

## BASIC SCIENCE

# Individual, Relational, and Sociocultural Determinants of Sexual Function and Sexual Satisfaction in Ecuador



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## ABSTRACT

**Aim:** Various individual, relational, and sociocultural variables have been identified as determinants of sexual responding, but these have rarely been investigated in non-Western cultures that are characterized by sexual conservatism. We aimed to explore the role of socioeconomic status and religion, sexual double standards, erotophobia-erotophilia, sexual dysfunctional beliefs, and relationship satisfaction to explain sexual function and satisfaction in Ecuador.

**Method:** 599 participants (431 women and 159 men) completed an online survey.

**Main Outcomes Measures:** The Female sexual function was predicted by sexual satisfaction, relationship satisfaction, sexual dysfunctional beliefs, and sexual double standards, while the male sexual function was predicted solely by sexual satisfaction. Additionally, female sexual satisfaction was predicted by sexual function, relationship satisfaction, and sexual dysfunctional beliefs, while male sexual satisfaction was predicted by sexual function and relationship satisfaction.

**Results:** Female Sexual Function Index, International Index of Erectile Function, Brief Sexual Opinion Survey, Sexual Double Standards Scale, Sexual Dysfunctional Beliefs Questionnaire, New Sexual Satisfaction Scale, and Couple Satisfaction Index.

**Conclusion:** This study provided novel information on the determinants of sexual function and satisfaction within a culture in which conservative religious beliefs still prevail. Results should be interpreted with caution given the unequal distribution of men and women, social desirability and volunteer biases, and the specific COVID-19 pandemic context during which the survey took place. Markers of sexual conservatism were inversely related to sexual function and satisfaction, mainly in women, and may, therefore, be important targets of treatment. Female sexuality seemed more context-dependent than male sexuality, although enhancing the general climate of the relationship may benefit feeling sexually satisfied in both men and women. **DA Hidalgo, M Dewitte. Individual, Relational, and Sociocultural Determinants of Sexual Function and Sexual Satisfaction in Ecuador. Sex Med 2021;XX:XXX–XXX.**

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**Key Words:** Sexual Function; Sexual Satisfaction; Ecuador; Sexual Conservatism; Culture

## INTRODUCTION

Research on sexuality in Latin America, although having gained momentum in the last 2 decades, remains scarce. A recent meta-analysis has shown that only 1.35% of the articles on

sexuality published (in the Journal of Sex Research) between 1965 to 2014 focused on Latin America.<sup>1</sup> Interestingly, almost 40% of these articles focused on reproductive health and sexual risk.<sup>1</sup> This can be explained by the political and institutional function of sex research in Latin America, which is being used to inform public health policies.<sup>2</sup> For obvious reasons, the focus on sexual health is desirable, but limiting research on sexuality to only prevention-related topics is disadvantageous. Sexual health is more than the absence of disease. Experiencing a functional and satisfying sex life is an important determinant of general well-being and quality of life.<sup>3,4</sup> The primary aim of this study was to shed light on the psychological and relational determinants of sexual function and satisfaction in Ecuador.

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The influence of conservative values regarding sexuality, mixed with the increasing influence of “modern sex attitudes” (particularly for younger generations and higher socioeconomic classes), results in a particular cultural context that is widely different from that in which sex research usually takes place.

## A Biopsychosocial View on Sexual Function and Sexual Satisfaction

Although sexual function has a clear biological basis, referring to bodily reactions and hormonal processes, it is now commonly accepted that sexual function involves psychological and socio-cultural factors as well.<sup>5</sup> Drawing on the biopsychosocial model of sexual responding, various individual and sociocultural variables have been identified as determinants of sexual function, including, among others, sociodemographic variables, religion, and cognitive beliefs.<sup>6</sup> Given that sexuality often occurs in the context of relationships, sexual function is highly influenced by relational variables as well, such as relationship satisfaction and perceived partner responsiveness.<sup>7</sup> These relational variables, in turn, can be affected by culture-related factors such as religion, social scripts, and gender role expectations.<sup>8</sup>

In addition to sexual function, much research attention has been devoted to sexual satisfaction. The extent to which one feels satisfied with his or her sexual life has been forwarded as an important determinant of sexual function and quality of life in general.<sup>3,9,10</sup> Given that sexual function and satisfaction are central outcome variables in sex research, are determined by numerous factors that are often culturally dependent, and have received limited research attention within the setting of Latin America, the present study will focus on these specific variables and how they are manifested in a cultural context that is shaped by traditional beliefs and religious impact.

## Individual Variables Shaped by Sociocultural Context

In many parts of the globe, including Ecuador, sexual norms are highly influenced by religion. In Ecuador, 92% of the population considers themselves to be religious, and of those, 80% self-report as Catholics.<sup>11</sup> The belief that men and women need to follow different standards of sexual conduct, with men being praised for various sexual behavior while women are stigmatized for similar actions, is still pervasive in Ecuador and reflects the strong impact of religion on sexual expression. The term *marianismo*, deriving from *Maria* (Virgin Mary), refers to women’s subordinate position and idealized gender role expectations, including being virtuous, pure, non-sexual, humble, and spiritually superior to men.<sup>12</sup> Along this line, the term *machismo* (exaggerated virility, masculinity, power, and dominance) is commonly used to describe Latino men’s gender role expectations. This is exemplified in reports of male Latin American teenagers feeling pressured to have sexual intercourse in order to prove their manliness and avoid rumors of homosexuality.<sup>13,14</sup>

Considering the influential role of Catholicism in Ecuador’s cultural norms, the impact of religion on sexual function and satisfaction is worth exploring.

Previous studies have considered the complex social script underlying sexual behavior in Latin America, which includes the above mentioned double sexual standard. In a qualitative study in Cuenca, Ecuador, women explained how they are expected to maintain an image of chastity, while men are usually expected to have a sexual history before marriage.<sup>15</sup> This double narrative is not unique to Ecuador. In a study focusing on perceived consequences of first intercourse among Mexican adolescents, it has been found that more male students (than females) felt sex had enhanced their reputation, while more female students (than males) felt sex had harmed their reputation.<sup>14</sup> Not surprisingly, participants who identified as strongly religious were most likely to feel they contradicted their morals and did not enjoy the experience.<sup>14</sup>

Elaborating on the importance of beliefs and attitudes, the construct of erotophilia-erotophobia is also relevant to consider, referring to the learned disposition to evaluate sexual stimuli based on one’s exposure to sex-related openness or restrictiveness.<sup>16</sup> Erotophilia refers to a positive valence (eg, it is exciting to think of having a sexual relationship), while erotophobia denotes a negative valence (eg, I feel no curiosity for material of sexual content). Not surprisingly, erotophobia is associated with parental strictness about sex, sex-related fear and guilt, traditional sex roles, and other conservative attitudes.<sup>16</sup> This is important in the context of Latin America because family/parental opinion has a large impact on sexual behavior.<sup>15</sup> Higher levels of erotophilia have been found to relate to higher levels of sexual functioning in both women and men.<sup>17</sup>

There are several other cognitive variables that might explain sexual responding. In the case of sexual dysfunctions, certain recurrent beliefs (on sexual conservatism, fear of intimacy, high-performance, body-image) are considered etiological factors.<sup>18</sup> Nobre and Pinto-Gouveia<sup>19</sup> found that both men and women with sexual dysfunctions held more sexually dysfunctional beliefs than sexually functional beliefs and concluded that dysfunctional sexual beliefs are a vulnerability factor for developing sexual dysfunctions. Similarly, Peixoto and Nobre<sup>20</sup> found that men with sexual dysfunctions reported more conservative beliefs compared to sexually healthy men. Latin America’s cultural background suggests a higher prevalence of sexual conservative beliefs, compared to other parts of the world, which is likely to impact sexual function and satisfaction.

In addition to religion and beliefs, sociodemographic factors have also been found to influence sexual function and satisfaction. In studies with Latin American participants, it has been reported that sexual satisfaction and function are positively associated with higher socioeconomic status and educational level.<sup>21,22</sup> Higher social classes would be more prone to the influence of “modernity and change,” which would challenge

traditional values and social scripts. In accordance, Barrientos and Páez<sup>22</sup> reported that young people are more sexually satisfied than older generations, plausibly due to less conservative attitudes toward sex. These results further support an important role of sociodemographic variables in sexual function and satisfaction.

### Relational Variables Shaped by Sociocultural Context

Relational variables have also been found to play an important role in explaining sexual function and satisfaction. Studies in Latin American have found that being in love with one's partner relates to higher levels of sexual satisfaction and that partner faithfulness can act as a protective factor regarding sexual dysfunctions.<sup>21,22</sup> Similarly, Byers<sup>23</sup> reported that sexual satisfaction and relationship satisfaction changed alongside. Vowels and Mark<sup>24</sup> confirmed these findings and concluded that relationship satisfaction seems to predict sexual satisfaction (rather than the other way around). It is clear that various non-sexual factors play a role in how satisfied a person feels with his or her relationship, including trust, commitment, emotional support, and communication.<sup>25</sup> In Ecuador, the association between relationship factors and sexual function and satisfaction remains to be explored.

### The Present Study

The current study aimed to analyze the role of individual, relational, and sociocultural determinants of sexual function and sexual satisfaction in Ecuador. Based on previous research, we expect that sexual conservatism, religiosity, double sexual standards, erotophobia, and sexual dysfunctional beliefs will be inversely related to sexual function and satisfaction in Ecuador. We also expect that socioeconomic status and relationship satisfaction will be positively related to sexual function and satisfaction in Ecuador's cultural context. We will explore whether these associations are different in men compared to women, predicting that sociocultural variables such as sexual conservatism and double sexual standards show a stronger association with female sexual outcomes compared to males. Importantly, this study has been conducted during the COVID-19 pandemic, with social mitigation measures being imposed on people in Ecuador. Because this specific context likely influences sexual and relational experiences, we will measure the impact of the COVID-19 measures on sex and relationships and explore its role in explaining the associations between variables.

## METHODS

### Participants

The sample comprised of 599 (72% women, 26.5% men, and 1.5% other or prefer not to say) participants who met the following inclusion criteria: a) being 18 or older, b) having Ecuadorian nationality or residing in Ecuador, c) being in a committed relationship for at least 6 months, and d) being sexually active. Participants ranged in age from 18 to 58, with a mean age of 26.5 ( $SD = 6.84$ ). They were recruited from the Ecuadorian general population.

## Materials

### Sociodemographic Variables

An ad hoc questionnaire was used to assess age, gender, education level, religiosity, employment status, relationship length, and cohabitation status.

### Brief Sexual Opinion Survey

The Colombian version of the Sexual Opinion Survey-6 was used to assess erotophobia-erotophilia. The survey consists of 6 items, which participants responded to on a 7-point Likert scale (1 = strongly disagree and 7 = strongly agree). A previous study<sup>26</sup> reported that psychometric properties were adequate. In the current study, the survey had adequate reliability (Cronbach's Alpha = 0.849).

### Sexual Double Standards Scale

The abridged Spanish version of the Sexual Double Standards Scale was used to evaluate sexual double standards. The scale consists of 16 items distributed into factors "acceptance for sexual freedom" and "acceptance for sexual shyness," as well as providing a global index for the sexual double standards. Responding occurs on a 4-point Likert scale, ranging from 0 = strongly disagree, and 3 = strongly agree. Its validity and reliability have been established in previous research.<sup>27</sup> In the current study, the scale showed rather low reliability (Cronbach's Alpha = 0.447).

### Sexual Dysfunctional Beliefs Questionnaire

Given that there is no Spanish version of the Sexual Dysfunctional Beliefs Questionnaire (SDBQ), the original English scale was back-translated to Spanish. The self-report measure consists of 2 versions, female and male, which are rated on a 5-point Likert scale (1 = completely disagree, 5 = completely agree). For the following study, only the factors "sexual conservatism" and "sexual desire and pleasure as sin" were used for the female version. Similarly, for the male version, only the factors "sexual conservatism" and "macho" beliefs were used. This decision was made given that these factors seem to be the most relevant, considering the cultural setting of Ecuador, where the study takes place. We did not validate the Spanish version of this questionnaire, but Nobre, Pinto-Gouveia, and Allen-Gomes<sup>19</sup> reported satisfactory internal consistency and test-retest reliability of the original questionnaire, and we did find high reliability in the current sample (female version, Cronbach's Alpha = 0.843; male version, Cronbach's Alpha = 0.847).

### New Sexual Satisfaction Scale

The Spanish version of the New Sexual Satisfaction-Short Form was used. It consists of 12 items that measure sexual satisfaction regardless of sexual orientation, gender, or

relationship status. It is scored using a 5-point Likert scale, with 1 = not at all satisfied and 5 = extremely satisfied. The instrument has shown good internal reliability.<sup>28</sup> In the current study, the scale had adequate reliability (Cronbach's Alpha = 0.91).

#### Female Sexual Function Index

The Colombian adaptation of the Female Sexual Function Index (FSFI)<sup>29</sup> was used to assess women's sexual function. The FSFI features 19 items, which are distributed into the following factors: Desire, Arousal, Lubrication, Orgasm, Satisfaction, and Pain. It is scored using a 5 or 6-point Likert scale (0–5 or 1–5). The temporal reference of the FSFI refers to the last 4 weeks, but due to the circumstances of quarantine due to COVID-19 (and considering many non-married couples in Ecuador do not cohabit), the temporal reference has been changed to the last 6 months. Vallejo-Medina, Pérez-Durán, and Saavedra-Roa<sup>29</sup> reported adequate psychometric properties. In the current study, the index had adequate reliability (Cronbach's Alpha = 0.922).

#### International Index of Erectile Function

The Chilean adaptation for the International Index of Erectile Function (IIEF)<sup>30</sup> was used to assess men's sexual function. This consists of 15 items and is scored using a 5-point Likert scale that measures frequency, intensity or level of satisfaction, depending on the item. Similarly to the FSFI, the temporal reference of the IIEF has been changed to the last 6 months. In previous studies, the index showed excellent reliability.<sup>30</sup> In the current study, the index had adequate reliability (Cronbach's Alpha = 0.791).

#### Couples Satisfaction Index

The 4-item version of the Couples Satisfaction Index (CSI) was used to assess relationship satisfaction. Given that there is no Spanish version available, the original English scale was back-translated into Spanish. The items are scored using a 6 or 7-point Likert scale ranging from 0 to 6 and from 1 to 6. Funk and Rogge<sup>31</sup> reported that the original version of CSI has adequate internal consistency and strong convergent validity with other measures of relationship satisfaction. We did not validate the Spanish version of this questionnaire, but we did find adequate reliability (Cronbach's Alpha = 0.806) in the current sample.

#### Effect of Quarantine

To take into account the context of COVID-19 social mitigation measures, we asked about the effect of quarantine using 2 single items: "How did quarantine affect your sex life?" and "How did quarantine affect your relationship?". The items are scored on a 1 to 3 scale (1 = "for worst," 2 = "no effect," 3 = "for better"). These items have been developed for the current study and have thus not been validated before.

#### Procedure

Participants were recruited via social media platforms. Specifically, we implemented paid advertisements on Instagram and Facebook that ran for 8 days in Ecuador's geographical region. The advertisement consisted of the text (in Spanish) "We are looking for participants for a study about sexuality in Ecuador. Participate!" and an illustration of 2 pairs of feet next to each other (alluding to a couple). The ad also included the inclusion criteria and a link to the survey. It was also shared with the personal contacts of the researcher in an attempt to reach as many people as possible. Likewise, an effort was made to reach participants throughout all provinces in Ecuador by publishing the advertisement in open Facebook groups organized by provinces (eg, "Announcements Latacunga"). The survey, which included the scales and indexes mentioned above, was assembled using an institutional account in Qualtrics XM (Qualtrics, Provo, UT). It took approximately 20 minutes to complete and started with a brief statement explaining the aim of the study and inclusion criteria. This was continued by the consent form, which had to be digitally agreed to before the survey began. After having completed the study, participants could opt to receive their score on 4 scales (double sexual standard, sexual opinion, sexual satisfaction, and couple satisfaction), with a short explanation to interpret the scores, as a participation incentive. They did not receive any monetary compensation. The study has been approved by the ethical board of Maastricht University (which is the main institution of the supervisor of this study).

#### DATA ANALYSIS

All analyses were conducted using IBM SPSS Statistics version 25 (IBM Corp., Armonk, NY, USA). First, we calculated descriptive statistics for the participant sample and provided the means for all variables of interest. Second, correlations among all variables were calculated using Pearson's correlations. A series of independent *t*-tests were used to examine gender differences regarding the main variables (age, sexual double standards, relationship satisfaction, erotophilia-erotophobia, sexual dysfunctional beliefs, sexual satisfaction). Following this, a series of ANOVA tests were conducted on the outcome variables (sexual function, sexual satisfaction, relationship satisfaction), entering the effect of quarantine as a between-subjects variable (negative, positive, or no perceived effect). Last, hierarchical regression analyses were used to explore the predictive value of religion, education, income, sexual dysfunctional beliefs, erotophobia-erotophilia, sexual double standards, and relationship satisfaction on female and male sexual function and satisfaction. For exploratory reasons, we also ran a model to determine if the perceived effect of quarantine played a role in predicting sexual function and satisfaction. For all models, religion, education and income were entered in step 1; sexual dysfunctional beliefs, erotophobia-erotophilia and sexual double standards were entered in step 2; sexual satisfaction (or sexual function) and relationship satisfaction were entered in step 3. We ran separate

models for men and women, and separate models for sexual function and sexual satisfaction as outcome variables. In the “quarantine effect” model, the perceived effect of quarantine was added in a fourth step, with separate models for perceived effect on sex life and perceived effect on the relationship.

## RESULTS

### Descriptives

The majority of participants was highly educated and resided in urban areas (see Table 1). Slightly more than half of the participants described themselves as religious, and half self-identified as belonging to Christianity. Most reported not cohabitating with their partners, not having children, and being in their current relationship for 2 years or less.

### Gender Differences

On average, men were older than women (see Table 2). In addition, a significant gender difference was found regarding sexual double standards scores. No significant gender differences were found regarding the other variables of interest.

### Correlations

Significant positive correlations were found between sexual satisfaction and female sexual function, as well as sexual satisfaction and male sexual function (see Table 3). Relationship satisfaction was positively correlated with female sexual function, male sexual function, and sexual satisfaction. Sexual double standards were positively correlated with female sexual function and relationship satisfaction. Erotophilia was positively correlated with female sexual function and sexual double standards. In men, sexual dysfunctional beliefs were positively correlated with sexual double standards. Finally, in women, sexual dysfunctional beliefs were negatively correlated with female sexual function, relationship satisfaction, and erotophilia.

### Perceived Effect of Quarantine

Most participants felt quarantine had no effect on their relationship, but a considerable percentage felt quarantine had a negative effect on their sex life (see Table 4). Significant differences in female sexual function, sexual satisfaction, and relationship satisfaction were found as a function of the perceived effect of quarantine on the relationship, with lower scores for participants reporting a negative effect and higher scores for participants reporting a positive effect. Similarly, significant differences in sexual satisfaction and relationship satisfaction were found as a function of the perceived effect of quarantine on their sex life, with lower scores for participants reporting a negative effect and higher scores for participants reporting a positive effect. For the perceived effect of quarantine on the relationship, post hoc Bonferroni tests showed that mean scores (for female sexual function, sexual satisfaction, and relationship satisfaction) were significantly different between “no effect” and “for worst,”

**Table 1.** Sociodemographic Characteristics of our Sample

Variable	Demographic Items	<i>n</i>	%
Gender	Female	431	72
	Male	159	26.5
	Other	3	0.5
	Prefer not to say	6	1
Education	Primary Education or less	6	1
	Secondary Education	88	14.7
	Technical Degree	49	8.2
	University Degree	456	76.2
Religiosity	Not religious	203	33.9
	Religious	346	57.8
	No response	50	8.3
Religion	Christianism (Catholicism, Protestantism, etc.)	302	50.4
	Other	32	5.4
	No religion	214	35.7
Employment	Employed	240	40.1
	Unemployed	123	20.5
	Studying	208	34.7
	Other	28	4.7
Cohabitation	Married	86	14.4
	Cohabiting (non-married)	92	15.2
	Not cohabiting	421	70.3
Relationship	6 months - 1 year	164	27.4
	1–2 years	190	31.7
	3–5 years	127	21.2
	6–9 years	61	10.2
	10 years or more	57	9.5
Residence	Urban	540	90.2
	Rural	59	9.8
Children	Yes	141	23.5
	No	458	76.5

and between “for worst” and “for better.” For the perceived effect of quarantine on sex life, post hoc tests showed that sexual satisfaction mean scores significantly differed between “for worst” and “no effect,” while relationship satisfaction mean scores significantly differed between “for worst” and “no effect,” and between “for worst” and “for better.”

### Regression Models

#### Female Sexual Function

A significant regression equation was found ( $F(8,385) = 68.459, P < .001$ ), with an  $R^2$  of 0.587 indicating that adding the variables in step 2 (namely sexual dysfunctional beliefs, erotophobia-erotophilia and sexual double standards) and step 3 (namely sexual satisfaction and relationship satisfaction) increased the predictive value of the model. Results showed that sexual dysfunctional beliefs (standardized Beta =  $-0.175$ ;  $t = -4.536, P < .01$ ), sexual double standards (standardized Beta =  $0.112$ ;  $t = 3.332, P < .01$ ), sexual satisfaction (standardized Beta =  $0.648$ ;  $t = 17.206, P < .01$ ) and relationship

**Table 2.** Means of the main variables of interest per gender

Variables	Mean women	Mean men	<i>t</i>
Age	25.72	28.85	5.034*
Sexual Double Standards	-1.25	.11	5.210*
Couple Satisfaction Index	17.28	17.74	1.120
Sexual Opinion Survey	33.86	34.53	.876
SDBQ	20.51	32.06	-
Sexual Satisfaction	49.35	49.94	.716
Female Sexual Function	29.86	-	-
Erectile Function	-	64.6	-

\* $P < .01$  level (2-tailed).

satisfaction (standardized Beta = 0.107;  $t = 2.788$ ,  $P < .01$ ) were significant predictors of the level of female sexual function, indicating that a higher score on dysfunctional beliefs was associated with lower sexual function, while higher sexual double standards, sexual satisfaction, and relationship satisfaction were associated with better sexual function in women. None of the other variables were significant predictors (all  $P$ 's > 0.05).

#### Male Sexual Function

A significant regression equation was found ( $F(8,137) = 6.220$ ,  $P < .001$ ), with an  $R^2$  of 0.224, indicating that adding the variables in step 2 and step 3 increased the predictive value of the model. We found that sexual satisfaction (standardized Beta = 0.435;  $t = 5.135$ ,  $P < .01$ ) predicted the level of male sexual function, indicating that higher levels of sexual satisfaction were associated with better male sexual function. None of the other variables were significant predictors (all  $P$ 's > 0.05).

#### Female Sexual Satisfaction

A significant regression equation was found ( $F(8,385) = 64.572$ ,  $P < .001$ ), with an  $R^2$  of 0.573, indicating that adding the variables in step 2 and step 3 increased the predictive value of the model. Female sexual function (standardized Beta = 0.671;  $t = 17.206$ ,  $P < .01$ ), relationship

satisfaction (standardized Beta = 0.198;  $t = 5.207$ ,  $P < .01$ ) and sexual dysfunctional beliefs (standardized Beta = -0.089;  $t = -2.217$ ,  $P < .05$ ) were found to be significant predictors of the female sexual satisfaction, indicating that lower dysfunctional beliefs were associated with higher levels of sexual satisfaction in women, while higher levels of sexual function and relationship satisfaction were associated with higher sexual satisfaction. None of the other variables were significant predictors (all  $P$ 's > 0.05).

#### Male Sexual Satisfaction

A significant regression equation was found ( $F(8,137) = 10.204$ ,  $P < .001$ ), with an  $R^2$  of 0.373, indicating that adding the variables in step 2 and step 3 increased the predictive value of the model. We found that male sexual function (standardized Beta = 0.371;  $t = 5.135$ ,  $P < .01$ ) and relationship satisfaction (standardized Beta = 0.393;  $t = 5.478$ ,  $P < .01$ ) were significant predictors of male sexual satisfaction, indicating that higher levels of sexual function and relationship satisfaction were associated with a higher level of sexual satisfaction in men. None of the other variables were significant predictors (all  $P$ 's > 0.05).

#### Quarantine Effect

To determine if quarantine had a predictive role regarding sexual function and satisfaction, we re-ran the previous models entering "perceived effect of quarantine on sex life" and "perceived effect of quarantine on relationship" in a fourth step. For female sexual function, the model did not change significantly once these variables were added, showing no significant predictive value of perceived quarantine. Although the overall model did not significantly change when adding the quarantine variables in the case of female sexual satisfaction,  $R^2 < 0.6$ ,  $P > .10$ , perceived effect of quarantine on the relationship did have a significant predictive value ( $t = 2.008$ ,  $P < .05$ ). For both men's sexual function and satisfaction, the model did not significantly change when including the quarantine variables, and no predictive value of the variables was found.

**Table 3.** Correlations among the variables of interest

Variables	1.	2.	3.	4.	5.	6.	7.	8.
1. Female Sexual Function	1		0.725*	0.462*	0.191†	0.144†		0.244*
2. Male Sexual Function		1	0.458*	0.282†	0.096	0.012	0.101	
3. Sexual Satisfaction			1	0.481*	0.06	0.014	0.016	-0.087
4. Relationship Satisfaction				1	0.127†	0.074	-0.045	-0.161†
5. Sexual Double Standards					1	0.111†	0.202†	0.04
6. Erotophilia-Erotophobia						1	-0.083	0.371*
7. Sexual Dysfunctional Beliefs (Men)							1	
8. Sexual Dysfunctional Beliefs (Women)								1

\* $P < .01$  level (2-tailed).

† $P < .05$  level (2-tailed).

**Table 4.** Effect of quarantine on the outcome variables

Variables	For worst	No effect	For better	F
Frequency of Responses, <i>n</i> (%)				
Effect of Quarantine on Relationship	153 (25.5)	315 (52.6)	80 (13.4)	
Effect of Quarantine on Sex Life	261 (43.6)	229 (38.2)	58 (9.7)	
Effect of Quarantine on Relationship, <i>M</i> ( <i>SD</i> )				
Sexual function	28.28 (5.23)	30.3 (4.65)	31.1 (3.83)	9.288*
Sexual satisfaction	45.97 (9.18)	50.82 (7.82)	51.39 (7.34)	20.577*
Relation satisfaction	14.82 (4.27)	18.38 (3.75)	18.58 (4.13)	45.869*
Effect of Quarantine on Sex Life, <i>M</i> ( <i>SD</i> )				
Sexual function	48.27 (8.48)	50.62 (8.3)	51.12 (8.13)	5.944*
Sexual satisfaction				
Relation satisfaction	16.68 (4.38)	17.99 (4.02)	18.43 (4.23)	7.775*

\* $P < .01$  level (2-tailed).

## DISCUSSION

The present study aimed to explore the role of individual, relational, and sociocultural variables in determining the sexual function and satisfaction of men and women living in Ecuador, Latin America. We found that sexual function and satisfaction were interrelated in both men and women. Furthermore, relationship satisfaction was associated with sexual function and satisfaction in women, whereas in men, only relationship satisfaction predicted levels of sexual satisfaction. We also found that sexual dysfunctional beliefs and sexual double standards were associated with sexual function and satisfaction, but only in women. Finally, sociodemographic variables showed no significant associations with the outcome variables.

### General Remarks on Our Sample Characteristics

The current sample was less conservative than initially conjectured when considering the historical context of the region. This needs to be taken into account when interpreting the current pattern of findings. Both men and women showed only a few indications of having internalized a sexual double standards as the scores on the SDS were fairly close to zero. Likewise, both men and women scored higher on erotophilia; a tendency to ascribe a positive valence to sexual stimuli and being sexually open. They also scored relatively low on “sexual conservatism” related beliefs and showed only a few indications of dysfunctional sexual beliefs overall. In terms of religion, 57.8% of participants self-reported as religious, and only 50.4% considered to belong to the Christian religion. This is widely different from the percentages published by INEC,<sup>11</sup> showing that 92% of Ecuadorians considered themselves to be religious, and of those, 80% were Catholic. This specific distribution of our sample might be due to the fact that the current sample was predominantly young, non-married, lived in urban areas, and university-level educated, which is not representative of Ecuador’s population in general. The online format of our survey and the advertising via Facebook and Instagram may have skewed our sample toward younger and

higher-educated people and did not allow us to reach people living in rural areas who do not have access to the Internet or computers.

Our results showed that 19% of the women in the current sample reported sexual dysfunctions. In men, less than 1% of the sample obtained a score that would indicate sexual dysfunction (based on the cutoff scores provided by the questionnaires). These percentages are lower than those reported in previous studies in other geographical regions,<sup>32,33</sup> and starkly different from those reported by Blümel and colleagues,<sup>21</sup> showing that 98% of participating women from Quito, Ecuador had sexual dysfunction. It is worth emphasizing that the latter study focused on middle-aged women, whereas the average age of our participants was 26 years and most participants were highly educated. Evidence has shown that the prevalence of sexual dysfunction increases with age and that education can act as a protective factor regarding sexual dysfunctions.<sup>21,22,33,34</sup> It is yet important to note that the cutoff scores of the FSFI and IIEF are based on Western populations, and may, therefore, not be directly transferable to non-Western populations. It is also plausible that the sociodemographic characteristics of the current sample were responsible for the lower incidence of sexual dysfunctions than what would be expected in the general population. Unfortunately, the sample was unevenly distributed between genders (26.5% men), making it difficult to accurately compare the incidence of sexual dysfunctions between men and women.

### Determinants of Sexual Function and Satisfaction

We found that female sexual function was predicted by how sexually and relationally satisfied a woman felt and the extent to which she has internalized sexually conservative beliefs and sexual double standards. Our results align with previous literature,<sup>9</sup> showing that sexual satisfaction is an important determinant of sexual function and that relationship satisfaction may act as a buffer for developing sexual function problems.<sup>35</sup> Furthermore, given that sexual function is composed of both physiological (eg,

lubrication) and subjective (eg, feeling aroused) responses, it is likely that the subjective experience of low sexual satisfaction is associated with a higher rate of sexual dysfunctions.<sup>36</sup> Regarding the role of dysfunctional sexual beliefs, our results correspond with the findings of Nobre and Pinto-Gouveia,<sup>19</sup> demonstrating that dysfunctional beliefs may contribute to female sexual dysfunctions. It is plausible that thinking in more sexually conservative terms and believing that sexual pleasure is a sin will restrict women's expression of sexual desire and arousal and prevent them from experiencing a full-blown sexual response. Note that we did not find a similar association between dysfunctional beliefs and sexual function in men, which contradicts previous work.<sup>20</sup> In general, macho beliefs are assumed to be a strong predictor of sexual dysfunctions, mainly erectile problems, because such beliefs would induce performance demand, failure anxiety, and self-monitoring. The latter would distract men from attending to sexual stimulation, resulting in lower sexual (ie, erectile and orgasmic) responses.<sup>20</sup> The fact that we did not find support for the role of dysfunctional beliefs in men is probably due to our young, sexually healthy sample of men. Regarding male sexual function, only sexual satisfaction showed a significant association. This corresponds with previous literature<sup>37</sup> showing that feeling less satisfied with the relationship can have a negative impact on sexual function.

When examining the individual, relational, and sociocultural determinants of female sexual satisfaction, a significant association was found with sexual function, relationship satisfaction, and sexual dysfunctional beliefs. Similar to sexual function, we found that conservative beliefs were associated with female sexual satisfaction, confirming the idea that restrictive beliefs about sexuality may prevent women from experiencing sexual pleasure, and thus, satisfaction. With regard to men's sexual satisfaction, we found that only sexual function and relationship satisfaction showed a significant association. These findings correspond with previous work showing that sexual satisfaction is associated with sexual responses, intimate relationships, and beliefs.<sup>10</sup> Interestingly, the sexual satisfaction of men, whose sexual behavior is generally described as being individually rather than relationally determined, was found to depend on relational variables as well. This fits with other research<sup>38</sup> questioning the traditional sexual perspective on men by demonstrating that male sexual responding is predicated on the relationship context in the same way as women.

In general, most of our findings correspond with the previous theoretical and empirical literature. Nevertheless, one of our findings is puzzling: the internalization of sexual double standards was positively associated with female sexual function. Based on the previous literature,<sup>39</sup> the opposite was expected: a negative relationship between sexual double standards scores and sexual function. In order to better understand this finding, it is important to consider that a large percentage of women's responses ranged from negative values to zero. This implies that our results may potentially indicate that women who have no sexual double standards at all (score of zero), rather than having

sexual double standards "beneficial to women" (negative values), show better sexual functioning. Yet, we need to interpret this result with caution, given the low reliability of the scale in the current study and the need for replication in future studies with a more diverse sample.

Several variables showed no significant associations with male and female sexual function and satisfaction. Religion, education, income, and erotophobia-erotophilia were not significantly associated with sexual function nor satisfaction, regardless of gender. These findings do not support our initial hypothesis about the effect of sociodemographic variables on sexual function and satisfaction.<sup>22</sup> Similarly, the lack of significant association with erotophobia-erotophilia suggests that, at least in certain populations, the effective evaluation of sexual stimuli might not be as influential to sexual function and satisfaction as reported in previous studies.<sup>17</sup>

## Gender Differences

Although the distribution of our sample, being disproportionately female, did not allow a direct test of gender differences, we do want to describe some general observations regarding gender-related differences. First, we found that women's sexual function and satisfaction were determined by more variables than men's sexual function and satisfaction. Furthermore, sexual dysfunctional beliefs and sexual double standards showed an association with sexual responses only in women, suggesting that the role of cognition in sexual responding varies as a function of gender. Finally, while in women, relationship satisfaction was associated with both sexual function and satisfaction, in men, it was associated only with sexual satisfaction. More research is needed to further explore these gender differences. In general, we might conclude that women's sexuality is more strongly influenced by contextual factors than men's sexuality, and therefore, determined by a larger variety of variables. This conclusion has been supported by previous research<sup>38,39</sup> ascribing an important role in contextual factors in explaining female sexuality. Interestingly, however, both men and women showed a significant association between relationship and sexual satisfaction, which fits with previous work.<sup>38</sup>

Elaborating on the role of context, we must also take into account the specific social context in which this study took place. Initial evidence has shown that the quarantine period due to the COVID pandemic has a large impact on sexual function, mainly in women.<sup>40,41</sup> Hence, it could be that women and men experience the effect of quarantine differently. Our results showed that only the perceived effect of quarantine on the relationship, and not the perceived effect of quarantine on sex life, was associated with female sexual satisfaction. For female sexual function and male sexual function and satisfaction, the "quarantine effect" variables showed no significant association. When taking a gender lens on the pandemic, there might be an increased risk for women to suffer from its psychosocial and systemic consequences. Women more

frequently serve as the primary caregivers within a household, increasing the burden and stress they experience when combining work and children. There is also an increased risk of domestic abuse and violence, which is most often directed toward women. All these factors may cause the impact of the pandemic on sexuality to be larger in women than in men.<sup>42</sup>

### Limitations

The results from this study should be interpreted with caution because there are a few limitations that need to be addressed in future research. First of all, due to the COVID-19 mandatory lockdown in Ecuador during the period of data collection, we changed the timeframe of the Female Sexual Function Index and the International Index of Erectile Dysfunction from 4 weeks to 6 months. This decision was made to avoid inaccurate results regarding sexual activity, given that, in Ecuador, most non-married couples do not cohabit. The current situation may have, however, affected the responses. Recent experiences are bound to interfere with our recollection of previous experiences. Therefore, it is possible that being physically separated from their partners during the survey produced less valid responses. In relation to the latter, it is worth emphasizing that a very high percentage of participants were young, non-married, and not cohabitating, as well as highly educated and living in urban areas. We must be cautious not to generalize these results to populations with different sociodemographic characteristics.

The possibility of a social desirability bias should also be mentioned. This could go both ways; participants choosing responses to seem more “conservative” if thinking this is the desired response, or participants choosing responses to seem more “modern” or “open” if thinking this is the desired response.<sup>43,44</sup> Considering that our sample was comprised of mostly young adults, there might be an implicit pressure to choose answers that align with “modern” and more “healthy” beliefs. Last, as in most sex research, the sample of voluntary participants may be biased to participants that already feel more comfortable with topics related to sexuality than the average Ecuadorian.<sup>45</sup> This could skew the results to appear less traditional than what may be true for the general population of Ecuador.

As mentioned previously, our sample had an unequal distribution of men and women. This is not ideal, as it limits the possibility of accurately comparing results between genders. Future research should strive toward an equal percentage of male and female participants in order to allow gender comparisons and lead to more precise information on gender differences regarding determinants of sexual function and satisfaction. An additional limitation of the current study is the low reliability of the Sexual Double Standards scale (Cronbach’s alpha 0.447), which implies that the results on this scale should be interpreted with caution. Finally, it should be emphasized that the data of the present study are cross-sectional, which does not allow any causal conclusions.

### CONCLUSION

The current study provided support for the hypothesis that, in Ecuador, sexual function and satisfaction are inversely related to markers of sexual conservatism and are determined by individual and relational factors within a specific cultural context. Considering the limited research on sexuality in non-WEIRD (Western, Educated, Industrialized, Rich, and Democratic) countries, particularly for non-prevention-related topics, the present study provides novel and useful information on the individual, relational, and sociocultural determinants of sexual function and satisfaction within the Latin American context. More research is needed to better understand the impact of cultural context and potential gender differences regarding the determinants of various aspects of sexuality.

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### STATEMENT OF AUTHORSHIP

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### REFERENCES

1. Dworkin SL, Lerum K, Zakaras JM. Sexuality in the global South: 50 Years of published research in the Journal of sex research- inclusions, Omissions and future Possibilities. *J Sex Res* 2016;2016:1059-1064.
2. Araujo K, Pietro M. Estudios sobre sexualidad en América Latina. *Ecuador: FLACSO* 2008:25-41.
3. Stephenson KR, Meston CM. The Conditional importance of sex: exploring the association between sexual well-being and life satisfaction. *J Sex Marital Ther* 2015;41:25-38.
4. Davison SL, Bell RJ, LaChina M, et al. The relationship between self-reported sexual satisfaction and general well-being in women. *J Sex Med* 2009;6:2690-2697.
5. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. Arlington, VA: Author; 2013.
6. Thomas HN, Thurston RC. A biopsychosocial approach to women’s sexual function and dysfunction at midlife: a narrative review. *Maturitas* 2016;87:49-60.

7. Birnbaum GE, Reis HT, Mizrahi M, et al. Intimately connected: the importance of partner responsiveness for experiencing sexual desire. *J Pers Soc Psychol* 2016;111:530-546.
8. Hiew DN, Halford WK, van de Vijver FJR, et al. Communication and relationship satisfaction in Chinese, Western, and intercultural Chinese–Western couples. *J Fam Psychol* 2016;30:93-202.
9. Rosen R, Brown C, Heiman J, et al. The Female Sexual Function Index (FSFI): a multidimensional self-report instrument for the assessment of female sexual function. *J Sex Marital Ther* 2000;26:191-208.
10. Sánchez-Fuentes MM, Santos-Iglesias P, Sierra JC. A systematic review of sexual satisfaction. *Int J Clin Health Psychol* 2014;14:67-75.
11. Instituto Nacional de Estadísticas y Censos (INEC) [National Institute of Statistics and Census]. INEC presenta por primera vez estadísticas sobre religión. Ecuador: INEC 2012.
12. Castillo LG, Perez FV, Castillo R, et al. Construction and initial validation of the marianismo beliefs scale. *Couns Psychol Q* 2010;23:163-175.
13. Macintyre AKJ, Montero Vega AR, Sagbakken M. “Sexuality? A million things come to mind”: reflections on gender and sexuality by Chilean adolescents. *Reprod Health Matters* 2015;23:85-95.
14. Marván ML, Espinosa-Hernández G, Orihuela-Cortés F. Perceived consequences of first intercourse among Mexican adolescents and associated psychosocial variables. *Sex Cult* 2018;2018:1490-1506.
15. López-Alvarado S, Van Parys H, Cevallos-Neira A, et al. Latin American women’s beliefs, Views and ideas about sexual Assertiveness: a focus group study in Cuenca (Ecuador). *J Sex Res* 2020;57:307-321.
16. Fisher WA, Byrne D, White LA, et al. Erotophobia-erotophilia as a dimension of personality. *J Sex Res* 1988;2:123-151.
17. van Lankveld J, Wolfs K, Grauvolg A. Gender differences in the relationship of sexual functioning with implicit and explicit sex linking and sex waiting: a community sample study. *J Sex Res* 2018;00:1-13.
18. Nobre PJ, Pinto-Gouveia J, Allen Gomes F. Sexual Dysfunctional Beliefs Questionnaire: an instrument to assess sexual dysfunctional beliefs as vulnerability factors to sexual problems. *Sex RelatshTher* 2003;18:171-204.
19. Nobre PJ, Pinto-Gouveia J. Dysfunctional sexual beliefs as vulnerability factors for sexual dysfunction. *J Sex Res* 2006;43:68-75.
20. Peixoto MM, Nobre PJ. Dysfunctional sexual beliefs: a comparative study of heterosexual men and women, gay men, and lesbian women with and without sexual problems. *J Sex Med* 2014;11:2690-2700.
21. Blümel JE, Chedraui P, Baron G, et al. Sexual dysfunction in middle-aged women: a multicenter Latin American study using the Female Sexual Function Index. *Menopause* 2009;16:1139-1148.
22. Barrientos JE, Páez D. Psychosocial variables of sexual satisfaction in Chile. *J Sex Marital Ther* 2006;32:351-368.
23. Byers SE. Relationship satisfaction and sexual satisfaction: a longitudinal study of individuals in long-term relationships. *J Sex Res* 2004;45:113-118.
24. Vowels LM, Mark KP. Relationship and sexual satisfaction: a longitudinal actor-partner independence model approach. *Sex Relatsh Ther* 2020;35:46-59.
25. Gadassi R, Bar-Nahum LE, Newhouse S, et al. Perceived partner responsiveness Mediates the association between sexual and Marital satisfaction: a daily diary study in Newlywed couples. *Arch Sex Behav* 2016;45:109-120.
26. Vallejo-Medina P, Marchal-Bertrand L, Gómez-Lugo M, et al. Adaptation and validation of the brief sexual opinion survey (SOS) in a Colombian sample and Factorial Equivalence with the Spanish version. *PLoS One* 2016;11:e0162531.
27. Sierra JC, Moyano N, Vallejo-Medina P, et al. An abridged Spanish version of Sexual Double Standard Scale: Factorial structure, reliability and validity evidence. *Int J Clin Health Psychol* 2018;18:69-80.
28. Strizzi J, Fernández-Agís I, Alarcón-Rodríguez R, et al. Adaptation of the new sexual satisfaction scale- short form into Spanish. *J Sex Marital Ther* 2016;42:579-588.
29. Vallejo-Medina P, Pérez-Durán C, Saavedra-Roa A. Translation, adaptation, and Preliminary validation of the female sexual function index into Spanish (Colombia). *Arch Sex Behav* 2018;47:797-810.
30. Hernández R, Thieme T, Araos F. Adaptacion y analisis psicometrico de la version española del Índice Internacional de Funcion Erectil (IIEF) en poblacion chilena. *Terapia Psicológica* 2017;2017:223-230.
31. Funk JL, Rogge RD. Testing the Ruler with item response theory: increasing precision of measurement for relationship satisfaction with the couples satisfaction index. *J Fam Psychol* 2007;21:572-583.
32. Berman JR, Berman L, Goldstein I. Female sexual dysfunction: incidence, pathophysiology, evaluation and treatment options. *Urol J* 1999;54:385-391.
33. Feldman HA, Goldstein I, Hatzichristou DG, et al. Impotence and its medical and psychosocial correlates: results of the Massachusetts male aging study. *J Urol* 1994;151:54-61.
34. Jaafarpour M, Khani A, Khajavikhan J, et al. Female sexual dysfunction: prevalence and risk factors. *J Clin Diag Res* 2013;72:2877-2880.
35. Witting K, Santtila P, Alanko K, et al. Female sexual function and its associations with number of children, pregnancy, and relationship satisfaction. *J Sex Marital Ther* 2008;34:89-106.
36. Basson R, Berman J, Burnett A, et al. Report of the international consensus development conference on female sexual dysfunction: Definitions and classifications. *J Urol* 2000;163:888-893.
37. Rosen R, Riley A, Wagner G, et al. The international index of erectile function (IIEF): a multidimensional scale for assessment of erectile dysfunction. *Urol J* 1997;49:822-830.

38. Dewitte M, Mayer A. Exploring the link between daily relationship quality, sexual desire, and sexual activity in couples. *Arch Sex Behav* 2018;47:1675-1686.
39. Baumeister RF. Gender differences in erotic plasticity: the female sex drive as socially flexible and responsive. *Psychol Bull* 2000;126:347-374.
40. Yuksel B, Ozgor F. Effect of the COVID-19 pandemic on female sexual behavior. *Int J Gynecol Obstet* 2020;150:98-102.
41. Schiavi MC, Spina V, Zullo MA, et al. Love in the time of COVID-19: sexual Function and Quality of Life analysis during the social distancing measures in a group of Italian reproductive-age women. *J Sex Med* 2020;17:1407-1413.
42. Gausman J, Langer A. Sex and gender Disparities in the COVID-19 pandemic. *J Womens Health (Larchmt)* 2020; 29:465-466.
43. O'Sullivan LF. Challenging assumptions regarding the validity of self-reported measures; the special case of sexual behavior. *J Adolesc Health* 2008;42:207-208.
44. Catania JA, Gibson DR, Chitwood DD, et al. Methodological problems in AIDS behavioral research: influences on measurement error and participation bias in studies of sexual behavior. *Psychol Bull* 1990;108:339-362.
45. Strassberg DS, Lowe K. Volunteer bias in sexuality research. *Arch Sex Behav* 1995;24:369-382.