

The relationship between Gender Norms and Alcohol Consumption: A Systematic Review

Relación entre las normas de género y el consumo de alcohol: una revisión sistemática

ROSA MARÍA PATRÓ-HERNÁNDEZ*, YAMAL NIETO ROBLES*, ROSA MARÍA LIMIÑANA-GRAS*.

* Facultad de Psicología. Universidad de Murcia. España.

Abstract

There are different profiles of alcohol consumption for men and women, and different courses and prognoses associated with problems caused by alcohol abuse. There is evidence of these differences by sex, but research on their links to differences associated with gender dimensions is scarcer. In order to know what has been researched on the subject, this article reviews the literature regarding the relationship between conformity with gender norms and alcohol use and/or abuse in adults. A systematic review was conducted using the electronic databases of PubMed, PsycINFO and ScienceDirect. Twenty-four articles published in English or Spanish were included and analysed. The main findings were: 1) conformity to norms associated with traditional masculine role (dominance, womanising, aggressiveness, risk behaviours) is related to greater alcohol use; 2) conformity to norms associated with traditional feminine role (interest in home life and family care) is related with lower alcohol use. These findings provide evidence of the relationship between dimensions associated with gender and drinking. It is considered that the possibilities of modifying beliefs and gender patterns linked to risk behaviours is an aspect to be taken into account in the field of prevention, with the development of gender measures a necessary task to further deepen the study of these relationships.

Key Words: Gender norms; Masculinity; Femininity; Alcohol; Health.

Resumen

El consumo de alcohol presenta perfiles diferenciales entre hombres y mujeres, existiendo diferencias igualmente respecto al curso y pronóstico de los problemas derivados del abuso de alcohol. Existe evidencia acerca de estas diferencias en función del sexo, pero la investigación acerca de su relación con diferencias en función de dimensiones asociadas al género es más escasa. Con el objetivo de conocer qué es lo que se ha investigado sobre el tema, se revisa la literatura acerca de la relación entre la conformidad con las normas de género y consumo de alcohol en adultos. Se llevó a cabo una revisión sistemática de la literatura sobre el tema en las bases de datos PubMed, PsycINFO y ScienceDirect. Se incluyeron y analizaron 24 estudios publicados en inglés o español. Los resultados más importantes fueron: 1) la conformidad con normas asociadas al rol tradicional masculino (dominancia, donjuanismo, agresividad, conductas de riesgo) está relacionada, en general, con un mayor consumo de alcohol; 2) la conformidad con normas asociadas al rol tradicional femenino (interés en vida hogareña y cuidado de la familia) se asocia con menor consumo de alcohol. Estos hallazgos proporcionan evidencia acerca de la relación entre dimensiones asociadas al género y el consumo de alcohol. Se considera que las posibilidades de modificación de las creencias y patrones de género vinculados con comportamientos de riesgo es un aspecto a considerar en el ámbito de la prevención, siendo el desarrollo de medidas de género una tarea necesaria para continuar profundizando en el estudio de estas relaciones.

Palabras clave: Normas de género; Masculinidad; Femenidad; Alcohol; Salud.

Received: May 2018; Accepted: November 2018.

Send correspondence to: M. Patró-Hernández. Departamento de Personalidad, Evaluación y Tratamiento Psicológicos, Facultad de Psicología (Desp.3.34). Campus de Espinardo. Universidad de Murcia. 30100, Murcia. España.
E-mail: rosapatro@um.es.

According to the Spanish Observatory on Drugs and Addictions (2017), alcohol use is more widespread among men than among women, although this difference seems to be on the decrease in recent years. The National Survey on Alcohol and Other Drugs in Spain states that in 2015, the prevalence of alcohol use was 82.9% among men and 72.1% for women, a difference of 10.8 points. This difference between the sexes was larger in the surveys prior to 2013, standing at 14.8 points in 2005 (84% vs. 69.2%) and at 21.3 points in 1995 (79.3% vs. 58%).

Different studies have highlighted important variation between the sexes in the prevalence of alcohol use and problematic drinking. The prevalence of problems with alcohol increases with the level of alcohol use, and women are more likely than men to have drinking problems with the same pattern of consumption and especially with severe use (Brñez-Horta, 2001; Ely, Hardy, Longford & Wadsworth, 1999). While women have a later age of onset and drink less, abuse develops more rapidly than among men (the so-called telescoping effect), and they have greater difficulty in controlling alcohol use, more problems associated with drinking and higher incidence of depressive and anxiety pathologies (Alvanzo et al, 2011; Ávila & González, 2007; Ehlers et al., 2010; Díaz-Mesa et al., 2016; Míguez & Permy, 2017; Sánchez-Autet et al., 2018). These differences are of great interest in clinical practice, since men and women have different forms of illnesses, different profiles, courses and prognoses with respect to problems caused by alcohol use; this implies the need to deepen the study of the factors determining such differences, with the aim of improving the development of prevention strategies and programs regarding alcohol use.

In the field of health, the study of the differences between men and women can be related to the well-known morbidity-mortality paradox (Nathanson, 1975; Verbrugge, 1982). According to the World Health Organization (2016), although men have a lower life expectancy than women, women suffer from worse health and more chronic diseases. Among the factors noted to account for these differences between men and women are: 1) biological risks; 2) risks acquired through work and lifestyle; 3) the behaviours that people adopt to improve or maintain health; 4) the forms used to communicate the symptoms and health issues; and 5) the use of the health care system (Verbrugge, 1989).

Human behaviour is partially influenced both by biological and environmental factors. Meta-analytic studies based on research of twins suggest that genetic factors account for 47%, 46% and 50% of the variance observed in cognitive aspects, psychiatric disorders and neurological disorders, respectively (Polderman et al., 2015), as well as 49% of the differences observed in disorders due to alcohol use (Verhulst, Neale & Kendler, 2015). Although the factors

associated with biological risks are important determinants of health, other factors, such as risks associated with lifestyle and health behaviours (for example, exposure to toxic agents, microbial agents, accidents, incidents with fire, illicit use of drugs, smoking, alcohol, inadequate diet or lack of exercise), can be equally important, accounting for, for example, 50% of mortality (Mokdad, Marks, Stroup & Gerberding, 2004). Therefore, taking into account the biological differences associated with sex as the only explanatory variable of health can prove reductionist. The literature argues that maleness is associated with an increase in the probability of adopting health-risk behaviours (drinking alcohol, smoking, not seeking medical help, etc.), which increases the likelihood of getting sick, being injured or dying (Courtenay, 2000), and has led to growing research interest in studying such determinants of health.

Given that human behaviour is strongly governed by social norms, some authors have argued that if men's lifestyle leads to worse health, it is very important to find out why these risky behaviours are more frequent in men and how to promote healthy behaviours, focusing on the study of behavioural differences between men and women and, in particular, regarding compliance with gender norms (Mahalik, Burns & Syzdek, 2007a).

According to Sánchez-López (2013), although the concepts of sex and gender are sometimes used interchangeably in health research, both terms involve different aspects. The former focuses on differences of a more biological nature, highlighting hormonal, chromosomal, gonadal or brain aspects and genital dimorphism in relation to being male or female, while the second highlights social and cultural differences with respect to roles, relationships, behaviours, values or attitudes that society attributes differentially to each sex with reference to masculinity and femininity. Some of the characteristics associated with the traditional male role have to do with a protective function and being the family provider, and with features reflected in adjectives such as active, determined, competitive, persistent and self-confident, while the traditional female role is seen in terms of functions of reproduction, child-raising and emotional support for the family, and with traits such as dedication to others, emotionality, kindness, understanding and warmth, among others (Sánchez-López, 2013; Sánchez-López & Limiñana-Gras, 2017). After a person understands what society expects from them, they may or may not conform to these norms based on a series of contextual and individual variables, with a greater or lesser degree of conformity or acceptance (Sánchez-López, Saavedra, Dresch & Limiñana-Gras, 2014). Gender norms are acquired through socialisation processes and may reflect some differences based on the values of each culture or society; for example, differences have been found in the degree of conformity to certain masculine gender norms between American and Spanish samples, with Spanish

people showing less acceptance than Americans of norms related to contempt towards homosexuality, the importance of winning, the importance of status, attraction to violence and risk, and greater conformity with values related to womanising (Cuellar-Flores, Sánchez-López & Dresch, 2011). Based on this differentiation between the concepts of sex and gender, recent reviews of health research from a gender perspective point to the need to take sex and gender factors into account in order to deepen understanding of health determinants in both sexes, how they are interrelated and involved in differential exposure to risk-protection factors and in different health and illness outcomes (Sánchez-López & Limiñana-Gras, 2017).

The purpose of this review is to provide evidence regarding current research in the study of gender norms and their relationship to alcohol use. The objectives of this review are to explore and identify studies on gender and drinking, as well as to describe and analyse the results of each instrument used. It is hoped that this will contribute to answering the question of whether gender (and its dimensions) is related to the consumption of alcoholic drinks in men and women, and in what way.

Method

The review was carried out following the steps and stages of identification, screening, eligibility and inclusion of the PRISMA guidelines (*preferred reporting items for systematic reviews and meta-analyses*) (Liberati et al., 2009).

To identify the studies, three bibliographic databases were searched: PubMed, PsycINFO and ScienceDirect. Due to the exploratory nature of the proposed review, the search was not temporally restricted and involved all articles in the databases up to February 2017. The following search terms were used: “gender conformity”, “conformity to masculine norms” “conformity to feminine norms” “masculinity”, “femininity” in combination with the term “alcohol” and the Boolean operators OR and AND. Complementarily, a search was made using the Researchgate portal and a review of references used in the articles that were finally selected.

After an initial analysis of the articles obtained in the screening phase, the following inclusion criteria were applied: a) any matching search terms in the title, summary or key words, b) studies published in English or Spanish, c) articles with access to the full text and d) empirical studies, or those of which it was not possible to determine with accuracy, based on the information contained in the abstract, whether they were empirical studies or not. Within the eligibility phase, after reading the content of the included articles in depth, the following exclusion criteria were applied: a) non-empirical studies; b) studies not dealing with the relationship between gender and alcohol use or abuse; c) “gender” used in the sense of “sex” (male/female) rather than “gender” or “social norms” (masculine/feminine); d) alcohol not assessed in terms of use or abuse; e) results not linking alcohol use or abuse to gender and its factors; and f) qualitative assessment. After application of the ex-

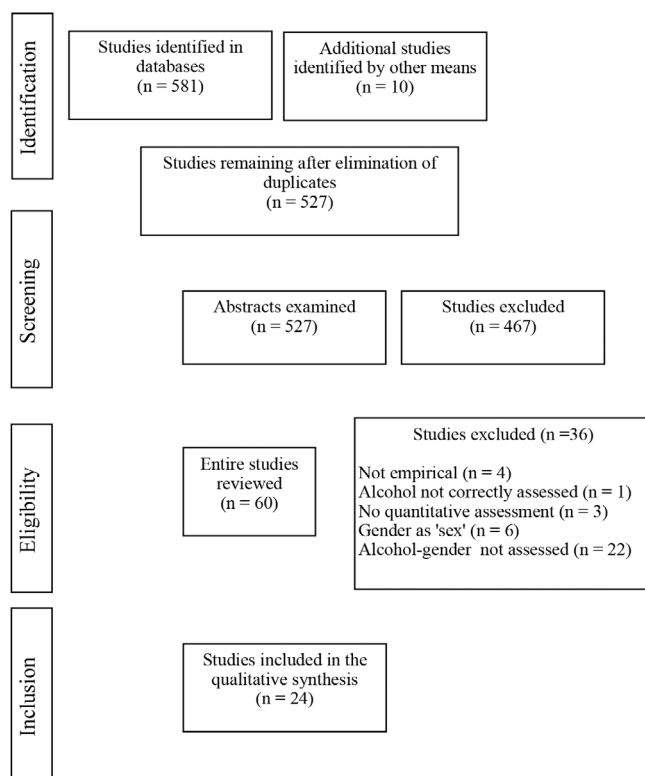


Figure 1. Flow diagram of the study search and selection process

clusion criteria, the number of articles included for the qualitative synthesis was reduced to 24. Figure 1 summarises the number of studies included in each stage of the search and selection process.

Results

Apart from two studies written in Spanish (Brabete & Sánchez-López, 2012; Brabete, Sánchez-López, Cuéllar-Flores & Rivas-Diez, 2013), the rest of those reviewed were in English. Two other studies were found which were researched in Spain (Sánchez-López, Cuéllar-Flores & Dresch, 2012; Sánchez-López, Rivas-Diez & Cuéllar-Flores, 2013), two in Sweden (Hensing & Spak, 2009; Hensing, Spak, Thundal & Östlund, 2003), four in Australia (Mahalik, Levi-Minzi & Walker, 2007b; Ricciardelli, Williams & Kiemann, 1998; Williams & Ricciardelli, 1999; Williams & Ricciardelli, 2001), one in Germany (Möller-Leimkühler, Schwarz, Burtscheidt & Gaebel, 2002) and the other thirteen in the United States.

As regards samples, in some studies these comprised only men (Good et al., 2008; Gordon et al., 2013; Iwamoto, Corbin, Lejuez & MacPherson, 2014; Iwamoto, Cheng, Lee, Takamatsu & Gordon, 2011), others only women (Kaya, Iwamoto, Grivel, Clinton & Brady, 2016), and the rest used mixed samples.

Table 1 presents the different instruments used to assess conformity with gender norms, developed over four decades, from 1974 to 2014. The proportion of studies per instrument is rather modest: the instrument most widely used is the CMNI (Mahalik et al., 2003), in 37.5% of studies, followed by CFNI (Mahalik et al., 2005), in 16.6%. The use of questionnaires with reliability indices below 0.80 in all or some of their scales is relatively frequent, but only two of the 16 instruments report reliability indices below 0.60 (see Kulis, Marsiglia, Lingard, Nieri & Nagoshi, 2008; and Van Gundy, Schieman, Kelley & Rebellon, 2005). Some instruments were found which were difficult to access or not well known, such as the GEPAQ (Runge, Frey, Gollwitzer, Helmreich & Spence, 1981) or MRNI-R (Levant et al., 2007). In terms of alcohol use assessment, it should be noted that most studies tend to include this in a series of items as part of a battery of questions regarding general health, while others use specific questionnaires, as in the case of *Daily Drinking Questionnaire* (DDQ) by Collins, Parks and Marlatt (1985), the *Brief Young Adult Alcohol Consequences Questionnaire* (B-YAACQ) by Kahler, Strong and Read (2005), or the *Rutgers Alcohol Problem Index* (RAPI) by White and Labouvie (1989).

Table 2 shows the main characteristics of the studies included in the review and their principal results, which vary according to the different instruments used and the different scales included in each. First, three studies do not use a standardised instrument to assess conformity with

gender norms, but select items to evaluate gender identity from other studies, research and/or instruments validated and standardised in the framework of other research. The first of these, by Kulis et al. (2008), concludes that there is a significant relationship between aggressive masculinity (aggressiveness, domination, disobedience) and substance use, including alcohol, as well as between affective femininity (empathy, expression of emotions) with lower alcohol use and more protective behaviours, all with small to moderate effect size. In a later study (Kulis, Marsiglia & Nagoshi, 2010), a significant relationship was found between assertive masculinity (assertiveness, personal value, self-confidence) and lower alcohol use in men, while in women aggressive masculinity and submissive femininity (submission, dependence) was positively related to higher levels of drinking, with a moderate effect size in all. Finally, the study by Lye and Waldron (1998), found that attitudes towards non-traditional gender roles were associated with lower alcohol use in men, with moderate to large effect size, and that non-traditional attitudes towards cohabitation and marriage were associated with less drinking in both men and women, particularly in the case of attitudes towards cohabitation, where the effect size was large.

The remaining studies reviewed used a total of 14 standardised instruments, including the short versions. The following were not used very frequently in the study of alcoholism. First, the *Personal Attributes Questionnaire* (PAQ), used by Van Gundy et al. (2005) on a sample of men and women from Toronto, obtained positive relationships between femininity and alcohol use in women, with a moderate effect size. Second, the *German Extended Personal Attributes Questionnaire* (GEPAQ) was used in a single study with a clinical sample (Möller-Leimkühler et al., 2002), which found a predominance of female identity, undifferentiated in alcoholic women and men, while a predominance of masculine or androgynous identity was found in non-alcoholic men, and of androgynous identity in non-alcoholic women. Third, the use of the *Gender Role Conflict Scale* (GRCS) highlighted a direct relationship of moderate effect size between the success, power and competition dimensions of this questionnaire and the number of alcoholic drinks per episode (Good et al., 2008). This scale was applied in another study together with the *Male Role Norms Inventory Revised instrument* (MRNI-R), obtaining results with a large effect size which linked alcohol use in men with traditional masculine ideology (Uy, Massoth & Gottdiener, 2014). Similarly, but with a small effect size and using the *Masculine Role Norms Scale* (MRNS) instrument, the study also revealed that certain aspects of traditional masculinity, such as "toughness", were linked to alcohol use (Gordon et al., 2013).

Other instruments have been used more assiduously by researchers in the study of alcohol and other substance use. One such case is the *Bem Sex Role Inventory* (BSRI)

Table 1. *Gender measurement instruments used in the studies included in the review*

Instrument	Author(s) & Year	Psychometric properties	Studies in which it was used
1 Sex-Role Inventory (BSRI)	Bem (1974)	60 items. 3 scales: Masculinity, Femininity and Social desirability. Internal consistency between $\alpha=.70$ and $\alpha=.86$.	Van Gundy, Schieman, Kelley & Rebellon (2005)
2 Personal Attributes Questionnaire (PAQ)	Spence & Helmreich (1978)	24 items. 2 scales: Instrumentality-Masculinity and Expressivity-Femininity. Internal consistency of $\alpha=.69$ and $\alpha=.52$ respectively.	Van Gundy, Schieman, Kelley & Rebellon (2005)
3 Bem Sex-Role Inventory – Short Form (BSRI-S)	Bem (1981)	18 items. 3 scales: Personal masculinity, Social masculinity and Femininity. Internal consistency between $\alpha=.66$ and $\alpha=.92$.	Vaughan, Wong & Middendorf (2014)
4 Australian Sex-Role Scale (ASRS)	Antill, Cunningham Russell & Thompson (1981)	40 items. 4 scales: Positive masculinity, Negative masculinity, Positive femininity, Negative femininity. Internal consistency between $\alpha=.62$ and $\alpha=.81$.	Ricciardelli, Williams & Kieman (1998) Williams & Ricciardelli (1999) Williams & Ricciardelli (2001)
5 German Extended Personal Attributes Questionnaire (GEPAQ)	Runge, Frey, Gollwitzer, Helmreich & Spence (1981)	40 items. 2 scales: Masculinity and Femininity. Internal consistency of $\alpha=.82$ and $\alpha=.85$ respectively.	Möller-Leimkühler, Schwarz, Burtscheidt & Gaebel (2002)
6 Gender Role Conflict Scale (GRCS)	O'Neil, Helms, Gable, David & Wrightsman (1986)	37 items. 4 factors: Success, Power, Competition; Restricted emotionality; Restricted affectionate behaviour among men; Conflict between work and family relationships. Internal consistency between $\alpha=.80$ and $\alpha=.87$.	Good et al. (2008) Uy, Massoth & Gottdiener (2014)
7 Masculine Role Norms Scale (MRNS)	Thompson & Pleck (1986)	26 items. 3 scales: Status, Tenacity and Antifemininity. Internal consistency between $\alpha=.74$ and $\alpha=.81$.	Gordon et al. (2013)
8 Masculinity and Femininity Questionnaire (M/F-Q)	Bergman et al. (1988)	31 items. 4 scales: Leadership, Concern for others, Self-affirmation and Emotivity. Internal consistency between $\alpha=.63$ and $\alpha=.76$.	Hensing, Spak, Thundal & Ostlund (2003) Hensing & Spak (2009)
9 Cuestionario sobre roles de género y cohabitación	Lye & Waldron (1998)	Not standardised. 15 items selected from four different questionnaires about traditional attitudes towards gender roles. Internal consistency of $\alpha.60$.	Lye & Waldron (1998)
10 Conformity to Masculine Norms Instrument (CMNI)	Mahalik et al. (2003)	94 items. 11 scales: Winning, Emotional control, Risk taking, Violence, Power over women, Dominance, Womanising, Self-reliance, Primacy of work, Disdain of homosexuality and Pursuit of status. Internal consistency: Total $\alpha=.94$; Scales between $\alpha=.72$ and $\alpha=.91$. Spanish adaptation (Cuéllar-Flores, Sánchez-López & Dresch, 2011). Total $\alpha=.89$; Subscales between $\alpha=.64$ and $\alpha=.81$.	Liu & Iwamoto (2007); Mahalik, Levi-Minzi & Walkier (2007); Good, Schopp, Thomson, Hathaway, Mazurek & Sanford-Martens (2008); Iwamoto et al. (2011); Iwamoto & Smiler (2013); Brabete & Sánchez-López (2012); Sánchez-López, Cuéllar-Flores & Dresch (2012); Brabete, Sánchez-López, Cuéllar-Flores & Rivas-Diez (2013); Sánchez-López, Rivas, Diez, & Cuéllar-Flores (2013)
11 Conformity to Feminine Norms Inventory (CFNI)	Mahalik et al. (2005)	84 items. 8 scales: Nice in relationships, Caring for children, Thinness, Sexual fidelity, Modesty, Romantic relationship, Domestic and Invest in appearance. Internal consistency: Total $\alpha=.88$; Subscales between $\alpha=.77$ and $\alpha=.92$. Spanish adaptation (Sánchez-López, Cuéllar-Flores, Dresch & Aparicio-García, 2009). Total $\alpha=.87$; Subscales between $\alpha=.64$ and $\alpha=.86$.	Brabete & Sánchez-López (2012). Sánchez-López, Cuéllar-Flores & Dresch (2012). Brabete, Sánchez-López, Cuéllar-Flores & Rivas-Diez (2013). Sánchez-López, Rivas, Diez & Cuéllar-Flores (2013).
12 Male Role Norms Inventory-Revised (MRNI-R)	Levant et al. (2007)	53 items. 7 scales: Avoidance of femininity, Negativity towards sexual minorities, Self-reliance, Aggression, Dominance, Non-relational attitudes towards sexuality, Restrictive emotionality. Internal consistency: Total $\alpha=.97$. Subscales between $\alpha=.73$ and $\alpha=.96$.	Uy, Massoth & Gottdiener (2014)
13 Gender Identity Questionnaire	Kulis, Marsiglia, Lingard, Nieri & Nagoshi (2008)	Not standardised. 13 items derived from Bem Sex-Role Inventory (BSRI) and Australian Sex-Role Scale (ASRS). 4 scales: Assertive masculinity Negative masculinity, Affective femininity and Negative femininity. Internal consistency between $\alpha=.50$ and $\alpha=.66$.	Kulis, Marsiglia, Lingard, Nieri & Nagoshi (2008) Kulis, Marsiglia & Nagoshi (2010)
14 14. Conformity to Masculine Norms Inventory-46 (CMNI-46)	Parent & Moradi (2009)	Short version of CMNI. 46 items. Internal consistency of subscales between $\alpha=.77$ and $\alpha=.91$.	Iwamoto et al. (2011) Iwamoto, Corbin, Lejuez & MacPherson (2014)
15 15. Conformity to Feminine Norms Inventory-45 (CFNI-45)	Parent & Moradi (2010)	Short version of CFNI. 45 items. The Sweet and nice scale was added. Internal consistency of subscales between $\alpha=.67$ and $\alpha=.90$.	Kaya, Iwamoto, Grivel, Clinton & Brady (2016)
16 16. Conformity to Masculine Norms Inventory-29 (CMNI-29)	Hsu & Iwamoto (2014)	Short version of CMNI. 29 items. 8 scales: Winning, Womanising, Independence, Violence, Heterosexual presentation, Risk taking, Emotional control and Power. Internal consistency of subscales between $\alpha=.70$ and $\alpha=.85$.	Kaya, Iwamoto, Grivel, Clinton & Brady (2016)

and its short form (BSRI-S). In the study by Van Gundy et al. (2005), the BSRI yields a negative association between masculinity and drinking levels in men; Vaughan, Wong and Middendorf (2014) on the other hand, using the BSRI-S, which distinguishes between personal and social facets of masculinity, found that social masculinity is related to excessive alcohol use, both in men and women. Both studies had large effect sizes. In the studies that used the *Australian Sex Role Scale* (ASRS) (Ricciardelli et al., 1998; Williams & Ricciardelli, 1999; Williams & Ricciardelli, 2001), it is clear that high scores in the scales of negative masculinity (aggressiveness, boasting) were linked in both sexes to problems with alcohol (dependence) and risk taking caused by drinking (disinhibition), while low scores in positive masculinity and femininity (characteristics positively associated with masculinity, such as assertiveness and self-confidence, and with femininity, such as love of children) were associated with people with a high probability of developing alcohol problems; these relationships were reported to have moderate to large effect sizes. Two of the studies reviewed (Hensing et al., 2003; Hensing & Spak, 2009) used the *Masculinity and Femininity Questionnaire* (M/F-Q) with an exclusively female sample. The results showed low scores on leadership and self-affirmation to be significantly related, albeit with a small effect size, with an increased likelihood of alcohol problems and abuse. Moreover, significant relationships of moderate effect size were found between the increase in this probability and high scores in emotivity.

Finally, a total of ten studies were found which used the *Conformity to Masculine Norms Inventory* (CMNI) and *Conformity to Feminine Norms Inventory* (CFNI) and its different versions. Four of the studies reviewed were carried out with the Spanish adaptation of the instrument. Among its results are positive relationships of moderate effect size between male drinking and the total score for conformity with masculine norms, as well as with the scales for playboy (or womanising) and pursuit of status (Brabete & Sánchez-López, 2012). Also positive, but with a small effect size were the relationships with dominance, violence and risk taking (Brabete et al., 2013; Sánchez-López et al., 2012). Negative relationships were found between male alcohol use and the scales for emotional control and heterosexual presentation (Brabete & Sánchez-López, 2012; Sánchez-López et al., 2012; Sánchez-López et al., 2013). Among women, drinking was inversely linked to total agreement with traditional feminine norms (Brabete & Sánchez-López, 2012) and with the scales for childcare (Brabete & Sánchez-López, 2012; Brabete et al., 2013), sexual fidelity (Brabete & Sánchez-López, 2012; Brabete et al., 2013; Sánchez-López et al., 2012; Sánchez-López et al., 2013), domestic and modesty (Brabete et al., 2013), and romantic relationship (Brabete et al., 2013; Sánchez-López et al., 2012); conformity with the invest in appearance norm was

the only one directly linked to greater alcohol use. Effect sizes in most of these relationships were moderate.

Kaya et al. (2016) used only female samples when applying the short versions of questionnaires regarding agreement with male and female gender roles (CMNI-29 and CFNI-45). The results obtained indicated direct associations between alcohol use and the scales for risk taking, emotional control and nice in relationships, and negative or inverse associations with the scales for power over women, modesty and sexual fidelity. Regarding problems caused by drinking, positive relationships were found for risk taking, thinness and invest in appearance, and a negative one with the sexual fidelity.

Finally, it is worth highlighting six studies which used only the CMNI exclusively with samples of men, together with the study by Iwamoto and Smiler (2013), which did so with samples of men and women. Good et al. (2008), in the same study mentioned above, found direct associations, also of moderate effect size, between excessive drinking or drunkenness and the masculinity norm of dominance of the CMNI. In the study by Iwamoto et al. (2011), alcohol poisoning and alcohol-related problems were directly linked to the winning, risk taking, playboy, power over women, self-reliance and primacy of work scales, all with small to moderate effect sizes. Likewise, the results showed that the masculine norms which increase the risk of alcohol-related problems are the playboy role, with a moderate effect size, and, with a small effect, risk taking and self-reliance, (Iwamoto et al., 2011). In the study by Iwamoto & Smiler (2013), the highest level of conformity with the risk taking and heterosexual presentation norms predicted the consumption of alcohol in men, as did conformity with risk taking in women. In general, the results of the Iwamoto et al. studies with men's samples showed a positive correlation between drinking and the CMMI playboy, winning and risk taking scales, with small to moderate effect sizes, as well as a direct relationship between the increased risk of alcohol problems and the scales for risk taking, self-reliance and playboy (Iwamoto & Smiler, 2013; Iwamoto et al., 2014; Liu & Iwamoto, 2007). Finally, the study by Mahalik et al. (2007b) found a direct relationship between the highest number of health-risk behaviours (including high alcohol use) and the self-reliance, playboy and violence scales, with moderate effect sizes.

Discussion

The aim of this study was to provide evidence, through a systematic review of the research that has been carried out in the field of study, regarding conformity with gender norms in terms of the possible relationship with alcohol use among men and women, as well as how to synthesise the main conclusions obtained in the research on the subject.

Table 2. *Characteristics and main results of the studies included in the review*

Authors and date of publication	Country	Objective	Sample and instruments	Main results
Brabete & Sánchez-López (2012)	Spain	Determine if gender norms are related to health variables in a sample of Romanians living in Spain.	188 Rumanians in Spain (70 women / 48 men) Gender: aCMNI and CFNI. Alcohol: 1 question about use in a health test.	Women: total conformity in CFNI, and conformity with the norms "Childcarer" and "Sexual fidelity", linked to lower use (rbp= -0.30, p<.01; rbp= -0.35, p<.01; and rbp= -0.48, p<.01); conformity with norm "Invest in appearance" linked to higher use (rbp= 0.25, p<.05). Men: total conformity en CMNI, conformity with "Playboy" and with "Pursuit of status", linked to greater use (rbp= 0.27; p<.05; rbp= 0.43, p<.01; and rbp= 0.27, p<.05); and conformity with the norm "heterosexual presentation" linked to lower use (rbp= -0.30; p<.05).
Brabete et al. (2013)	Spain	Determine if gender norms are related to smoking and alcohol use in a sample of Romanians living in Spain.	750 Rumanians in Spain (489 women / 261 men) Gender: CMNI and CFNI. Alcohol: two questions to confirm smoking and alcohol use	Women: total conformity in CFNI, and conformity with the norms "Childcarer", "Sexual fidelity", "Modesty", "Romantic relationship" and "Domestic", linked to lower use (rbp= 0-.20, p<.05; rbp= -0.19, p<.05; rbp= -0.22, p<.05; rbp= -0.20, p<.05; and rbp= -0.11, p<.05). Men: conformity with norms "Risk taking", "Violence" and "Playboy", linked to higher use (rbp= 0.11, p<.01; rbp= 0.11, p<.01; and rbp= 0.10, p<.01).
Good et al. (2008)	USA	Improve the understanding of male roles and conflicts associated with alcohol use in men with serious injuries.	52 men with spinal cord injuries and brain trauma. Gender: bGRCS and CMNI. Alcohol: drinks consumed in a session and the current frequency of binge drinking.	Masculine roles associated with "Success, Power, or Competing" are linked to greater use (rs= 0.46, p<.05). Greater conformity with the norm "Dominance", linked to higher consumption of drinks per sitting (rs= 0.43, p<.05) and with excessive use or binge drinking (rs= 0.47, p<.05).
Gordon et al. (2013)	USA	Examine the relationship between traditional male norms of an ethnically and racially diverse group of young men who have become parents and the substance use (tobacco, alcohol, marijuana, drugs) and their health habits (diet, exercise).	296 men. Gender: cMRNS. Alcohol: question about alcohol use and <i>Recreational Drug Use Scale</i> .	Greater acceptance of "Toughness" is linked to higher alcohol use [OR (95% CI)= 1.725; p<.01]. The norm "Status" is linked to lower use, although only weakly [OR (95% CI)= 0.78; p=.063].
Hensing & Spak (2009)	Sweden	Analyse in women the association between four dimensions of gender identity and the variables of alcohol use (1AUD and 1HED)	930 women. Gender: dM/F-Q. Alcohol: AUD and HED (at least 60 g in a single day at least once a month).	Women with low "Leadership", greater likelihood of alcohol abuse and dependence [OR (95% CI)=1.95 (1.17- 3.26)].
Hensing et al. (2003)	Sweden	Analyse the dimensions of gender identity and its association with psychiatric disorders and alcohol use (1HED and 3HAC).	836 women. Gender: M/F-Q. Alcohol: Dependence and abuse (DSM-III-R), HED (at least 60 g of ethanol in a single day at least once a month) and HAC (at least ≥600 g ethanol per month during the last 12 months).	Women with low "Leadership", greater likelihood of alcohol abuse and dependence [OR (95% CI)= 1.93 (1.23-3.01)]. Women with low "Self-affirmation", greater likelihood of abuse and dependence [OR (95% CI)= 1.98 (1.25-3.07)]. Women with high "Emotivity", greater likelihood of abuse and dependence [OR (95%)= 3.22 (1.96-5.30)]
Iwamoto & Smiler (2013)	USA	Analyse the relationship between gender conformity, group pressure and alcohol use in the young population.	124 women and 138 men. Gender: 5 of the CMNI subscales. Alcohol: frequency with which "beer, soft drinks mixed with wine or cider" are consumed.	Greater conformity with "Heterosexual presentation" (.16, p<.05), Playboy (.25, p<.01), and "risk taking" (.17, p<.01) predicts drinking among men. Greater conformity with "Risk taking" (.20, p<.01) predicts drinking among women.
Iwamoto et al. (2011)	USA	Analyse the relationship between gender and risk factors of intoxication and other alcohol-related problems, specifically in men.	776 men. Gender: eCMNI-46. Alcohol: Drinking to intoxication and Alcohol Related Problems (4 RAPI).	Masculine norms of "Winning" (r = 0.14, p<.01), "Risk taking" (r = 0.20, p<.01), and "Playboy" (r = 0.25, p<.01), were positively associated with drinking to intoxication. Masculine norms of "Risk taking" (r = 0.19, p<.01), "Power over women" (r = 0.20, p<.01), Playboy (r = 0.28, p<.01), "Self-reliance" (r = 0.10, p<.01), and "Primacy of work" (r = 0.09, p<.05) are linked to increased alcohol-related problems. The three masculine norms which increase the risk of alcohol-related problems are "Playboy" (IRR = 5.01, p<.0001), "Risk taking" (IRR = 2.66, p<.0001), e "Self-reliance" (IRR =3.12, p<.0001).
Iwamoto et al. (2014)	USA	Investigate the role of positive expectations of alcohol use as a mediator between male gender norms and drinking among university men.	806 men. Gender: CMNI-46. Alcohol: 5DDQ (Estimated alcohol consumption in the last three months) and one item on binge drinking.	The masculine norms directly linked to higher consumption are "Playboy" (r= 0.26, p<.01), "Risk taking" (r= 0.1, p<.01) and "Winning" (r= 0.23 (p<.01). The masculine norm "Heterosexual presentation" is inversely related to frequency of alcohol use (r= -0.13, p<.01).
Kaya et al. (2016)	USA	Examine the conformity of women to masculine and feminine norms and their relation with drinking and alcohol-related problems in a sample of female university students.	645 women. Gender: fCMNI-29, gCFNI-45. Alcohol: HED and alcohol-related problems (6B-YAACQ).	Three masculine norms were significantly linked to HED: "Risk taking" and "Emotional control" with greater use (IRR = 1.11, p<.05, and IRR= 1.07, p<.05); and "Power over women" with lower use (IRR =.89, p<.01) Three feminine norms were significantly linked to HED: "Modesty" (IRR=.93, p<.05) and "Sexual fidelity" (IRR=.86, p<.001) with lower HED, "Relationships" (IRR=1.06, p<.05) with higher HED.

				The masculine norm "Risk taking" (IRR=1.65, $p < .001$), and the feminine norms "Thinness" (IRR =1.20, $p < .01$) and "Invest in appearance" (IRR=1.16, $p < .01$), were positively linked to alcohol-related problems. The feminine norm "Sexual fidelity" was negatively linked to alcohol-related problems (IRR=.70, $p < .001$).
Kulis et al. (2010)	USA	Analyse the relationship between positive and negative gender roles, externalizing and internalizing behaviour problems and substance use.	151 Latino students. 91 women, 60 men. Gender: 12-item scale for four gender role orientations. Alcohol: 6 items about drinking.	"Assertive masculinity" linked to lower drinking in men ($r = -0.27$, $p < .05$). "Aggressive masculinity" and "Submissive femininity", linked to higher drinking in men ($r = 0.31$, $p < .01$; $r = 0.25$, $p < .05$)
Kulis et al. (2008)	USA	Analyse if measures of gender identity predict substance use, intentions of use, expectations, among others.	327 Latino students. Gender: 12-item scale for four gender role orientations. Alcohol: 6 items about drinking.	"Aggressive masculinity" was associated with higher substance use, including alcohol (scores from $r = 0.12$ to 0.29). "Affective femininity" linked to lower recent alcohol use ($r = -0.21$) and less excessive drinking ($r = -0.17$), and with more protective behaviours, such as lower intention of drinking ($r = -0.12$), and less approval ($r = -0.28$).
Liu & Iwamoto (2007)	USA	Explore the relationship between Asian values, gender roles, coping styles and substance use.	154 Asian-American students. Gender: CMNI. Alcohol: alcohol use and binge drinking behaviour.	Higher alcohol consumption was positively related to total conformity with male norms ($r = 0.17$, $p < .05$), Winning ($r = 0.20$, $p < .05$), Pursuit of status ($r = 0.29$, $p < .01$), Playboy ($r = 0.20$, $p < .05$), Risk taking ($r = 0.17$, $p < .05$) and violence ($r = 0.17$, $p < .05$); and negatively to emotional control ($r = -0.20$, $p < .05$). Binge drinking was positively linked to total conformity with masculine norms ($r = 0.18$, $p < .05$), and with the norms of "Winning" ($r = 0.19$, $p < .05$), "Pursuit of status" ($r = 0.23$, $p < .01$), and "Playboy" ($r = 0.29$, $p < .01$); and negatively to emotional control ($r = -0.18$, $p < .05$). The norm "Power over women" significantly predicts alcohol abuse (OR= 1.31, $p < .01$).
Lye & Waldron (1998)	USA	Analyse the relationship between alcohol consumption, marijuana and other illicit drugs and attitudes regarding gender roles, family and cohabitation.	Range: 756-963 women, 821-1095 men. Gender: 36 items on four different questionnaires about non-traditional attitudes towards gender roles, and towards cohabitation and marriage. Alcohol: items about past drinking habits and consumption in the last 30 days.	Attitudes towards non-traditional gender roles in men were associated with lower alcohol use ($p < .001$). Among women, there were only a few and weaker and inconsistent relationships between the measures of traditional gender roles and alcohol use. Non-traditional attitudes towards cohabitation and marriage were strongly associated with lower alcohol consumption in both men and women, particularly for attitudes towards cohabitation ($p < .001$).
Mahalik, Levi-Minzi & Walker (2007b)	Australia	Confirm whether the health of Australian men and their health behaviours have a significant relationship with the conformity to traditional male norms.	253 Australian men. Gender: CMNI. Alcohol: item included in <i>Health Behavior Inventory</i> (HBI).	The frequency of health-risk behaviour (including alcohol use) was associated with the norms "Self-reliance" ($r = 0.24$, $p < .001$), "Womanising" ($r = 0.29$, $p < .001$) and "Violence" ($r = 0.26$, $p < .001$).
Möller-Leimkühler et al. (2002)	Germany	Explore if the understanding gender orientation would be a useful contribution to the hypothesis that the increase of women with alcoholism is due to the change in traditional feminine roles.	112 persons currently detoxed (36 women, 76 men). Gender: gender role orientation (hGEPAQ). Alcohol: results of assessment before detoxification.	Significant differences for each of the four identities in gender roles in both samples, alcoholics and non-alcoholics ($p < .05$): - predominance of undifferentiated feminine identity in alcoholic women and men; - predominance in non-alcoholic men of masculine or androgynous identity; - predominance in non-alcoholic women of androgynous identity.
Ricciardelli et al. (1998)	Australia	Investigate the relationship between desirable and undesirable aspects of masculinity and femininity and aspects derived from eating (restriction) and drinking alcohol.	114 women students. Gender: iASRS. Alcohol: two items on consumption per week and the <i>Alcohol Dependence Scale</i> .	"Negative Masculinity" was linked to high scores on "Alcohol dependence" and "Disinhibition" ($p < .05$).
Sánchez-López et al. (2012)	Spain	Evaluate if gender is related to substance use and chronic diseases.	Spanish university students. 234 women and 226 men. Gender: CMNI and CFNI. Alcohol: item about frequency of alcohol use.	Drinking in men was directly linked to conformity with norms of "Dominance" ($r = 0.138$, $p < .05$) and "Playboy" ($r = 0.199$, $p < .05$). Drinking in women was inversely linked to total conformity ($r = -0.244$, $p < .001$), "Sexual fidelity" ($r = -0.277$, $p < .001$) and "Being romantic" ($r = -0.331$, $p < .001$). Positive conformity with the norms "Playboy" and "Dominance", and negative or inverse conformity with "Winning", accounting for 7% of the variance in male alcohol use ($p < .001$). Conformity with feminine norms "Being romantic" and "Sexual fidelity" were associated with lower alcohol use, accounting for 13% of the variance in women ($F = 19.61$; $p < .001$)
Sánchez-López et al. (2013)	Spain	Analyse the impact of conformity to gender norms in conformity and alcohol use.	Spanish university students. 435 women and 419 men. Gender: CMNI and CFNI. Alcohol: items on frequency of consumption in the last two weeks taken from the National Health Survey (INE, 2006).	Men with higher scores on the "emotional control" scale were less likely to drink alcohol ($R^2 = 7.6\%$, $p < .001$). Men with higher scores on the scale of "Playboy" and "Violence" were more likely to drink ($R^2 = 10.2\%$ and 7.4% , $p < .01$ and $p < .05$ respectively) Women with higher scores on the "Sexual fidelity" scale were less likely to drink ($R^2 = 10.4\%$, $p < .01$).

Uy et al. (2014)	USA	Analyse the link between traditional masculine ideology, the conflict of gender roles, reasons for drinking and alcohol use.	109 men. Gender: jMRNI-R and kGRCS. Alcohol: <i>Drinking Motives Questionnaire-Revised and Daily Drinking Questionnaire-Revised</i> .	A significant total indirect effect of traditional male ideologies on alcohol problems was observed (.19, p<.05) 25.9% of the variance associated with alcohol use was due to traditional male ideologies and reasons for drinking.
Van Gundy et al. (2005)	USA	Examine the effects of sex, masculinity and femininity on alcohol use.	Moscow: 1996 sample of 804 personas. // Toronto: 1995 sample of 1361 personas. Gender: IBSRI (Moscow) and mPAQ (Toronto). Alcohol: frequency of use in last 30 days and quantity (Moscow) and frequency last 12 months and quantity (Toronto).	Significant interaction between sex and masculinity in the Moscow sample: masculinity is negatively associated with level of alcohol use in men, and weakly and <i>positively</i> among women (b = .808; p<.01) Significant interaction and femininity in the Toronto sample: femininity increases women's alcohol use (b = .366; p<.05)
Vaughan et al. (2014)	USA	Test the relationship between gender roles and binge drinking in a sample of adult Latinos.	660 people. Gender: nBSRI-5 (femininity, social masculinity and personal masculinity) Alcohol: binge drinking and alcohol problems.	Social masculinity is associated with excessive alcohol use in men and women (OR= >100, p<.05).
Williams & Ricciardelli (1999)	Australia	Examine the relationship between stereotyped gender characteristics and alcohol use.	422 university students (243 women and 179 men). Gender: ASRS. Alcohol: <i>Short Form Michigan Alcoholism Screening Test</i> (SMAST), average drinks per episode and average number of drink days per week.	Two consumption patterns were identified: One linked to Negative masculinity (.69) and Positive femininity (-.86). Another linked to Positive masculinity and femininity (-.96 and -.41) The importance of including gender attributes, both positive and negative, in the study of gender stereotypes and alcohol use behaviours is highlighted.
Williams & Ricciardelli (2001)	Australia	Study the relationship between symptoms of alcohol problems and eating disorders with gender characteristics and with evidence of comorbidity in students.	217 university women. Gender: ASRS. Alcohol: SMAST, average drinks per sitting, average number of drink days per week and <i>The Alcohol Dependence Scale</i> (ADS).	Two consumption patterns were identified: One linked to Positive masculinity (.89) and Negative femininity (-.61). Another to Negative masculinity (.85).

Note. Gender instruments: a = Conformity to Masculine/Feminine Norms Inventory, b = Gender Role Conflict Scale, c = Masculine Role Norms Scale, d = Masculinity and Femininity Questionnaire, e = Conformity to Masculine Norms Inventory-46, f = Conformity to Masculine Norms Inventory-29, g = Conformity to Feminine Norms Inventory-45, h = German Extended Personal Attributes Questionnaire, i = Australian Sex-Role Scale, j = Male Role Norms Inventory-Revised, k = Gender-Role Conflict Scale, l = Bem Sex Role Inventory, m = Personal Attributes Questionnaire, n = Bem Sex Role Inventory-Short Form.
Notes: 1AUD= Alcohol use disorder; 2HED= Heavy episodic drinking, 3HAC= High alcohol consumption, 4RAPI= Rutgers Alcohol-Related Problems, 5DDQ= Daily Drinking Questionnaire, 6B-YAACQ= Brief Young Adult Alcohol Consequences Questionnaire.

One of the main aspects observed in this review has been the diversity of conclusions reached by the different authors. This could be explained by the variability of the questionnaires used and the different characteristics and provenance of the samples under study, with few results which permit generalisation. In general, and despite this diversity, three aspects can be highlighted on which consistent evidence has been obtained in the studies reviewed regarding the relationship between gender and alcohol consumption.

First, heavier drinking seems to be related to masculinity. Different studies have found that traditional masculine ideology is linked with a large effect size to higher levels of drinking in men (Uy et al., 2014), and the social facet or dimension associated with masculinity is related to excessive use or drunkenness (Vaughan, Wong & Middendorf, 2014). Equally noteworthy are some specific dimensions associated with gender norms, linked with moderate effect sizes to alcohol use in men, such as aggression (Kulis et al., 2008; Mahalik et al., 2007b; Sánchez-López et al., 2013), dominance (Brabete & Sánchez-López, 2012; Good et al., 2008), risk taking (Iwamoto et al., 2011; Iwamoto et al., 2014; Iwamoto & Smiler, 2013; Kaya et al., 2016), womanising (Brabete & Sánchez-López, 2012; Iwamoto et al., 2011; Iwamoto et al., 2014; Iwamoto & Smiler, 2013; Liu &

Iwamoto, 2007; Mahalik et al., 2007b; Sánchez-López et al., 2012; Sánchez-López et al., 2013), independence (Mahalik et al., 2007b), success (Good et al., 2008; Iwamoto & Smiler, 2013; Liu & Iwamoto, 2007) or the pursuit of admiration or social status (Brabete & Sánchez-López, 2012; Liu & Iwamoto, 2007).

Second, there seems to be some consensus on the relationship between drinking and female gender norms. In general, the characteristics that define traditional femininity appear as protective variables in connection with alcohol consumption. Both general conformity with traditional feminine norms, as well as some specific dimensions such as interest in raising children (Brabete & Sánchez-López, 2012; Brabete et al., 2013), sexual fidelity (Brabete & Sánchez-López, 2012; Brabete et al., 2013; Kaya et al., 2016; Sánchez-López et al., 2013), domestic (Brabete & Sánchez-López, 2012; Brabete et al., 2013) or romantic relationship (Brabete et al., 2013; Sánchez-López et al., 2012), appear as variables linked to lower alcohol use in women, with moderate to large effect sizes.

Third, despite some evidence of the relationship between traditionally male behaviour and drinking, and also of the protective profile of aspects linked to traditional femininity in terms of alcohol use, the reverse is not the case; that is,

there is not as much evidence regarding protective variables in men, or of variables related to higher levels of drinking in women. Some studies confirm the hypothesis that men who agree more with positive or assertive aspects of masculinity (Gordon et al., 2013; Kulis et al., 2010) drink less alcohol, and also that women who identify more with negative aspects of traditional femininity, such as submission, and masculinity, such as aggression, drink more (Kulis et al., 2010; Van Gundy et al., 2005). However, such data are not common and should be studied in greater depth; similarly, instead of questionnaires designed for men being used to evaluate women, measurement instruments are being developed which are adapted to both sexes for the assessment of identification with both male and female norms. Furthermore, the present review raises the issue of how relevant changes in social norms and roles are. Some authors point out that the traditional role of women is being transformed and with it the reasons to drink. For example, it has been suggested that one of the reasons for drinking in women may be based on the need to feel equal to men by adopting health-risk behaviours such as alcohol use, as has been seen in the case of women identifying or conforming more strongly with the negative aspects associated with traditional masculinity-related gender norms (Kaya et al., 2016; Williams & Ricciardelli, 1999). There is thus a clear need to consider new research hypotheses for the study of how conformity with both masculine and feminine gender norms can influence women's health behaviours, given the changes in the social roles of men and women, and the evidence of rising alcohol use in women (Möller-Leimkühler et al., 2002).

Although the existing data on alcohol use substantiate higher rates of drinking among men than women, this difference appears to be progressively diminishing in many countries. Such changes in drinking patterns have been linked to changes in social roles involving greater equality of opportunity between men and women and greater incorporation of women into public life, which has been associated, for example, with the incorporation of women into employment outside the home, with the adoption of typically masculine values and behaviour, or with the greater economic and consumer freedom of women (Díaz Geda, Busto Miramontes & Caamaño Isorna, 2018; Holmila & Raitasalo, 2005). Other studies indicate that there seems to be a generational change regarding the development of female gender identity and its relationship to the social perception of drinking among women. Traditionally, alcohol use has been associated with masculinity, the construction of masculine ties, aggression and transgressive behaviour (Graham & Wells, 2003), being perceived socially as less reprehensible than female drinking, which has been considered more as a threat to traditional femininity and to the management of domestic chores and family care (de Visser & McDonnell, 2012). Some authors argue that this development, more than exclusively an effect of wom-

en imitating the values associated with masculinity, could be explained by the growth of new models of femininity in which drinking is not perceived as negatively as in the traditional model. Thus, for example, it has been pointed out that younger generations of women perceive alcohol to have less of a negative influence on female identity than older women, socialised as they were in a more traditional gender identity model (Simonen, Törrönen & Tigerstedt, 2013). However, this perception seems to be linked to drinking in certain places or situations, such as social or leisure spaces (Törrönen, Rolando & Beccaria, 2017). From this perspective, recent research has pointed out the importance of studying the combined role of age and gender roles in the onset and maintenance of alcohol use (Fernández Rodríguez, Dema Moreno & Fontanil Gómez, 2019).

In light of the data reviewed, research seems to confirm that there are significant relationships between drinking and conformity with certain gender norms, aspects which have to do with learning processes and differential socialisation with regard to what is considered masculine and feminine within each society, thereby highlighting its relevance to the development of strategies and programs for prevention and intervention. The morbidity or mortality profiles of any given country are linked to patterns of health behaviours, and the possibility that these may be modified by promoting healthy practices depends on identifying social beliefs, such as those around traditional male and female roles. However, one of the greatest challenges facing research on this subject is the difficulty of obtaining generalisable results for the study of gender norms due to the influence on them of the specific culture and society in which they are assessed. The development and standardisation of gender measures and their adaptation to different cultural and geographical contexts, as is the case of some of the questionnaires used in the studies reviewed (CMNI or CFNI), is a necessary task to continue deepening the understanding of these relationships and to enable generalisations and valid conclusions to be drawn from research on conformity with gender norms and their relationship to variables linked to health, such as alcohol consumption.

Among the limitations of this review, it should be noted that the results observed are limited to the selection criteria and databases which were used. Thus, publications indexed in other electronic databases, studies written in languages other than English and Spanish, or the review of other types of research not published in specialised journals have not been included in the present analysis. However, and despite the paucity of research on the subject in question, the present review allows us to draw a series of conclusions which are consistent across the studies analysed, and which highlight limitations and future research challenges.

Finally, and by way of conclusion, we can confirm that certain negative aspects traditionally related to masculinity seem to act as risk factors for alcohol use. Conversely, cer-

tain characteristics associated with femininity and a positive or assertive masculinity appear to have a protective effect against drinking. The possibility of modifying certain belief patterns associated with identity and gender norms can be an important aspect in the change and modification of certain health-risk behaviours. This possibility raises a series of future research challenges through which the study of these relationships can be deepened, gender-appropriate measurement instruments developed, and new hypotheses regarding the development of new models of femininity and masculinity explored.

Conflict of interest

The authors declare no conflicts of interest.

References

- Alvanzo, A. A., Storr, C. L., La Flair, L., Green, K. M., Wagner, F. A. & Crum, R. M. (2011). Race/ethnicity and sex differences in progression from drinking initiation to the development of alcohol dependence. *Drug and Alcohol Dependence*, 118, 375-382. doi:10.1016/j.drugalcdep.2011.04.024.
- Antill, J. K., Cunningham, J. D., Russell, G. & Thompson, N. L. (1981). An Australian Sex-Role Scale. *Australian Journal of Psychology*, 33, 169-183.
- Ávila, J. & González, D. (2007). Diferencias de género en la enfermedad alcohólica. *Adicciones*, 19, 383-392. doi:10.20882/adicciones.297.
- Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology*, 42, 155-162. doi:10.1037/h0036215.
- Bem, S. L. (1981). *Bem Sex Role Inventory professional manual*. Palo Alto, CA: Consulting Psychologists Press.
- Bergman, H., Bergman, I., Engelbrektsson, K., Holm, L., Johannesson, K. & Lindberg, S. (1988). *Psykologhandbok del 1 (Manual for Psychologists: Part 1)*. Stockholm: The Magnus Huss Clinic, Karolinska Hospital.
- Brabete, A. C. & Sánchez-López, M. P. (2012). How does the gender influence people's health? Data of a sample of Romanian people living in Spain. *Procedia-Social and Behavioral Sciences*, 33, 148-152. doi:10.1016/j.sbspro.2012.01.101.
- Brabete, A. C., Sánchez-López, M. P., Cuéllar-Flores, I. & Rivas-Díez, R. (2013). The impact of gender norms on alcohol and tobacco use at Romanians. *Procedia-Social and Behavioral Sciences*, 78, 230-234. doi:10.1016/j.sbspro.2013.04.285.
- Bríñez-Horta, J. A. (2001). Diferencias de género en problemas con el alcohol, según el nivel de consumo. *Adicciones*, 13, 439-455. doi:10.20882/adicciones.559.
- Collins, R. L., Parks, G. A. & Marlatt, G. A. (1985). Social determinants of alcohol consumption: The effects of social interaction and model status on the self-administration of alcohol. *Journal of Consulting and Clinical Psychology*, 53, 189-200. doi:10.1037/0022-006x.53.2.189.
- Courtenay, W. H. (2000). Behavioral factors associated with disease, injury, and death among men: Evidence and implications for prevention. *The Journal of Men's Studies*, 9, 81-142. doi:10.3149/jmh.0103.281.
- Cuéllar-Flores, I., Sánchez-López, M.P. & Dresch, V. (2011). El Inventario de Conformidad con las Normas de Género Masculinas (CMNI) en la población española. *Anales de Psicología*, 27, 170-178.
- de Visser, R. & McDonnell, E. J. (2012). "That's OK. He's a guy": A mixed-methods study of gender double-standards for alcohol use. *Psychology & Health*, 27, 618-639. doi:10.1080/08870446.2011.61744.
- Díaz Geada, A., Busto Miramontes, A. & Caamaño Isorna, F. (2018). Alcohol, tobacco and cannabis consumption in adolescents from a multicultural population (Burela, Lugo). *Adicciones*, 30, 264-270. doi:10.20882/adicciones.915.
- Díaz-Mesa, E. M., García-Portilla, P., Fernández-Artamendi, S., Sáiz, P. A., Bobes, T., Casares, M. J., ... Bobes, J. (2016). Diferencias de género en la gravedad de la adicción. *Adicciones*, 28, 221-230. doi:10.20882/adicciones.829.
- Ehlers, C. L., Gizer, I. R., Vieten, C., Gilder, A., Gilder, D. A., Stouffer, G. M., ... Wilhelmsen, K. C. (2010). Age at Regular Drinking, Clinical Course, and Heritability of Alcohol Dependence in the San Francisco Family Study: A Gender Analysis. *The American Journal on Addictions*, 19, 101-110. doi:10.1111/j.1521-0391.2009.00021.x.
- Ely, M., Hardy, R., Longford, N. & Wadsworth, M. (1999). Gender differences in the relationship between alcohol consumption and drink problems are largely accounted for by body water. *Alcohol and Alcoholism*, 34, 894-902. doi:10.1093/alcalc/34.6.894.
- Fernández Rodríguez, M.A., Dema Moreno, S. & Fontanil Gómez, Y. (2019). The influence of gender roles in alcohol consumption: a qualitative study of adolescents and young adults in Asturias. *Adicciones*, 31, 260-273. doi:10.20882/adicciones.1003.
- Good, G. E., Schopp, L. H., Thomson, D., Hathaway, S. L., Mazurek, M. O. & Sanford-Martens, T. C. (2008). Men with serious injuries: Relations among masculinity, age, and alcohol use. *Rehabilitation Psychology*, 53, 39-45. doi:10.1037/0090-5550.53.1.39.
- Gordon, D. M., Hawes, S. W., Reid, A. E., Callands, T. A., Magriples, U., Divney, A., ... Kershaw, T. (2013). The many faces of manhood: Examining masculine norms and health behaviors of young fathers across race. *American Journal of Men's Health*, 7, 394-401. doi:10.1177/1557988313476540.
- Graham, K. & Wells, S. (2003). Somebody's Gonna Get Their Head Kicked in Tonight Aggression among Young Males in Bars: A Question of Values? *British Journal of Criminology*, 43, 546-566. doi:10.1093/bjc/43.3.546.

- Hensing, G. & Spak, F. (2009). Lack of leadership confidence relates to problem drinking in women: gender identity, heavy episodic drinking and alcohol use disorders in Swedish women. *Alcohol and Alcoholism*, *44*, 626-633. doi:10.1093/alcalc/agg072.
- Hensing, G., Spak, F., Thundal, K. L. & Östlund, A. (2003). Decreased risk of alcohol dependence and/or misuse in women with high self-assertiveness and leadership abilities. *Alcohol and Alcoholism*, *38*, 232-238. doi:10.1093/alcalc/agg058.
- Holmila, M. & Raitasalo, K. (2005). Gender differences in drinking: why do they still exist? *Addiction*, *100*, 1763-1769. doi:10.1111/j.1360-0443.2005.01249.x.
- Hsu, K. & Iwamoto, D. K. (2014). Testing for measurement invariance in the Conformity to Masculine Norms-46 across White and Asian American college men: Development and validity of the CMNI-29. *Psychology of Men & Masculinity*, *15*, 397-406. doi:10.1037/a0034548.
- Iwamoto, D. K., Corbin, W., Lejuez, C. & MacPherson, L. (2014). College men and alcohol use: Positive alcohol expectancies as a mediator between distinct masculine norms and alcohol use. *Psychology of Men & Masculinity*, *15*, 29-39. doi:10.1037/a0031594.
- Iwamoto, D. K., Cheng, A., Lee, C. S., Takamatsu, S. & Gordon, D. (2011). "Maning" up and getting drunk: The role of masculine norms, alcohol intoxication and alcohol-related problems among college men. *Addictive Behaviors*, *36*, 906-911. doi:10.1016/j.addbeh.2011.04.005.
- Iwamoto, D. K. & Smiler, A. P. (2013). Alcohol makes you macho and helps you make friends: The role of masculine norms and peer pressure in adolescent boys' and girls' alcohol use. *Substance Use & Misuse*, *48*, 371-378. doi:10.3109/10826084.2013.765479.
- Kahler, C. W., Strong, D. R. & Read, J. P. (2005). Toward Efficient and Comprehensive Measurement of the Alcohol Problems Continuum in College Students: The Brief Young Adult Alcohol Consequences Questionnaire. *Alcoholism: Clinical & Experimental Research*, *29*, 1180-1189. doi:10.1097/01.alc.0000171940.95813.a5.
- Kaya, A., Iwamoto, D. K., Grivel, M., Clinton, L. & Brady, J. (2016). The role of feminine and masculine norms in college women's alcohol use. *Psychology of Men & Masculinity*, *17*, 206-214. doi:10.1037/men0000017.
- Kulis, S., Marsiglia, F. F., Lingard, E. C., Nieri, T. & Nagoshi, J. (2008). Gender identity and substance use among students in two high schools in Monterrey, Mexico. *Drug and Alcohol Dependence*, *95*, 258-268. doi:10.1016/j.drugalcdep.2008.01.019.
- Kulis, S., Marsiglia, F. F. & Nagoshi, J. L. (2010). Gender roles, externalizing behaviors, and substance use among Mexican-American adolescents. *Journal of Social Work Practice in the Addictions*, *10*, 283-307. doi:10.1080/1533256X.2010.497033.
- Levant, R. F., Smalley, K. B., Aupont, M., House, A. T., Richmond, K. & Noronha, D. (2007). Initial validation of the Male Role Norms Inventory-Revised (MRNI-R). *The Journal of Men's Studies*, *15*, 83-100. doi:10.3149/jms.1501.83.
- Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gotzsche, P. C., Ioannidis, J. P., ... Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. *PLoS Medicine*, *6*, e1000100. doi:10.1371/journal.pmed.1000100.
- Liu, W. M. & Iwamoto, D. K. (2007). Conformity to masculine norms, Asian values, coping strategies, peer group influences and substance use among Asian American men. *Psychology of Men & Masculinity*, *8*, 25-39. doi:10.1037/1524-9220.8.1.25.
- Lye, D. N. & Waldron, I. (1998). Relationships of substance use to attitudes toward gender roles, family and cohabitation. *Journal of Substance Abuse*, *10*, 185-198. doi:10.1016/s0899-3289(99)80133-3.
- Mahalik, J. R., Locke, B. D., Ludlow, L. H., Diemer, M. A., Scott, R. P., Gottfried, M. & Freitas, G. (2003). Development of the Conformity to Masculine Norms Inventory. *Psychology of Men & Masculinity*, *4*, 3-25. doi:10.1037/1524-9220.4.1.3.
- Mahalik, J. R., Morray, E. B., Coonerty-Femiano, A., Ludlow, L. H., Slattery, S. M. & Smiler, A. (2005). Development of the Conformity to Feminine Norms Inventory. *Sex Roles*, *52*, 417-435. doi:10.1007/s11199-005-3709-7.
- Mahalik, J. R., Burns, S. M. & Syzdek, M. (2007a). Masculinity and perceived normative health behaviors as predictors of men's health behaviors. *Social Science & Medicine*, *64*, 2201-2209. doi:10.1016/j.socscimed.2007.02.035.
- Mahalik, J. R., Levi-Minzi, M. & Walker, G. (2007b). Masculinity and health behaviors in Australian men. *Psychology of Men & Masculinity*, *8*, 240-249. doi:10.1037/1524-9220.8.4.240.
- Míguez, M. C. & Permy, B. (2017). Características del alcoholismo en mujeres. *Revista de la Facultad de Medicina*, *65*, 15-22. doi:10.15446/revfacmed.v65n1.57482.
- Mokdad, A. H., Marks, J. S., Stroup, D. F. & Gerberding, J. L. (2004). Actual causes of death in the United States, 2000. *JAMA*, *291*, 1238-1245. doi:10.1001/jama.291.10.1238.
- Möller-Leimkühler, A. M., Schwarz, R., Burtscheidt, W. & Gaebel, W. (2002). Alcohol dependence and gender-role orientation. *European Psychiatry*, *17*, 1-8. doi:10.1016/S0924-9338(02)00624-7.
- Nathanson, C. A. (1975). Illness and the feminine role: a theoretical review. *Social Science & Medicine*, *9*, 57-62. doi:10.1016/0037-7856(75)90094-3.
- Observatorio Español de las Drogas & las Adicciones (2017). Alcohol, tabaco y drogas ilegales en España: Informe 2017. Encuesta sobre alcohol y drogas en España (EDADES) 1995-2015. Madrid: Ministerio de Sanidad, Servicios Sociales e Igualdad. Retrieved at <http://www.observatorio.es>

- pnsd.mscbs.gob.es/profesionales/sistemasInformacion/sistemaInformacion/pdf/2017_Informe_EDADES.pdf.
- O'Neil, J. M., Helms, B. J., Gable, R. K., David, L. & Wrightsman, L. S. (1986). Gender-Role Conflict Scale: College men's fear of femininity. *Sex Roles, 14*, 335-350. doi:10.1007/BF00287583.
- Organización Mundial de la Salud (2016). Life expectancy and healthy life expectancy. Retrieved at <http://apps.who.int/gho/data/view.main.SDG2016LEXREG?lang=en>.
- Parent, M. C. & Moradi, B. (2009). Confirmatory factor analysis of the Conformity to Masculine Norms Inventory and development of the Conformity to Masculine Norms Inventory-46. *Psychology of Men & Masculinity, 10*, 175-189. doi:10.1037/a0015481.
- Parent, M. C. & Moradi, B. (2010). Confirmatory factor analysis of the conformity to feminine norms inventory and development of an abbreviated version: the CFNI-45. *Psychology of Women Quarterly, 34*, 97-109. doi:10.1111/j.1471-6402.2009.01545.x.
- Polderman, T. J. C., Benyamin, B., de Leeuw, C. A., Sullivan, P. F., van Bochoven, A., Visscher, P. M. & Posthuma, D. (2015). Meta-analysis of the heritability of human traits based on fifty years of twin studies. *Nature Genetics, 47*, 702-709. doi:10.1038/ng.3285.
- Ricciardelli, L. A., Williams, R. J. & Kiernan, M. J. (1998). Relation of drinking and eating to masculinity and femininity. *The Journal of Social Psychology, 138*, 744-752. doi:10.1080/00224549809603259.
- Runge, T. E., Frey, D., Gollwitzer, P. M., Helmreich, R. L. & Spence, J. T. (1981). Masculine (instrumental) and feminine (expressive) traits. A comparison between students in the United States and West Germany. *Journal of Cross-Cultural Psychology, 12*, 142-162. doi:10.1177/0022022181122002.
- Sánchez-Autet, M., Garriga, M., Zamora, F. J., González, I., Usall, J., Tolosa, L., ... Arranz, B. (2018). Screening of alcohol use disorders in psychiatric outpatients: influence of gender, age, and psychiatric diagnosis. *Adicciones, 30*, 251-263. doi:10.20882/adicciones.885.
- Sánchez-López, M. P. (2013). La salud desde la perspectiva de género: el estado de la cuestión. En M. P. Sánchez-López (Eds.), *La salud de las mujeres* (pp.17-40). Madrid, España: Síntesis.
- Sánchez-López, M. P., Cuéllar-Flores, I. & Dresch, V. (2012). The impact of gender roles on health. *Women & Health, 52*, 182-196. doi:10.1080/03630242.2011.652352.
- Sánchez-López, M. P. & Limiñana-Gras, R. M. (2017). Health from a gender perspective. En M. P. Sánchez-López & R. M. Limiñana-Gras (Eds.), *The Psychology of Gender and Health* (pp.1-52). London: Elsevier. doi:10.1016/b978-0-12-803864-2.00001-8.
- Sánchez-López, M. P., Rivas-Díez, R. & Cuéllar-Flores, I. (2013). Masculinity and Femininity as predictors of tobacco and alcohol consumption in Spanish university students. *Health and Addictions, 13*, 15-22. doi:10.21134/haaj.v13i1.189.
- Sánchez-López, M. P., Saavedra, A. I., Dresch, V. & Limiñana-Gras, R. M. (2014). Conformity to Traditional Gender Norms in a Feminized Occupation: The Influence on Health Behaviors. *Health, 6*, 2775-2789. doi:10.4236/health.2014.620317.
- Simonen, J., Törrönen, J. & Tigerstedt, C. (2013). Femininities of drinking among Finnish and Swedish women of different ages. *Addiction: Research & Theory, 22*, 98-108. doi:10.3109/16066359.2013.779676.
- Spence, J. T. & Helmreich, R. L. (1978). *Masculinity and femininity: their psychological dimensions, correlates, and antecedents*. Austin, TX: University of Texas Press.
- Thompson, E. H. & Pleck, J. H. (1986). The structure of Male Role Norms. *American Behavioral Scientist, 29*, 531-543. doi:10.1177/000276486029005003.
- Törrönen, J., Rolando, S. & Beccaria, F. (2017). Masculinities and femininities of drinking in Finland, Italy and Sweden: Doing, modifying and unlinking gender in relation to different drinking places. *Geoforum, 82*, 131-140. doi:10.1016/j.geoforum.2017.04.005.
- Uy, P. J., Massoth, N. A. & Gottdiener, W. H. (2014). Rethinking male drinking: Traditional masculine ideologies, gender-role conflict, and drinking motives. *Psychology of Men & Masculinity, 15*, 121-128. doi: 10.1037/a0032239.
- Van Gundy, K., Schieman, S., Kelley, M. S. & Rebellon, C. J. (2005). Gender role orientations and alcohol use among Moscow and Toronto adults. *Social Science & Medicine, 61*, 2317-2330. doi:10.1016/j.socscimed.2005.07.033.
- Vaughan, E. L., Wong, Y. J. & Middendorf, K. G. (2014). Gender roles and binge drinking among Latino emerging adults: a latent class regression analysis. *Psychology of Addictive Behaviors, 28*, 719-726. doi:10.1037/a0037406.
- Verbrugge, L. M. (1982). Sex differentials in health. *Public Health Reports, 97*, 417-437.
- Verbrugge, L. M. (1989). The twain meet: empirical explanations of sex differences in health and mortality. *Journal of Health and Social Behavior, 30*, 282-304. doi:10.2307/2136961.
- Verhulst, B., Neale, M. C. & Kendler, K. S. (2014). The heritability of alcohol use disorders: a meta-analysis of twin and adoption studies. *Psychological Medicine, 45*, 1061-1072. doi:10.1017/s0033291714002165.
- White, H. R. & Labouvie, E. W. (1989). Rutgers Alcohol Problem Index. PsycTESTS Dataset. doi:10.1037/t00517-000.
- Williams, R. J. & Ricciardelli, L. A. (1999). Gender congruence in confirmatory and compensatory drinking. *The Journal of Psychology, 133*, 323-331. doi:10.1080/00223989909599745.
- Williams, R. J. & Ricciardelli, L. A. (2001). Sex-role traits and the comorbidity of symptoms of disordered eating and problem drinking. *Eating Behaviors, 2*, 67-77. doi:10.1016/s1471-0153(00)00024-6.

