e.g. Jackson et al., 2010 |
| B. Citation | Full citation. |
| C. Relevant studies | Number of relevant studies/total number of studies in review. Studies deemed relevant if they relate to a population-level alcohol policy intervention as defined by the Martineau review, and of any design. |
| Gender focus of review | |
| D. Did this review have a major and a priori focus on gender equity? | If so, enter 1, 2 or 3 to indicate which type, using criteria from Welch et al., 2013 (34) (p2): Type 1 Reviews assess effects of interventions in disadvantaged populations; Type 2 Reviews assess effects of interventions aimed at reducing social gradients across populations; Type 3 Reviews have a major focus on equity and are “designed to assess the effects of interventions not aimed at reducing inequity but where it is important to understand the effects of the intervention on equity, positive or negative”. |
| E. Was post-hoc analysis conducted of the effects of the intervention by gender? | Yes/No or N/A (not applicable) if a priori analysis by gender was planned. |
| F. Extract all gender-relevant data except from single-gender studies. | Cut and paste any data on gender if relevant to population level alcohol interventions or policy. |
| G. Extract all data from single-gender studies. | Cut and paste any data from single gender studies if relevant to population level alcohol interventions or policy. |
| Pooled data for all studies in review | |
| H. Is pooled baseline participation by gender reported? | Yes/No |
| I. If yes to 8, extract data | Provide data or N/A |
| J. Were pooled intervention effects by gender reported? | Yes/No |
| K. If yes to 10, extract data | Provide data or N/A |
| Data provided for individual studies in review Excluding single gender studies & only including data from population-level alcohol studies. | |
| L. Baseline participation reported by gender in table for individual studies | Consistently/Mostly/Sometimes/Rarely/Never |
| M. Intervention effects reported by gender for individual studies in the study table or narrative? | No/Table/Narrative/Both |
| N. Quality of data reported for intervention effects by gender for individual studies | None (if qualitative only) Poor (if very basic quantitative e.g. before and after measures given only) Good (if quantitative with effect size or p value or confidence interval) Variable (if different quality of reporting across different studies within the review) |

Table 3: Policy areas and reviews included

| Policy Area | Types or examples of interventions included: | Reviews |
|---------------------------|---|-------------------------|
| 1. Alcohol server setting | Drinking environment interventions including server training, warning labels etc. | (47–52) |
| 2. Sales Availability | Restricting opening hours/days, outlet density, legal drinking age, monopolies. | (53–56,58–60,62) |
| 3. Illicit Alcohol | Any interventions to tackle illicit alcohol. | (63) |
| 4. Taxation/Pricing | Changing tax or price of alcohol. | (46,60,64,65) |
| 5. Mass media/promotion | Advertising, mass media, promotion, counter-advertising, social marketing. | (43,46,60,90–93) |
| 6. Drink-driving | Increased police patrols, sobriety checkpoints, blood alcohol limits etc. | (35,36,66,67,90,94–100) |
| 7. School | Pre-school/school setting interventions e.g. education, life skills etc. | (37,38,40,98,101–113) |
| 8. Higher education | e.g. regulation, media campaigns, social norms, multicomponent interventions. | (42,44,114–116) |
| 9. Family and community | e.g. mailed literature, community wide campaigns. | (39,40,68,69) |
| 10. Workplace | e.g. mandatory testing, staff training, mail-outs, peer-referral programmes. | (41,45,70,71) |

Table 4: Review-level reporting of gender by policy area

| | Data Extraction Item [Reference Letter from Table 2 where applicable] | | | | | |
|-----------------------------|---|---|--|---|--|---|
| | Number of reviews | Number of reviews with planned gender focus/Number of reviews with post-hoc analysis by gender [D, E] | Number of reviews which pooled data by gender [H, I, J, K] | Frequency of baseline participation reported by gender for individual studies (number of reviews) [L] | Number of reviews with intervention effects reported by gender in table only/in narrative only/in both table and narrative [M] | Quality of data reported for gender intervention effects where reported (number of reviews) [N] |
| 1. Alcohol server setting | 6 | 0/0 | 0 | Never (6) | 1/0/0 | Poor (1) |
| 2. Sales Availability | 8 | 0/0 | 0 | Never (8) | 0/1/4 | Poor (2) Good (1) Variable (2) |
| 3. Illicit Alcohol | 1 | 0/0 | 0 | Never (1) | 0/0/0 | |
| 4. Taxation/Pricing | 4 | 0/0 | 0 | Rarely (1) Never (3) | 1/1/2 | Good (1) Variable (3) |
| 5. Mass media/promotion | 7 | 0/1 | 1 | Sometimes (1) Never (6) | 0/0/4 | Poor (1) Good (1) Variable (2) |
| 6. Drink-driving | 12 | 2/0 | 0* | Never (12) | 3/0/2 | Poor (3) Good (2) |
| 7. School | 17 | 2/0 | 0* | Consistently (2) Never (15) | 4/0/5 | Poor (1) Good (8) |
| 8. Higher education | 5 | 1/0 | 1 | Consistently (1) Never (4) | 0/0/0 | |
| 9. Family and community | 4 | 2/0 | 0* | Consistently (1) Never (3) | 0/1/2 | Poor (1) Good (2) |
| 10. Workplace | 4 | 1/0 | 0* | Consistently (1) Sometimes (1) Never (2) | 0/1/1 | Poor (1) Variable (1) |
| Totals for unique reviews** | 63 | 8/1 | 2 | Consistently (5) Sometimes (2) Rarely (1) Never (56) ^λ | 8/4/17 | Poor (10) Good (14) Variable (5) |

**In the Type 3 reviews which planned to focus on gender, subgroup analysis by gender was not possible due to lack of suitable data.*

*** The totals are sometimes different to the sum of the data in columns as some reviews covered more than one policy area.*

^λ n=64 because the frequency of reporting was rated differently for two policy areas within the same review.