Understanding the meaning of conformity to feminine norms in lifestyle habits and health: A cluster analysis.

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Abstract

Background: Gender roles impact different spheres of life and lead women to behavioral patterns and lifestyle habits associated with femininity, generating important differences between men and women in health. The present study analyzed relationships between conformity to the feminine norms and different lifestyle indicators: educational level, marital status, alcohol consumption, tobacco consumption, sleeping hours, social support and physical activity. Additionally, cluster analysis was developed in order to identify different patterns of gender role conformity.

Methods: The sample was made up of 347 women age 18-70 from Spain. Data collection was conducted during 2014.

Results: Multiple logistic regression analyses produced odds ratios showing that women with lower feminine role conformity were more likely to use tobacco and alcohol, but less likely to share their lives with someone. Cluster analysis found four different profiles of gender role conformity, related to different patterns of alcohol consumption and marital status.

Conclusions: Conformity to feminine norms was associated with basic affective conditions such as sharing life with others and with alcohol and tobacco consumption, but not with physical activity, social support and sleep duration. While tobacco and alcohol use has important health implications, public health systems should pay attention to gender related variables in order to design and implement specific prevention programs.

Background

The existence of gender roles and their effects on women’s lives has been widely investigated (1). During recent decades, biopsychological approaches have emphasized the importance of socio-cultural factors as predictors of health (2). Gender roles are
associated with patterns of behavior which, in the long term, could contribute to differences in lifestyles (3).

Gender roles and stereotypes are learned early in life; exposure to traditional gender roles in society reinforces implicit gender beliefs such as stereotypic traits, abilities, and roles (4). Conformity to feminine roles has been linked to characteristics such as care of others, thinness, sexual fidelity, modesty, domesticity, passivity, etc. (5, 6), with significant effects on women's self-concept and career aspirations (4, 7). Thus, conformity to feminine roles leads women to behavioral patterns and lifestyle habits associated with femininity, generating important differences between men and women in employment, education, social structure and health (8).

In Spain, as in other countries in Europe, gender roles still have significant effects on women's daily lives. Economic and social duties and priorities marked by gender roles could somehow generate differences in the way women use their time, the activities they engage in, and the lifestyle habits they adopt regarding health care (1).

Different needs contribute to different priorities in life, and the needs of women are strongly influenced by social context (2). While the traditional feminine role has been associated with the private sphere and its values and functions, such as the care of children and family, the traditional masculine role is associated with the public sphere identified with work, industry, commerce, politics and production (9). Therefore, it is reasonable to think that women spend their time and their resources on things and activities unlike those of men, generating gender differences between men and women in lifestyles and health (10).

Gender differences are also observed in health. In Spain, women have reported poorer self-assessed general health, as well as stronger prevalence of psychological disorders compared to men (INE 2018). Contrary to these results, data show that life expectancy in
men is shorter than in women (INE 2018). Possible explanations may be related to the embracing of health-risk behaviors such as substance consumption, or lower health care awareness among men (1). For example, it has been found that alcohol and tobacco consumption is higher among men (11), and that these substances are traditionally associated with masculinity (12).

Gender may also influence such health-related variables as sleeping patterns and use of leisure time. Self-reported sleep duration and biomedical studies have shown that women sleep more than men, which has been linked to gender differences in time use, and to the amount of paid and unpaid work they do (13–15). Engendered responses related to work and family roles are well known as is their incompatibility with other leisure activities (16, 17). Similarly, gender differences in physical activity have also been explored, finding men more physically active than women (18–21). Some authors have highlighted the role of family responsibilities and higher perceived barriers to participating in physical activities, as possible explanations (22).

Since biological sex does not offer reasonable explanations to justify gender differences in lifestyles, the objective of this study is to analyze the associations between conformity to feminine norms and different lifestyle indicators among Spanish women.

Methods

Participants

The study sample was composed of 347 women. All participants were currently living in Spain; most of them were Spanish women (93.7%), age 18–70 (mean = 42.2 years). Data collection was conducted during 2014 with the collaboration of several organizations from various sectors. These organizations offered their employees the opportunity to participate in this study.

The eligibility criterion was to be employed by or a member of one of the cooperating
organizations. All women received written questionnaires to answer and return to the researcher, in which they were requested to affirm that they met inclusion criteria (which was also confirmed by study staff). The average time needed to answer the questionnaire was 45–60 minutes, after prior clarification of instructions. The participants were supported at all times by a person trained to answer their questions whenever necessary, especially regarding older women.

**Measurement Instruments**

**CONFORMITY TO GENDER ROLE INDICATORS**

Conformity to the female gender role was assessed by The Conformity to Feminine Norms Inventory (CFNI), an instrument designed to measure the level of compliance of women to female standards (Mahalik et al. 2005). This instrument measures the female gender role understood as the degree of women’s adherence to the rules and social standards of femininity through behaviors, feelings and thoughts (Mahalik et al. 2005). For the present study the Spanish version of the CFNI was employed, respecting the original structure, with adequate reliability and Cronbach’s Alpha for the total scale of 0.87 (Sánchez-López et al. 2009). The CFNI is composed of eight sub-scales whose reliability in the present study ranged between 0.64 and 0.86: Nice in Relationships (reliability 0.73), Care of children (0.86), Thinness (0.80), Sexual Fidelity (0.80), Modesty (0.65), Romantic Relationships (0.64), Domestic (0.75) and Invest in Appearance (0.68). The total score was dichotomized into two categories, “medium-high” and “medium-low”. The median split approach is considered an acceptable classification method in gender studies (Vafaei et al. 2016, Ahmed et al. 2016).

**SOCIAL SUPPORT MEASURES**

Social support was measured by The Duke-UNC Functional Social Support Questionnaire, an instrument designed to assess an individual’s perception of the amount and type of
personal social support. The Spanish version is composed of 11 items and includes quantitative and functional measures regarding affective support (the possibility of having people to communicate with) and confidant support (expression of love, affection and empathy). The Spanish questionnaire was shown to be valid and reliable with an internal consistency for the total scale of 0.90 (Cronbach’s Alpha) and reliability coefficients between 0.80 and 0.92 (23, 24).

LIFESTYLE INDICATORS

Lifestyle indicators comprise variables related to sociodemographic and health characteristics: marital status, alcohol and tobacco consumption, daily sleeping hours and physical activity. All these variables were obtained through single questions, asking respondents to place themselves within a specific category, except for age and daily sleeping hours where continuous amounts were asked for. Marital status was categorized as alone (divorced, widowed and single) and not alone (married or married de facto). Alcohol consumption was dichotomized as yes (those who had drunk alcohol in the last 2 weeks) or no (those who had not drunk alcohol in the last 2 weeks). Tobacco consumption was dichotomized as yes (daily consumption) or no (occasional or no consumption).

CO-VARIATES

Age and level of education were included as co-variates to control their potential confounding effect on relations between gender conformity and lifestyle indicators. Age was used as a continuous variable. Level of education was categorized as basic (primary and secondary school) and medium-high (technical and university studies).

Ethical procedures

The protocol for the present study obtained approval from the Ethics Committee of the Faculty of Psychology of the XXXXXXXXXX. All participants were informed of the purpose and intent of the study and provided written consent. Similarly, anonymity of each of the
participants was ensured.

Data Analyses

The characteristics of the sample are described as frequencies (percentages) or mean +/- SD. Statistical differences were identified by the Chi squared test (categorical variables) and ANOVA test (continuous variables). Statistical significance was set at p>0.05 (two-tailed).

Binary logistic regression models were constructed to analyze the relationships between gender role conformity and civil status, alcohol consumption, tobacco consumption and physical activity, controlling for confounding variables (age and educational level). In addition, linear regression models were built to assess the relationship between gender role conformity and sleep duration and social support.

Three regression models were built with medium-high conformity women as a reference group. Model 0 was crude, model 1 was adjusted for age, and model 2 was additionally adjusted for level of education. The results of the models were presented as adjusted odds ratios (OR) with their 95% confidence intervals (CI).

In addition, cluster analysis was carried out to identify patterns of gender role conformity based on information provided by the eight sub-scales of the CFNI. This procedure attempts to identify relatively homogeneous groups of cases based on selected characteristics. Hierarchical clustering using Ward’s method was applied using standardized sub-scale scores and Euclidean distances. Dendrograms were created during the clustering process to help determine how many clusters should be included in the final solution. Cluster consistency was assessed using ANOVA analysis (Table 3).

Finally, patterns of gender role conformity (identified by the cluster analysis) were related to those lifestyle variables previously found to be linked to gender role conformity (marital status, tobacco and alcohol use). The Chi square test was used for this analysis.
Results

Descriptive Analysis

Differences between women with medium-low and medium-high conformity to feminine norms are presented in Table 1. Differences between both groups in marital status were significant (p = 0.003): the percentage of divorced, widowed and single women was higher in the medium-low conformity group than in the medium-high conformity group. Accordingly, the percentage of married and married de facto women is higher in the medium-high conformity group than in the medium-low conformity group. Similarly, the chi-square test indicated significant differences (p = 0.005) in alcohol consumption between both groups with a higher frequency of alcohol consumption among medium-low conformity women than among medium-high conformity women. The percentage of daily smoking women was also significantly (p = 0.041) higher among medium-low conformity women than among medium-high conformity women.

Multivariate Analysis

The relationship between conformity to feminine norms and lifestyle indicators are presented in Table 2. Medium-high conformity women were more likely to live with someone (married and married de facto women) than medium-low conformity women (OR = 1.89; 95% CI = 1.23–2.89; p = 0.003). Results were similar in Model 1 after adjusting for age (OR = 1.80; 95% CI = 1.13–2.85; p = 0.012), and Model 2 after adjusting for age and educational level (OR = 1.70; 95% CI = 1.06–2.71; p = 0.025).

Medium-high conformity women were less likely to drink alcohol than medium-low conformity women (Model 0) (OR = 1.84; 95% CI = 1.20–2.82; p = 0.005). Results were similar in Model 1 after adjusting for age (OR = 1.77; 95% CI = 1.14–2.72; p = 0.010) and Model 2, after adjusting for age and educational level (OR = 1.65; 95% CI = 1.06–2.56; p = 0.026).
Medium-low conformity women showed a higher likelihood of consuming tobacco than medium-high conformity women (Model 0) (OR = 1.75; 95% CI = 1.02–3.00; p = 0.042). However, differences were no longer significant after controlling for age in Model 1 (OR = 1.64; 95% CI = 0.95–2.84; p = 0.076) and for age and educational level in Model 2 (OR = 1.70; 95% CI = 0.98–2.96; p = 0.059).

There were no significant differences regarding conformity to feminine roles and physical activity (table 2), sleep duration and social support in any of the three models constructed (data not shown in table: $\beta = -0.24, 0.15(SE)$, $p = 0.103$ for Model 1; $\beta = -0.27, 0.14(SE)$, $p = 0.068$ for Model 2; $\beta = -0.24, 0.15(SE)$, $p = 0.103$ for Model 3).

**Cluster Analysis and Lifestyle Indicators**

Cluster analysis suggested four different patterns of gender role conformity. A four cluster solution seemed the most adequate and feasible grouping combination, highlighting differences between groups in a meaningful way. The scores of each group (mean scores and standard deviations) are presented in Table 3. The associations between conformity to gender roles and lifestyle indicators are presented in table 4.

Group 1 (the moderate group) is formed by 99 women and characterized by a medium gender role conformity in most of the CFNI sub-scales, except for a higher than average score in involvement with children and a much lower than average score in nice in relationships. This group showed greater average patterns of alcohol use, and the proportion of married and married de facto women was slightly higher than the average.

Group 2, (the conformist group) the most numerous with 126 women, and it is characterized by a high gender role conformity in most of the CFNI sub-scales, except for those sub-scales of thinness, romantic in relationships and investment in appearance in which the scores were medium. This group showed lower rates of alcohol use and higher rates of married and de facto married women compared to other groups.
Group 3 (the contrast group) with 85 women is the most divided group in terms of conformity. Scores in sub-scales nice in relationships, thinness, romantic, domestic and investment in appearance were noticeably higher than average, and scores in sub-scales involvement in children, sexual fidelity and modesty were, significantly, lower than average; domestic seemed to be the only medium score. In this group, alcohol consumption was much higher than average, as was the proportion of divorced, single or widowed women.

Lastly, group 4 (the non-conformist group), the least numerous with just 37 women, is defined by low gender conformity. All CFNI sub-scales showed low scores. This group shows a higher proportion of divorced, single or widowed women but average rates of alcohol use.

Discussion

As expected, our results have shown that gender roles are connected with some lifestyle behaviors, but not with others. Conformity to feminine norms was associated with basic affective conditions such as sharing life with others (e.g. marital status) and with alcohol and tobacco consumption, but not with physical activity, social support and sleep duration.

Women with lower gender role conformity are significantly more likely to live alone, which in this research was understood as being divorced, widowed or single. Some authors have pointed out that marriage contributes to gender inequality in terms of power and authority in both the family and society (25), stressing the link between marriage and male domination (26). Family roles and childcare have been identified as potential barriers to career success (27), while also affecting women’s economic empowerment (7) and therefore influencing gender inequality. The number of single-parent families has increased over recent decades in Spain (EPA, 2018), which in other countries has been
associated with an increased need to be involved in remunerated work to support their families and themselves (27). These circumstances generate a new social context for women in which life demands exceed those traditionally assigned to women (2, 28–30). In the XX century and during many decades, marriage has represented the only socially accepted way to include women in the Spanish society, denning them any type of individual independence and relegate them to subordinate positions in society (31, 32). However, Spanish women’s roles within households is progressively changing, incorporating different family models (mono-parental and same-sex families) in which less conformist women feel more identified (33).

In addition, our results have shown that women with lower gender role conformity presented a higher likelihood of using tobacco and drinking alcohol. Tobacco and alcohol consumption have been traditionally labeled as masculine habits (1). Males report greater use of both substances than females (34), and this behavior is hypothesized as an explanation of important health-risk behaviors and thus differences in longevity between men and women (35). The use of tobacco and alcohol has been traditionally linked to public and social life, and usually more restricted to women (36). Although recent tendencies may show changes, this study’s results have found that alcohol and tobacco use are still connected to gender roles, at least in Spain, where similar studies found that several feminine norms, such as romantic relationships and sexual fidelity were inversely correlated with alcohol and cigarette consumption, and investment in appearance was inversely related to tobacco consumption (1). In Spain, alcohol and tobacco use not only has been traditionally reserved for men, but also linked to parties and social events where women were usually excluded. For that reason, tobacco and alcohol use has become a mean of making equal gender behaviors, representing women’s conflicts between liberal and traditional social norms (37, 38). However, results were no longer significant in the
case of tobacco consumption after adjusting for age and educational level. These results highlight the importance of age and educational level as important moderators between gender roles and tobacco consumption, as has been previously found in other studies linking gender roles and health, suggesting interactions between different social variables.

No significant associations of daily sleeping hours, social support and physical activity with gender role conformity were found. Although other studies have found differences in sleep durations and sleeping habits between men and women, with a higher amount of sleeping hours among females (13–15), these results are not observed in our study. Similarly, our findings are not aligned with the existing literature in the case of physical activity, which was expected to be related to gender role conformity. Differences in leisure activities and use of time have been associated with gender roles (16, 17), and work and family roles have been perceived as possible barriers between women and outdoor physical activities (18, 19, 21, 22). Nevertheless, self-care and body image are also associated with certain gender roles such as investment in appearance (5) which could somehow contribute to encouraging women to engage in sports and physical activities. These results might help to dispel some myths among Spanish women in a social context in which even more conformist women need to redefine some lifestyle behaviors to get adapted to new social demands.

Another relevant aspect to be discussed is the lack of effect of age and educational level on the relationship between conformity to feminine norms and lifestyle behaviors, with the exception of tobacco consumption. Prior studies and hypotheses have claimed that educational level may somehow contribute to moderating or attenuating gender roles (39); women with a higher educational level have been found to be less conditioned by gender roles, placing them in more tolerant and egalitarian positions (7). However, these results
were not found in this study. Possible explanations to justify these discrepancies could be that the relation between both variables is not easily evident or visible, but more sophisticated.

Finally, no significant relations were found between feminine role conformity and any of the social support indicators (affective support, confidential support and total score). Previous studies have shown contradictory data regarding support, but most existing literature points out that high feminine role conformity would be positively related to social support in terms of either seeking or receiving social support (40–42). However, our results do not allow us to support this hypothesis.

Patterns of Femininity and Lifestyles

Cluster analysis helped us to describe and understand different patterns of femininity, which reflect how women adapt their lifestyles to social standards in order to fulfill both social and individual needs.

Group 1, the moderate group representing almost a third of the sample, shows a significant number of women at medium levels of gender role conformity who still seem to focus their attention on childcare. This phenomenon could be linked to the fact that care of children is still strongly delegated to women in Spain (43, 44), even in less traditional households in which both members contribute actively to the family economy (45–49). Despite gender roles within households are changing in Spain, with more alternative family models appearing, care of children might be one of the most change-resistant aspects among gender roles. Results suggest that even among moderately conformist women, care of children is still a considerable life choice.

Group 2, the conformist group, seems to represent a considerable number of Spanish women that still feel identified with the traditional standards of femininity, but are somewhat more relaxed in terms of external appearance. Results coincide with other
Descriptive findings in which a high proportion of medium-high conformity has been observed (50). In Spain, as in other southern European countries, gender roles still have significant representation in society (47, 51), with little evolution in gender stereotypes over recent decades (52). This finding appears to be reflected in certain patterns of substance use (alcohol, according to our data) and the way they share their lives with others focused on traditional household structure, reinforcing the previously explained link between marriage and alcohol use with gender role conformity.

Group 3, the contrast group, represents almost a fourth of the sample and it is defined by contrast in the CFNI subscales: high gender role conformity in most of the subscales except in involvement in children, sexual fidelity and modesty, and a medium score in domesticity. The group presents an external image adapted to femininity standards, but is more liberal in terms of sexual freedom, less focused on children and not much interested in showing their abilities.

Possible explanations for these findings could be related with the growing sector of Spanish women engaged in highly demanding professions, which force them to choose between involvement in family and career aspirations (53–56), thus developing more egalitarian gender roles and work-related attitudes and behaviors. This fact was observed in their patterns of alcohol use, more connected with the highly demanding professional and public life and less conservative households in which single or divorced women are more common (1, 27, 34, 36). Nevertheless, social pressure in terms of physical appearance and kindness toward others is still a gender-related variable even among the most demanding and competitive job positions, at least in the Spanish context (57, 58).

Finally, group 4, the non-conformist group, represents a small percentage of women who dismiss the social standards of feminine role conformity. These results coincide with other authors’ findings, that only a low proportion of women show low gender role conformity.
patterns (5, 50). Unexpectedly, a higher alcohol use was not reported among this group of women. Nevertheless, a higher presence of divorced, single or widowed women was found, concurring with the idea of marriage as reinforcement of gender inequalities in social structures (25, 59, 60).

Conclusions

In conclusion, it seems reasonable to consider that feminine role conformity has an influence on some lifestyle habits. According to our results, gender role conformity may influence the way women decide to share their life with others, and also their substance consumption behavioral patterns with respect to alcohol and tobacco. The reasons why people establish priorities in life are extremely complex, but in any case, gender roles should be included as one more variable in order to understand such complexity. While tobacco and alcohol use has important health implications, public health systems should pay attention to gender related variables in order to design and implement specific prevention programs. Moreover, equally important is the fact that gender roles evolution may redefine our society in terms of social structures with significant implications in household’s dynamics, distribution and needs.

Limitations And Future Research

This study was not without its limitations. First, the scope of the sample should be improved in future research because our relatively modest sample size may have provided inadequate statistical power to detect slight variations as statistically significant. Second, our sample was not representative of the population of Spanish women, which reduces the generalizability of our results. Finally, the cross-sectional design of our study prevents determination of the temporal relation of the variables and thus the detection of cause-effect relationships.
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Declarations

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AUTHORS CONTRIBUTION
The objective of the present study was to analyze relationships between feminine role conformity and different lifestyle habits connected with health. Despite other studies have pointed out a link between femininity and health in Spain, the present work offers a rich picture of feminine role conformity patterns, and how resulting groups of women are exposed to different health risks. Findings could help health practitioners to understand some health risk-taking behaviors among Spanish women.

**DISCLOSURE STATEMENT - CONFLICT OF INTEREST AND FUNDING**

The authors report no conflicts of interest.

**ETHICS AND CONSENT**

The protocol for the present study obtained approval from the Ethics Committee of the Faculty of Psychology of the *Complutense University of Madrid*. All participants were informed of the purpose and intent of the study and provided written consent. Similarly, anonymity of each of the participants was ensured.

**FUNDING INFORMATION**

Not applicable.

**CONSENT FOR PUBLICATION**

Not applicable.

**AVAILABILITY OF DATA**

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.