Sexism and alexithymia: Correlations and differences as a function of gender, age, and educational level

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Abstract: The goals of the study were to analyze differences as a function of gender, age, and educational level in sexism and alexithymia in a nonclinical and in a clinical sample, and to explore the relation between these constructs. A descriptive and correlational cross-sectional methodology was used. The Ambivalent Sexism Inventory (Glick & Fiske, 1996) and the Toronto Alexithymia Scale (Parker et al. 1993) were administered. The sample comprised 989 participants from the Basque Country, aged between 18 and 65 years. The results revealed: 1) Significantly higher scores in the males in sexism (hostile, benevolent, and ambivalent) and in alexithymia (difficulties to express emotions and external-oriented thinking) in both samples; in the total alexithymia score, the males had significantly higher scores only in the nonclinical sample; 2) As of 55 years of age, a significant increase in benevolent and ambivalent sexism, and in difficulties to identify emotions, external-oriented thinking, and in the total alexithymia score were observed (only in the nonclinical sample); however, no changes with age were observed in hostile sexism and in difficulties to express emotions; 3) A decrease in sexism and alexithymia as the educational level increased; and 4) Significant positive correlations between sexism and alexithymia.

Key words: Sexism; alexithymia; personality; psychopathology; gender.

Introduction

Sexism: Differences as a function of gender, age, and educational level

Acceptance of gender refers to the series of practices, beliefs, representations, and social prescriptions that emerge among the members of a human group as a function of the group's interpretation and appraisal of the anatomical differences between men and women. This differentiation is expressed not only in the division of activities carried out by each sex, but even in the identities and interactions of men and women. In general, the research conducted on the consideration of this differential perception has clarified that, beyond a biological essence, sex membership is a process of social construction. Thus, each culture develops a set of normative guidelines and meanings that delimit the actions of men and women (Rocha-Sánchez & Díaz-Loving, 2005).

Sexism is defined as a discriminatory attitude towards people because of their biological sex, as a function of which, diverse characteristics and behaviors are assumed. From a psychosocial analysis of gender, sexism is considered one of the main beliefs that maintains inequality of the sexes, and recent studies have also revealed the direct relations between sexism and violence towards women, both physical and verbal.

A significant contribution to the understanding of sexism was carried out by Glick and Fiske (1996, 1999, 2001), who define ambivalent sexism (AS) as the result of the combination of two elements with antagonist affective loads: 1) Hostile Sexism (HS) shares its negative charge with more traditional sexism, it considers women to be inferior to men and adopts a stereotyped and negative view of women; and 2) Benevolent Sexism (BS), of a positive affective tone, which transmits the view of women as weak creatures who must be protected and, at the same time, placed on a pedestal, where their "natural" roles of wife and mother are adored and from which they should not stray. HS and BS configure AS and are the targets of exploration and analysis in this study.

In contemporary society, forms of hostile sexism are rejected, but forms of benevolent sexism are still accepted. In view of these more subtle and covert sexist attitudes that conform modern sexism and that conceptualization of ambivalent sexism (in which hostile and benevolent attitudes are combined), we must become aware of the pernicious effect of this new sexism on the consummation of the equality of the sexes. Benevolent sexism, which conceals its true sexist essence under an air of positive affect, no doubt causes more harm to the goals of equality of the sexes, precisely because its sexist core is blurred by this tone of positive feeling. Remember that BS is still sexist, because it segregates women to “a different” place, and restricts them to certain roles that are included in the femininity stereotypes (nurtur-
that are linked to their reproductive and maternal capacity.

The review of the investigations that have analyzed differences as a function of gender, educational level, and age in HS and BS yields some contradictory results. Some studies have reported that men score significantly higher in HS and BS (Feather, 2004; Feather & Boeckmann, 2007; Forbes, Adams-Curtis & White, 2004; Forbes, Collinsworth, Jobe, Braun & Wise, 2007; Fowers & Fowers, 2010; Garaigordobil & Aliri, 2011a, 2011b; Glick & Fiske, 1996; Glick, Diebold, Bailey-Werner & Zhu, 1997; Lameiras & Rodríguez, 2003; Lameiras, Rodríguez, Calado, Foltz & Carrera, 2007; Lee, Pratto & Li, 2007; Liang, 2007; Masser & Abrams, 1999; Pozo, Martos & Alonso, 2010; Russel & Trigg, 2004; Travaglia, Overall & Sibley, 2009; Viki, Abrams & Hutchinson, 2003; Wiener & Hurt, 2000; Wiener, Hurt, Russell, Mannen & Gasper, 1997). However, other investigations found no gender differences in BS (Chen, Fiske & Lee, 2009; Eastwick et al. 2006; Expósito, Moya & Glick, 1998; Garaigordobil & Aliri, 2012; Glick, Sakalli-Ugur, Ferreira & Aguiar de Souza, 2002; Lameiras & Rodríguez, 2002; Lameiras, Rodríguez, Calado, Foltz & González, 2006; Pereira, Gouveia, da Silva & Marques, 2005; Sakalli-Ugur, 2010; Sakalli-Ugur, Sila Yalcin & Glick, 2007; Tasdemir & Sakalli-Ugur, 2010; Vaamonde, 2010), or else they found higher scores in men but only up to the age of 42 years (Lameiras, Rodríguez & González, 2004). Similarly, the study of Sánchez-Herrero, Sánchez-López, and Dresch (2009), which analyzes the behavior of men with regard to house work, concludes that the role of men and women has not changed substantially compared to former generations.

Although few studies have analyzed the evolution of sexism, they have generally found an increase of sexism with age (Lameiras et al. 2004; Moya, Expósito, Rodríguez-Bailón, Glick & Páez, 2002). Although scarce, the studies that have investigated the relationships between sexism and educational level have usually found inverse relations between these variables (Glick, Lameiras, & Castro, 2002; Lameiras & Rodríguez, 2003; Pereira et al. 2005).

Alexithymia: Differences as a function of gender, age, and educational level

Alexithymia is a personality dimension that refers to the difficulty to process emotions cognitively (Otero, 1999; Taylor, Bagby & Parker, 1991). Literally, alexithymia means “without any words for emotions”. Currently, there is a debate about whether alexithymia should be conceptualized as a personality trait, like a construct or a continuous variable that all people may share to some degree, or a disorder that one either has or has not. From this approach, alexithymia is defined as a clinical syndrome comprising characteristic variables such as: 1) a difficulty to verbalize emotions, recognize and use them like internal signals; 2) a difficulty to locate the one’s own bodily sensations; 3) a tendency to use action as a coping strategy in conflictive situations; 4) concrete thinking, lacking abstract symbols; and 5) rigidity in preverbal communication with scarce mime and few body movements (García-Esteve, Nuñez & Valdés, 1988).

Most of the studies carried out with adults, using the TAS-20 (Toronto Scale Alexithymia, Parker, Bagby, Taylor, Ender & Schmitz, 1993), report a tendency in men to score higher in alexithymia, at least in the total score (Carpenter & Addis, 2000; Heshmati, Jafari, Hoseinifar & Ahmadi, 2010; Honkalampi, Hintikka, Tanskelen, Lehtonen & Viinamaki, 2000; Kokkonen et al. 2001; Lane, Sechrest & Riedel, 1998; Levant, Hall, Williams & Hasan, 2009; Mattila, Salminen, Nummy & Joukamaa, 2006; Moral de la Rubia & Retamales, 2000; Parker, Taylor & Bagby, 2003; Salminen, Saarijärvi, Åärelä, Toikka & Kauhanen, 1999). Corroborating these results, Moral de la Rubia (2005) concludes that men present a significantly more externally focused thinking style and they tend (albeit nonsignificantly) to have less difficulties to identify feelings, but more difficulty to express them than women. Nevertheless, some studies conducted with adult population have found no gender differences, for example, the study carried out with participants in the midst of a divorce or separation (Rodríguez, de Benito & Rodríguez, 2003). Le vant et al. (2006) reviewed 45 published studies that examined gender differences in alexithymia and found that gender differences were nonsignificant in most of the studies with clinical samples but, in most of the investigations with non-clinical samples, men scored higher in alexithymia than women.

With regard to age, some studies have found no significant relationships between alexithymia and age (Bagby, Parker & Taylor, 1994; Bressi et al. 1996; Gunzelmann, Kupfer & Brähler, 2002; Parker, Shaugnessy, Wood, Majeski & Eastbrook, 2005; Parker, Taylor & Bagby, 1989), whereas others found evidence that older people had a tendency to score higher (Honkalampi et al., 2000; Joukamaa, Saarijärvi, Muuraisniemi & Salokangas, 1996; Lane et al. 1998; Lunazzi, 2000; Mattila et al. 2006; Páez & Velasco, 1993; Parker et al. 2003; Salminen et al. 1999). In this sense, the study carried out by Henry et al. (2006) showed that older adults had higher levels of externally focused thinking. In a study with a sample of 2718 Japanese people between 14 and 84 years, the results showed that the levels of alexithymia were high in adolescence and decreased with age until the age of 30 years, at which time, the level remained more constant (Moriguchi et al. 2007). In another investigation (Moral de la Rubia & Retamales, 2000) they found a lower level of alexithymia at intermediate ages, and a higher level in adolescents and old people.

However, the results of the study of Moral de la Rubia and Retamales (2000) confirmed that the higher the educational level, the lower the level of alexithymia. Likewise, various investigations have shown that alexithymia is negatively related to the socio-economic level and the educational level (Cerezo, García-Moja, Gándara & Hernández, 1988; Honkalampi et al. 2000; Joukamaa et al., 1996; Kokkonen et al., 2001; Lane et al. 1998; Lunazzi, 2000; Mattila et al. 2006;
Parker et al. 2003; Salminen et al. 1999). However, some works have obtained inconsistent results (Parker et al. 1989, 2005; Pasini, Delle-Chiaie, Seripa & Ciani, 1992; Waller & Scheidt, 2004).

**Relations between sexism and alexithymia**

Some studies have related alexithymia to the socialization processes of the gender role. Levant (1992) proposed that the traditional masculine socialization somehow supported alexithymia, because such socialization has conventionally been very restrictive when identifying or expressing emotions. This investigator observed that many men could only find the words to describe their emotional states after much practice. He theorized that, when these men were children, they had been discouraged from expressing and talking about their emotions by their parents, their peers, their teachers... and some of them had even been punished for this. Consequently, they never developed a vocabulary for many emotions, or an awareness of them. Likewise, the results of the study of Fischer and Good (1997) show that, in general, alexithymia is related to the traditional masculine gender role, and they propose that differences in the traditionality of the gender role could explain the fact that some studies found significant differences in alexithymia between men and women and others did not. These authors found that men who were educated in traditional sexist models are more alexithymic than women.

**Goals and hypotheses of the study**

This study is based on the theory of ambivalent sexism (Glick & Fiske, 1996, 1999, 2001), and proposes two goals: 1) to analyze as a function of gender, age, and educational level differences in sexism (HS hostile, BS benevolent, AS ambivalent sexism), alexithymia (DIE- difficulty to identify emotions, DEE- difficulty to express emotions, EFT- externally focused thinking, TAS- Total alexithymia score) both in a clinical and a nonclinical sample; and 2) to explore the relations between sexism and alexithymia. Taking as reference the review of previous studies, in this investigation, four hypotheses are proposed: 1) Men will score significantly higher in sexism (HS, BS, AS) and in alexithymia (DIE, DEE, EFT, TAS); 2) Sexism and alexithymia will increase with age, significantly higher scores will be observed in older people (55-65 years); 3) Sexism and alexithymia will decrease as educational level increases; and 4) Significant positive correlations will be found between sexism and alexithymia.

**Method**

**Participants**

The sample comprised 989 participants from the Basque Country, 464 men (46.9%) and 525 women (53.1%), aged between 18 and 65 years, distributed in 5 age ranges: 18-24 years (21.2%), 25-34 years (20.9%), 35-44 (23.2%), 45-54 years (20.4%), and 55-65 years (14.3%). Pearson’s chi square confirmed that there were no differences in the distribution of the number of participants of each sex in the diverse age ranges $\chi^2 (1, 989) = 7.17, p > .05$. The participants have three levels of studies: Up to age 16 years (25.5%), up to 18 years (47.2%), and university studies (27.3%). Regarding occupation, the sample contains: students (20.8%), unskilled manual workers (32.7%), people who perform intellectual activities (27.8%), unemployed (6.1%), retirees (3.9%), and homemakers (8.9%).

The global sample includes a nonclinical sample ($n = 840, 84.9$), and a clinical sample ($n = 149, 15.1$), the latter with participants who have been receiving psychological treatment during the past year: 49 men (32.9%) and 100 women (67.1%). Pearson’s chi-square confirmed that the women requested psychological assistance significantly more frequently than did the men during the past year, $\chi^2 (1, 149) = 13.86, p < .001$. They had diverse motives for requesting psychological treatment: anxiety, depression, sleep disorders, stress, eating disorders, alcohol or drug addiction, etc.

To obtain the representative sample of the Basque Country, the latest population survey presented by the Basque Statistical Institute was consulted. The population of the Basque Country was 2,147,754, of which 139,6034 (65%) were aged between 18 and 65 years. With a .95 confidence level, a sample error of .035, for a population variance of .50, the representative sample comprises 784 people. To select the sample, a stratified probability-proportional sampling technique was used. In this case, the population was divided into layers or subgroups as a function of their more notable characteristics or parameters: residence province, sex, age, and educational level.

**Measures**

Before applying the assessment battery to the participants, a sociodemographic identification questionnaire was administered in which they were asked whether they had received psychological treatment during the past year, and for which psychopathological symptoms they had requested treatment. In order to measure the target variables of the study (sexism and alexithymia), we used two assessment instruments with psychometric guarantees of reliability and validity.

**Ambivalent Sexism Inventory** (ASI. Glick & Fiske, 1996, Spanish adaptation: Expósito et al. 1998). This instrument has 22 sentences, which are rated on a Likert scale ranging from 0 (strongly disagree) to 5 (strongly agree). The test measures ambivalent sexism (AS), which is made up of two dimensions: Hostile Sexism (HS, which basically coincides with the old sexism, implies a stereotype of women as being inferior) and Benevolent Sexism (BS, understood as a series of sexist attitudes towards women inasmuch as women are considered in a stereotyped fashion and limited to their roles as mothers and spouses). The psychometric studies of reliabil-
ity of the instrument have revealed a high internal consistency (Cronbach's alpha) for AS (α = .90) and its subscales (HS α = .89; BS α = .86). In the present study, the internal consistency coefficients obtained in the entire sample point in the same direction (AS α = .91; HS α = .90; BS α = .84). The validity studies of the ASI yielded significant correlations of AS with the Gender Ideology Scale (Martínez, 1991; Moya, Expósito, & Padilla, 2006), as well as with the Neosexism Scale (Tougas, Brown, Beaton, & Joly, 1995; Spanish adaptation: Moya & Expósito, 2001), with a higher magnitude for the HS subscale.

Toronto Alexithymia Scale (TAS-20) (Parker et al. 1993). The TAS-20 is made up of 20 items that assess the presence of alexithymia. Each item is rated on a 5-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). The scale has three factors: 1) Difficulty to identify emotions, as well as to differentiate bodily and physiological sensations that accompany emotional arousal (DIE); 2) Difficulty to express emotions, as well as to be able to describe to others the emotions one is feeling at that moment (DEE); and 3) Externally focused thinking style, associated with a limited capacity to fantasize (EFT). Psychometric studies conducted with the Spanish adaptation of the instrument (Martínez-Sánchez, 1996) show an acceptable internal consistency of the instrument, with the following Cronbach alpha coefficients: Factor 1 = .79; Factor 2 = .73; Factor 3 = .61. In the present study, the Cronbach internal consistency alpha coefficients were even higher than in the Spanish adaptation of the original scale both for the scale as a whole (.85) and for the DIE (.85) and DEE (.81) factors and somewhat lower but acceptable for the EFT (.72) factor. Test-retest reliability was also high (r = .71). Validity studies (Moral de la Rubia & Retamales, 2000) conducted factor analyses with principal components and Varimax rotation method and the results confirmed a three-factor structure of the scale, which accounted for 32.5% of the variance and was congruent with the three hypothesized factors. These authors verified the concurrent validity of the scale, finding significant negative correlations with four of the Big Five Questionnaire factors: Emotional Stability (-.50), Mental Openness (-.45), Extraversion (-.24), and Agreeableness (-.18).

Procedure

The study used a descriptive, correlational, and cross-sectional methodology. A team comprising 30 Psychology graduates, who were registered in doctorate and postgraduate studies, was trained to administer the assessment instruments. The administration was carried out in a single 30-minute assessment session. Each assessor collected an average of 30 protocols. The evaluators handed the questionnaires out to the participants, who completed them and clarified any doubts that arose with the evaluators. The study met the ethical values required in research with human beings, respecting the fundamental principles included in the Declaration of Helsinki in its updates and current regulations (informed consent and right to information, protection of personal data and guarantees of confidentiality, nondiscrimination, and freedom to leave the study at any stage) and was favorably assessed by the Ethical Committee of the Basque Country University (CUEID).

Data Analysis

After verifying that the basic assumptions (normality, homoscedasticity…) were met, in order to analyze the existence of differences as a function of gender, age, and educational level, we carried out multivariate and univariate analyses of variance (MANOVA, ANOVA) of the target variables of the study, sexism and alexithymia, both in the clinical and the nonclinical samples. In the analysis of the differences as a function of age and educational level, Bonferroni’s comparison of means was complementarily calculated. Subsequently, to analyze the relations between sexism and alexithymia, we carried out partial correlations, controlling for the effect of sex, age, and educational level, both in the clinical and nonclinical samples.

Results

Sexism and alexithymia: Differences as a function of gender

In order to analyze gender differences in sexism (HS, BS, AS), we conducted a MANOVA with the scores of the entire sample, the results of which revealed statistically significant gender differences, Wilks’ Lambda, λ = .956, F(3, 983) = 15.00, p < .001, although the magnitude of the effect was low, η² = .044, r = .20. The results of the MANOVA on alexithymia (DIE, DEE, EFT) also revealed significant gender differences, Wilks’ Lambda, λ = .975, F(3, 980) = 8.25, p < .001, with a low magnitude of the effect, η² = .025, r = .15. The means and standard deviations of each variable as well as the results of the ANOVAs are presented in Table 1.

The results (see Table 1) confirm significantly higher scores in the men in HS, BS, and AS, both in the clinical and nonclinical samples. In DIE, no gender differences were found in either sample. However, the significantly higher scores in men were confirmed in DEE and in EFT. In the TAS, the men scored significantly higher only in the nonclinical sample, as in the clinical sample, although the men’s scores were higher, the differences were nonsignificant.

Sexism and alexithymia: Differences as a function of age

In order to analyze changes in sexism (HS, BS, AS) as a function of age, a MANOVA was carried out, the results of which confirmed that there were no statistically significant differences among the diverse age ranges, Wilks’ Lambda, λ = .980, F(12, 2952) = 1.62, p > .05, with a very low magnitude of the effect η² = .007, r = .08. However, the results
of the MANOVA on alexithymia (DIE, DEE, EFT) did reveal the existence of statistically significant differences as a function of age, Wilks' Lambda, $\lambda = .935, F(6, 1968) = 11.56, p < .001$, although the magnitude of the effect was low, $\eta^2 = .033, r = .18$. Likewise, the results of the MANOVA on alexithymia (DIE, DEE, EFT) confirmed significant differences as a function of educational level, Wilks' Lambda, $\lambda = .954, F(6, 1962) = 7.82, p < .001$, although the magnitude of the effect was low, $\eta^2 = .023, r = .15$. The results of the univariate analyses are presented in Table 3.

Upon analyzing the entire sample and the nonclinical sample (Table 3), differences in HS, BS, and AS were found as a function of educational level. The Bonferroni comparison of means confirmed that as the educational level increased, the scores in the three types of sexism decreased. Nevertheless, the differences were only statistically significant in the nonclinical sample, because in the clinical sample, the same tendency was observed, but the differences were nonsignificant.

### Table 1. Means, standard deviations, and results of the analysis of variance of sexism and alexithymia in men and women.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Men</th>
<th>Women</th>
<th>$F$</th>
<th>$p$</th>
<th>$M$ (SD)</th>
<th>$M$ (SD)</th>
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</thead>
<tbody>
<tr>
<td>Total Sample ($N = 989$)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>HS</td>
<td>2.13 (1.16)</td>
<td>1.59 (1.02)</td>
<td>59.35</td>
<td>.000</td>
<td>47.58 (8.00)</td>
<td>47.78 (8.00)</td>
</tr>
<tr>
<td>BS</td>
<td>2.03 (1.00)</td>
<td>1.62 (1.00)</td>
<td>39.79</td>
<td>.000</td>
<td>26.86 (6.00)</td>
<td>26.86 (6.00)</td>
</tr>
<tr>
<td>AS</td>
<td>2.08 (0.94)</td>
<td>1.61 (0.89)</td>
<td>64.24</td>
<td>.000</td>
<td>20.10 (2.24)</td>
<td>20.10 (2.24)</td>
</tr>
<tr>
<td>DIE</td>
<td>14.85 (5.39)</td>
<td>15.18 (5.41)</td>
<td>.94</td>
<td>ns</td>
<td>10.72 (5.92)</td>
<td>10.72 (5.92)</td>
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<tr>
<td>DEE</td>
<td>13.60 (4.43)</td>
<td>12.64 (4.52)</td>
<td>11.19</td>
<td>.001</td>
<td>8.67 (2.47)</td>
<td>8.67 (2.47)</td>
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<tr>
<td>EFT</td>
<td>19.74 (4.86)</td>
<td>18.48 (4.61)</td>
<td>17.60</td>
<td>.000</td>
<td>11.13 (4.51)</td>
<td>11.13 (4.51)</td>
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<td>TAS</td>
<td>48.19 (11.18)</td>
<td>46.29 (10.87)</td>
<td>7.28</td>
<td>.007</td>
<td>26.86 (5.72)</td>
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<tr>
<td>Nonclinical sample ($n = 840$)</td>
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<tr>
<td>HS</td>
<td>2.10 (1.16)</td>
<td>1.59 (1.02)</td>
<td>45.78</td>
<td>.000</td>
<td>47.58 (8.00)</td>
<td>47.78 (8.00)</td>
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<tr>
<td>BS</td>
<td>2.02 (1.00)</td>
<td>1.66 (1.00)</td>
<td>26.86</td>
<td>.000</td>
<td>26.86 (6.00)</td>
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</tr>
<tr>
<td>AS</td>
<td>2.06 (0.95)</td>
<td>1.62 (0.89)</td>
<td>46.67</td>
<td>.000</td>
<td>20.10 (2.24)</td>
<td>20.10 (2.24)</td>
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<tr>
<td>DIE</td>
<td>14.70 (5.28)</td>
<td>14.83 (5.29)</td>
<td>.11</td>
<td>ns</td>
<td>10.72 (5.92)</td>
<td>10.72 (5.92)</td>
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<tr>
<td>DEE</td>
<td>13.37 (4.41)</td>
<td>12.74 (4.51)</td>
<td>7.19</td>
<td>.007</td>
<td>8.67 (2.47)</td>
<td>8.67 (2.47)</td>
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<tr>
<td>EFT</td>
<td>19.70 (4.79)</td>
<td>18.60 (4.65)</td>
<td>11.49</td>
<td>.001</td>
<td>11.13 (4.51)</td>
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<tr>
<td>TAS</td>
<td>47.97 (11.13)</td>
<td>46.16 (10.74)</td>
<td>5.72</td>
<td>.017</td>
<td>26.86 (5.72)</td>
<td>26.86 (5.72)</td>
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<tr>
<td>Clinical sample ($n = 149$)</td>
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<td></td>
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<td></td>
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<tr>
<td>HS</td>
<td>2.41 (1.17)</td>
<td>1.63 (1.01)</td>
<td>17.71</td>
<td>.000</td>
<td>17.71 (6.00)</td>
<td>17.71 (6.00)</td>
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<tr>
<td>BS</td>
<td>2.07 (1.08)</td>
<td>1.45 (0.99)</td>
<td>12.23</td>
<td>.001</td>
<td>12.23 (6.00)</td>
<td>12.23 (6.00)</td>
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<tr>
<td>AS</td>
<td>2.24 (0.90)</td>
<td>1.54 (0.91)</td>
<td>19.53</td>
<td>.000</td>
<td>19.53 (6.00)</td>
<td>19.53 (6.00)</td>
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<tr>
<td>DIE</td>
<td>16.04 (6.19)</td>
<td>16.67 (5.69)</td>
<td>0.37</td>
<td>ns</td>
<td>0.37 (0.90)</td>
<td>0.37 (0.90)</td>
</tr>
<tr>
<td>DEE</td>
<td>13.90 (4.65)</td>
<td>12.21 (4.56)</td>
<td>4.42</td>
<td>.037</td>
<td>4.42 (0.90)</td>
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<tr>
<td>EFT</td>
<td>20.10 (5.42)</td>
<td>17.97 (4.41)</td>
<td>6.50</td>
<td>.012</td>
<td>6.50 (0.92)</td>
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<td>TAS</td>
<td>50.04 (11.54)</td>
<td>46.85 (11.44)</td>
<td>2.53</td>
<td>ns</td>
<td>2.53 (0.90)</td>
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</tbody>
</table>

Note: ns = nonsignificant. HS = Hostile sexism; BS = Benevolent sexism; AS = Ambivalent sexism; DIE = Difficulties to identify emotions; DEE = Difficulties to express emotions; EFT = Externally focused thinking; TAS = Total Alexithymia Score.

Sexism and alexithymia: Differences as a function of educational level

The results of the MANOVA on the sexism scores (HS, BS, AS) yielded statistically significant differences among the three educational levels, Wilks' Lambda, $\lambda = .935, F(6, 1968) = 11.56, p < .001$, although the magnitude of the effect was low, $\eta^2 = .033, r = .18$. Likewise, the results of the MANOVA on alexithymia (DIE, DEE, EFT) confirmed significant differences as a function of educational level, Wilks' Lambda, $\lambda = .954, F(6, 1962) = 7.82, p < .001$, although the magnitude of the effect was low, $\eta^2 = .023, r = .15$. The results of the univariate analyses are presented in Table 3.

In alexithymia, when analyzing the entire sample and the nonclinical sample, the same results were confirmed, as the ANOVA showed significant differences in the factors DIE, DEE, EFT, and in TAS, and the scores decreased as the educational level increased. The Bonferroni test confirmed that only in DIE, there were no differences between Level 1 (up to 16 years) and Level 2 (up to 18 years). Only in DEE and EFT, no differences were found between Level 2 (up to 18 years) and Level 3 (university studies). In the clinical sample, the results point in the same direction and significant differences were confirmed in EFT and in TAS, and a significant tendency in DIE and DEE.
relations with the Alexithymia total score (TAS) for nonclinical and clinical samples in Table 2.

The results of the nonclinical sample (N = 840) showed that sexism was significantly related to alexithymia, partial correlations were carried out, and the effect of sex, age, and educational level, for the entire sample and for the separate samples (nonclinical and clinical), the results of which are presented in Table 4.

The correlation coefficients obtained (see Table 4) with the total sample (N = 989) and with the nonclinical sample (n = 840) confirmed the existence of significant positive correlations of HS, BS, and AS with DIF, DEE, DIE, and with TAS. However, in the clinical sample (n = 149), we only found correlations of HS with DEE and TAS, and of AS with DEE, EFT, and TAS. The correlations were higher for HS and AS than for BS.

### Table 3. Means, standard deviations and results of the analysis of variance of sexism and alexithymia as a function of a educational level.

#### Up to 16 years Up to 18 years University studies F(2,987) p

<table>
<thead>
<tr>
<th>Variables</th>
<th>M (SD)</th>
<th>M (SD)</th>
<th>M (SD)</th>
<th>M (SD)</th>
<th>M (SD)</th>
<th>M (SD)</th>
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<tbody>
<tr>
<td>HS</td>
<td>1.76</td>
<td>(1.01)</td>
<td>1.80</td>
<td>(1.07)</td>
<td>1.82</td>
<td>(1.15)</td>
</tr>
<tr>
<td>BS</td>
<td>1.72</td>
<td>(0.82)</td>
<td>1.81</td>
<td>(1.07)</td>
<td>1.85</td>
<td>(1.01)</td>
</tr>
<tr>
<td>AS</td>
<td>1.74</td>
<td>(0.81)</td>
<td>1.80</td>
<td>(0.95)</td>
<td>1.84</td>
<td>(0.96)</td>
</tr>
<tr>
<td>DIE</td>
<td>14.39</td>
<td>(4.75)</td>
<td>14.18</td>
<td>(4.98)</td>
<td>14.43</td>
<td>(5.16)</td>
</tr>
<tr>
<td>DEE</td>
<td>13.14</td>
<td>(4.21)</td>
<td>13.22</td>
<td>(4.80)</td>
<td>12.75</td>
<td>(4.54)</td>
</tr>
<tr>
<td>EFT</td>
<td>17.42</td>
<td>(4.55)</td>
<td>19.14</td>
<td>(5.05)</td>
<td>18.97</td>
<td>(4.52)</td>
</tr>
<tr>
<td>TAS</td>
<td>45.31</td>
<td>(10.40)</td>
<td>46.80</td>
<td>(11.22)</td>
<td>47.60</td>
<td>(10.94)</td>
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#### Clinical sample (n = 149)

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<td>HS</td>
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<td>AS</td>
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<td>1.87</td>
<td>(1.06)</td>
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<td>(0.94)</td>
</tr>
<tr>
<td>DIE</td>
<td>16.27</td>
<td>(5.05)</td>
<td>15.46</td>
<td>(6.14)</td>
<td>17.62</td>
<td>(6.29)</td>
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<tr>
<td>DEE</td>
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<td>13.82</td>
<td>(4.70)</td>
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<td>(4.75)</td>
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<tr>
<td>EFT</td>
<td>17.35</td>
<td>(4.53)</td>
<td>19.46</td>
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<td>(4.64)</td>
</tr>
<tr>
<td>TAS</td>
<td>49.57</td>
<td>(10.29)</td>
<td>46.50</td>
<td>(10.89)</td>
<td>46.37</td>
<td>(10.72)</td>
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#### Nonclinical sample (n = 840)

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<th>M (SD)</th>
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</thead>
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<tr>
<td>HS</td>
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<td>(1.09)</td>
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<tr>
<td>BS</td>
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<td>(1.11)</td>
<td>1.76</td>
<td>(0.96)</td>
</tr>
<tr>
<td>AS</td>
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<td>(1.00)</td>
<td>1.81</td>
<td>(0.90)</td>
</tr>
<tr>
<td>DIE</td>
<td>16.60</td>
<td>(6.27)</td>
<td>14.73</td>
<td>(5.13)</td>
</tr>
<tr>
<td>DEE</td>
<td>13.92</td>
<td>(4.49)</td>
<td>12.43</td>
<td>(4.26)</td>
</tr>
<tr>
<td>EFT</td>
<td>18.50</td>
<td>(4.80)</td>
<td>16.80</td>
<td>(4.86)</td>
</tr>
<tr>
<td>TAS</td>
<td>50.73</td>
<td>(11.96)</td>
<td>46.20</td>
<td>(10.53)</td>
</tr>
</tbody>
</table>

### Relations between sexism and alexithymia

In order to analyze the concomitant relations between sexism and alexithymia, partial correlations were carried out, controlling for the effect of sex, age, and educational level, for the entire sample and for the separate samples (nonclinical and clinical), the results of which are presented in Table 4.

The correlation coefficients obtained (see Table 4) with the total sample (N = 989) and with the nonclinical sample (n = 840) confirmed the existence of significant positive correlations of HS, BS, and AS with DIF, DEE, DIE, and with TAS. However, in the clinical sample (n = 149), we only found correlations of HS with DEE and TAS, and of AS with DEE, EFT, and TAS. The correlations were higher for HS and AS than for BS.

### Table 4. Partial correlations between sexism and alexithymia, controlling for the effect of sex, age, and educational level, in the nonclinical and clinical samples.

#### Total Non-CI CI Total Non-CI CI Total Non-CI CI

<table>
<thead>
<tr>
<th>Variables</th>
<th>18.53</th>
<th>(7.71)</th>
<th>15.87</th>
<th>(5.25)</th>
<th>16.09</th>
<th>(5.07)</th>
<th>2.42</th>
<th>.000</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEE</td>
<td>12.83</td>
<td>(6.22)</td>
<td>13.34</td>
<td>(5.53)</td>
<td>11.24</td>
<td>(3.62)</td>
<td>2.48</td>
<td>.000</td>
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<tr>
<td>EFT</td>
<td>20.33</td>
<td>(4.86)</td>
<td>16.80</td>
<td>(4.85)</td>
<td>17.36</td>
<td>(4.64)</td>
<td>3.02</td>
<td>.050</td>
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<tr>
<td>TAS</td>
<td>51.70</td>
<td>(15.23)</td>
<td>47.81</td>
<td>(10.64)</td>
<td>44.70</td>
<td>(8.92)</td>
<td>2.98</td>
<td>.000</td>
</tr>
</tbody>
</table>

Note: ns = nonsignificant; HS = Hostile sexism; BS = Benevolent sexism; AS = Ambivalent sexism; DIF = Difficulties to identify emotions; DEE = Difficulties to express emotions; EFT = Externally focused thinking; TAS = Total Alexithymia Score.
Discussion

Firstly, the results obtained in gender differences reveal that men score significantly higher in HS, BS, and AS both in the clinical and nonclinical samples. Likewise, in both samples, higher scores were found in the men in two factors of alexithymia, DEE and EFT. In the TAS, the men scored significantly higher only in the nonclinical sample. Thus, Hypothesis 1 is partially confirmed, because, in contrast to what was hypothesized, no gender differences were found in DIE in the entire sample, nor were differences found in TAS in the clinical sample.

The men's higher scores in HS and BS confirm the results obtained in other studies (Feather, 2004; Feather & Boeckmann, 2007; Forbes et al. 2004; Forbes et al. 2007; Fowers & Fowers, 2010; Garaigordobil & Aliri, 2011a, 2011b; Glick & Fiske, 1996; Glick et al. 1997; Lameiras & Rodríguez, 2003; Lameiras et al. 2007; Lee et al. 2007; Liang, 2007; Masser y Abrams, 1999; Pozo et al. 2010; Russel & Trigg, 2004; Travaglia et al. 2009; Viki et al. 2003; Wiener & Hurt, 2000; Wiener et al. 1997). However, other investigations did not find gender differences in BS (Chen et al. 2009; Eastwick et al. 2006; Expósito et al. 1998; Glick et al. 2002; Lameiras & Rodríguez, 2002; Lameiras et al. 2006; Pereira et al. 2005; Sakalli-Ugurlu, 2010; Sakalli-Ugurlu et al. 2007; Tasdemir & Sakalli-Ugurlu, 2010; Vaamonde, 2010). The differences may be explained by the age differences of the samples of the studies, because many of them were only carried out with university students.

However, the results confirm the findings of studies carried out with nonclinical adult samples, which have found a greater tendency in men to score higher in alexithymia, at least in the total score (Carpenter & Addis, 2000; Heshmati et al. 2010; Honkalampi et al. 2000; Kokkonen et al. 2001; Lane et al. 1998; Levant et al. 2009; Mattila et al. 2006; Moral de la Rubia & Retamales, 2000; Páez & Velasco, 1993; Parker et al. 2003; Salminen et al. 1999), which converges with the sexual stereotypes that suggest that men should display their emotions less than women. In addition, this corroborates results of the work of Moral de la Rubia (2005), who found that men significantly presented a more externally focused thinking style, and also the results of Levant et al. (2006), who verified that, in most of the studies with clinical samples, no gender differences were found in TAS. This absence of gender differences in the clinical samples may be explained by the processes of emotional identification and expression that are stimulated in the men who seek psychological treatment.

Secondly, the results of the study have confirmed that no changes with age are observed in HS and DEE. However, as of 55 years, a significant increase was found in BS, AS, and DIE, EFT, and in TAS, but only in the nonclinical sample. These results partially ratify Hypothesis 2, because significantly higher scores were observed in the last age range (55-65 years) in BS and AS, and in alexithymia (DIE, EFT, TAS), but this increase was only observed in the nonclinical sample. The results ratify those obtained in the investigations that have found an increase in sexism with age (Lameiras et al. 2004; Moya et al. 2002), as well as the studies that have shown that older people have significantly higher scores in alexithymia (Joukamaa et al. 1996; Honkalampi et al. 2000; Lane et al. 1998; Lunazzi, 2000; Mattila et al. 2006; Parker et al. 2003; Salminen et al. 1999). The absence of an increase with age of sexism and alexithymia in the clinical sample may be explained by the larger number of women in the clinical sample, because women score lower in sexism and alexithymia.

Thirdly, the results of the study confirm that, in the global sample and in the nonclinical sample, as educational level increases all the types of sexism and total alexithymia and all its factors decrease. In the clinical sample, although the data point in the same direction, in sexism the differences were nonsignificant, whereas in alexithymia, similar results as those obtained in the nonclinical sample are confirmed. Therefore, the results practically ratify Hypothesis 3 in its entirety and they confirm those obtained in the investigations that have shown that sexism decreases as the educational level increases (Glick et al. 2002; Lameiras & Rodríguez, 2003; Pereira et al. 2005), and that alexithymia is negatively related to the socio-economic level and the educational level (Cerezo et al. 1988; Honkalampi et al. 2000; Joukamaa et al. 1996; Kokkonen et al. 2001; Lane et al. 1998; Lunazzi, 2000; Mattila et al. 2006; Moral de la Rubia & Retamales, 2000; Parker et al. 2003; Salminen et al. 1999).

Lastly, with regard to the connections between sexism and alexithymia, the results obtained both with the total sample and with the nonclinical sample reveal that people with a high score in HS, BS, and AS will also display DIE, DEE, EFT, and a high TAS. In the clinical sample, HS and AS had significant positive correlations with EFT and with TAS, but BS was not related to alexithymia. Therefore, Hypothesis 4 is confirmed almost in its entirety. These results ratify those obtained in some studies (Fischer & Good, 1997; Levant, 1992; Levant et al. 2009) that have related alexithymia with the socialization processes of the gender role, proposing that traditional masculine socialization supports alexithymia to some extent, as such socialization has usually been very restrictive when identifying or expressing emotions and feelings.

The work carried out is novel for two reasons: 1) because it analyzes the relations between different types of sexism and alexithymia in nonclinical and clinical samples, an aspect that has not been studied previously. Sexism is a construct with relevant implications, both in the relations of equality and gender violence; and 2) because it explores the effect of age and educational level on alexithymia, another aspect that was not analyzed in previous investigations.

The results of this work imply two significant theoretical contributions, on the one hand, having provided evidence of the connections between sexism and alexithymia (Difficulties in emotional identification, expression, comprehension, etc.) and, on the other hand, having shown that the higher
the educational level, the lower the levels of sexism and alexithymia. Both contributions have practical implications and lead us to suggest: 1) the need to implement psychoeducational programs in childhood and adolescence that include activities to promote emotional development (identifying emotions, expressing emotions, analyzing emotions cognitively, empathy, etc.), activities to promote the decrease of sexist attitudes, etc.; and 2) the need to develop community strategies aimed at increasing the educational level of the general population, because a higher educational level is related to more egalitarian and less sexist attitudes, and with fewer difficulties to identify, express, and comprehend emotions.

Among the limitations of the study, we note having used self-reports to measure the target variables of the study, with the desirability biases involved in this assessment methodology. Also, as it is a cross-sectional study, we can verify the concomitant relations among these variables, but not causality relations. We therefore suggest carrying out future studies with observational and experimental methodology.

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