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Associations between sexual beliefs and couples' sexual well-being

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ASSOCIATIONS BETWEEN SEXUAL BELIEFS AND COUPLES' SEXUAL WELL-BEING

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Resumo

Existe uma associação estabelecida, encontrada e estudada previamente, entre crenças sexuais negativas – crenças sobre aspetos da sexualidade que têm fortes raízes sociais/ culturais, mas que muitas vezes são irrealistas e exageradas, mas aceites/ internalizadas pelos indivíduos – e o bem-estar sexual de um indivíduo. Particularmente, as crenças femininas relacionadas à idade, o conservadorismo sexual masculino e feminino e as crenças de "macho latino" demonstraram ser fatores de risco e manutenção de dificuldades sexuais tanto na comunidade quanto nas populações clínicas. As análises deste estudo foram realizadas com uma abordagem diádica, sendo utilizado o Modelo de Interdependência Ator-Parceiro. Testamos se o ter mais crenças sexuais negativas estava associado ao próprio bem-estar sexual, bem como ao do parceiro (ou seja, menor funcionamento sexual, menor satisfação sexual e maior *distress* sexual). U m total de 140 casais (faixa etária: 18-55 anos) completaram medidas validadas de autorrelato on-line avaliando crenças sexuais, função sexual, satisfação sexual e *distress* sexual. Os resultados mostraram uma associação entre crenças de conservadorismo masculino e menores níveis de satisfação sexual, funcionamento sexual e maiores níveis de *distress* sexual (efeitos de ator). No que concerne as crenças 'Macho latino', estas estão associadas a maiores níveis de satisfação e funcionamento sexual (efeitos de ator). Foram também encontradas associações entre crenças de conservadorismo feminino e menor satisfação sexual, e entre crenças 'Macho latino' e níveis mais elevados de satisfação sexual (efeitos de parceiro). No geral, os resultados destacam uma ligação entre as crenças sexuais do indivíduo e o seu bem-estar sexual, bem como o do seu parceiro.

Palavras-Chave: Bem-estar sexual; crenças sexuais; funcionamento sexual; *distress* sexual; satisfação sexual; APIM; casais.

Abstract

There is an established association, found and previously studied, between negative sexual beliefs – beliefs about aspects of sexuality that have strong social/cultural roots, but which are often unrealistic and exaggerated, but accepted/internalized by individuals – and sexual well-being of an individual. In particular, female age-related beliefs, male and female sexual conservatism, and "macho" beliefs have been shown to be risk factors for and maintenance of sexual difficulties in both community and clinical populations. The analyzes of this study were carried out with a dyadic approach, using the Actor-Partner Interdependence Model. We tested whether having more negative sexual beliefs was associated with one's own as well as partner's sexual well-being (ie, lower sexual functioning, lower sexual satisfaction, and higher sexual distress). A total of 140 couples (age range: 18-55 years) completed validated online self-report measures assessing sexual beliefs, sexual function, sexual satisfaction, and sexual distress. The results showed an association between beliefs of male conservatism and lower levels of sexual satisfaction, sexual functioning and higher levels of sexual distress (actor effects). Regarding 'Macho' beliefs, these are associated with higher levels of satisfaction and sexual functioning (actor effects). Associations were also found between female conservatism beliefs and lower sexual satisfaction, and between 'Macho' beliefs and higher levels of sexual satisfaction (partner effects). Overall, the results highlight a link between an individual's sexual beliefs and their sexual well-being, as well as that of their partner.

Key words: Sexual well-being; sexual beliefs; sexual functioning; sexual distress; sexual satisfaction; APIM; couples.

Résumé

Il existe une association établie entre les croyances sexuelles négatives – croyances sur des aspects de sexualité qui ont de fortes racines sociales/culturelles, souvent irréalistes, mais acceptées par les individus – et le bien-être sexuel des individus. En particulier, les croyances féminines liées à l'âge, le conservatisme sexuel masculin/ féminin et les croyances 'Macho' se sont révélés être des facteurs de risque et maintien des difficultés sexuelles dans les populations communautaires et cliniques. Les analyses de cette étude ont utilisé le modèle d'interdépendance acteur-partenaire. Nous avons testé si le fait d'avoir plus de croyances sexuelles négatives était associé à son propre bien-être sexuel ainsi qu'à celui de son partenaire (c'est-à-dire un fonctionnement et satisfaction sexuels plus faibles et une détresse sexuelle plus élevée). Un total de 140 couples (tranche d'âge : 18-55 ans) ont rempli des mesures d'auto-évaluation en ligne validées évaluant les croyances sexuelles, la fonction, satisfaction et la détresse sexuelle. Les résultats ont montré une association entre les croyances du conservatisme masculin et des niveaux inférieurs de satisfaction et de fonctionnement sexuels et des niveaux plus élevés de détresse sexuelle (effets d'acteur). Quant aux croyances 'Macho', elles sont associées à niveaux de satisfaction et fonctionnement sexuel plus élevés (effets d'acteur). Des associations ont été trouvées entre croyances conservatrices féminines et plus faible satisfaction sexuelle, et entre croyances 'Macho' et niveaux élevés de satisfaction sexuelle (effets de partenaire). Globalement, résultats mettent en évidence un lien entre les croyances sexuelles d'un individu et son bien-être sexuel, ainsi que celui de son partenaire.

Mots-clés : Bien-être sexuel ; croyances sexuelles; fonctionnement sexuel; détresse sexuelle; satisfaction sexuelle; APIM ; des couples.

Introduction

Sexual well-being is an important component of overall health (Diamond & Huebner, 2012; Mitchell et al., 2021), being recognized by the World Health Organization as consisting of "positive and pleasurable experiences of the physical, emotional, mental, and social aspects of sexuality" (World Health Organization, 2002). The importance of sexual well-being is further reinforced by its contributions to higher levels of happiness and quality of life of individuals and to the quality and longevity of relationships (Diamond & Huebner, 2012; Mitchell et al., 2021). However, sexuality is still a taboo topic, even though it is an important aspect in people's lives (Apay et. al, 2013).

Therefore, sexual well-being is usually conceptualized as comprising three key dimensions: sexual satisfaction (i.e., the evaluation that the individual makes when considering all positive and negative aspects of one's sexual relationship; Lawrance & Byers, 1995), sexual functioning (i.e., absence of difficulties in moving through the stages of sexual desire, arousal, and orgasm; Fielder, 2013), and sexual *distress* (i.e., negative emotions related to one's sexual experiences; Hendrickx et al. 2016).

Sexual beliefs as a vulnerability factor for lower sexual well-being

Sexual beliefs are ideas about sexuality without scientific foundation, often unrealistic and exaggerated, but accepted/internalized by individuals, usually with strong social and cultural roots (Apay et. al, 2013; Nobre & Pinto-Gouveia, 2006). These culturally based beliefs comprise ideas we have about ourselves, others, and the world that help us interpret events, behaviors and/or emotions (Nobre et al., 2003), and that will influence the attitudes and behaviors of the individual. Specifically, sexual beliefs that relate to sexual conservatism, in both men and woman, female-age related beliefs, and 'Macho' beliefs, have shown to be strongly implicated in individual's sexual well-being (Nobre, 2023). Sexual beliefs have a negative effect on several dimensions of sexual well-being and are thought to be important vulnerability factors for the development and maintenance of sexual difficulties (Nobre & Pinto-Gouveia, 2006), at least at the intra-individual level. At this level and within populations with sexual dysfunction, there are studies that indicate the presence of a greater number of dysfunctional sexual beliefs. It was reported in a study by Baker

and DeSilva (1988) that men with sexual dysfunction showed significantly more beliefs in sexual myths compared to men who did not present sexual dysfunction (Adams et al., 1996; Tavares et al., 2020). In other studies, it was also found that these beliefs were predisposing factors for sexual dysfunction, both in women and in men (Nobre et al., 2021).

Regarding the general population, studies indicate that individuals who hold stronger conservatism and age-related sexual beliefs also report lower levels of sexual functioning as well as lower sexual desire (Nobre et al., 2021). In terms of sexual satisfaction, several authors have studied the relationship between sexual beliefs and sexual satisfaction (Abdolmanafi et al., 2018), and results have shown that conservative sexual beliefs are associated with lower sexual satisfaction (Vasconcelos et al., 2021; Byers & Rehman, 2013). Furthermore, ageist sexual attitudes are also negatively linked to both older women's and older men's sexual satisfaction (Graf & Patrick, 2014).

Although there are some studies that examine the association between sexual beliefs and two of the three main dimensions of sexual well-being addressed in this study, as discussed above, to the best of our knowledge there is no prior study examining the link between sexual beliefs and sexual *distress*. Studying the link between these variables is important because if one has negative sexual beliefs, this may influence their behavior, cognitions, and reactions when it comes to having sexual interactions with their partner (Dewitte, 2014). Thus, holding negative sexual beliefs can lead to an individual's sexual *distress*, but it can also contribute to the sexual *distress* of the partner.

The cognitive-emotional model developed by Nobre (Nobre, 2023) is a useful theoretical framework to understand the link between sexual beliefs and sexual well-being outcomes (i.e., sexual functioning, sexual satisfaction, sexual *distress*). Nobre developed and tested a conceptual model of sexual dysfunction in men and women based on prior research findings, and the structure of this model is based on cognitive theory. Barlow found that individuals with sexual dysfunction focus their attention on negative automatic thoughts regarding the social consequences of not performing and failure expectancies or other non-erotic concerns (Nobre, 2023). Following this idea, Nobre and Pinto-Gouveia reported corroborating evidence of the role of cognitive factors on sexual dysfunction (Nobre & Pinto-Gouveia, 2006). Something to keep in mind about this model is that it is not unidirectional, such that sexual functioning also

influences the activation of cognitive schemas in future sexually unsuccessful situations. The lower the sexual functioning, the greater the probability of negative schema activation in future situations, which will end up feeding this cycle (Nobre, 2010).

Besides sexual beliefs, individuals with sexual dysfunction also tend to present automatic thoughts that have a negative influence in their sexuality, thoughts related to failure (e.g., "I'm not satisfying my partner") or lack of erotic thoughts. Automatic thoughts are images or cognitions presented by individuals as a result of cognitive schemas or beliefs, which are activated automatically during a particular event (Beck, 1996). Its activation guides the interpretation and meaning assigned to a particular situation, ending up in mobilizing a set of coherent cognitive (automatic thoughts/ beliefs) and emotional responses, and influence the behavioral reactions of the individual (Nobre, 2009). Whenever a sexual event fulfills the rules defined by the sexual belief, congruent cognitive schemas are activated (Nobre, 2010). Automatic thoughts can include thoughts that are related with performance (for example, erection concerns, e.g., "I must be able to have intercourse", Nobre, Pinto-Gouveia, & Gomes, 2003) and body image concerns (Tavares, Moura, & Nobre, 2019), which have been associated with negative physical, psychological, and relational outcomes (Davison & McCabe, 2005; Zurbriggen, Ramsey & Jaworski, 2011; Tavares, et al., 2022), as well as with sexual dysfunction (Nobre & Pinto-Gouveia, 2006).

Ultimately, the activation of these cognitive beliefs elicits negative automatic thoughts and negative emotions, impairing the sexual response (Abdolmanafi et al., 2016), which can lead to higher levels of sexual *distress* and lower sexual satisfaction due to cognitive distraction. This can happen because the activation of negative schemas would drive the development of automatic thoughts oriented to stimuli associated with failure and its possible negative consequences (decreasing the focus on erotic stimuli), as well as negative emotional responses (Nobre, 2009).

This means that when an individual presents negative automatic thoughts and beliefs, the focus is no longer on sexual stimuli but in the content of said beliefs and thoughts, which will have an effect on the individual's sexual functioning, possibly causing sexual *distress* (on the person but also on the partner, that will observe and draw conclusions from observed behaviors and create cognitions/thoughts/beliefs and behaviors in response).

Sexual beliefs in a dyadic context

Although much has already been studied about sexual beliefs and their impact on the individual, to the best of our knowledge there is no study exploring whether these effects also occur inter-individually (i.e., between members of a couple), although sexuality is a markedly interpersonal experience (Gagnon et al., 2001; Waite et al., 2009; Willets et al., 2004). As such, it remains to be clarified how sexual beliefs, as a variable of individual vulnerability for the development or maintenance of sexual difficulties, may also be a factor of vulnerability at the dyadic level. Indeed, sexuality is influenced by one's context and one's personal relationships. Masters and Johnson (1970) had already emphasized that the couple—and not the individual—is the proper unit of studying and treating sexuality, as sexual problems are typically experienced in relational environments. In fact, one person's *distress* is often predicated on the relational setting and on the reactions of the partner (Dewitte, 2014).

Couple members influence each other bidirectionally, and this can happen without conscious effort or awareness, such that this interdependence between partners functions both at the psychological and at physiological level. This means that, for example, through behavioral and communicative responses, the partner may unknowingly reinforce or perpetuate the other partners' dysfunctional sexual behavior contributing to increased sexual dysfunction (Bergeron et al., 2011; Dewitte, 2014).

The current study

Due to these existing gaps in the literature on the inter-individual impact of sexual beliefs, this study aims to expand knowledge in this area and provide data that may be relevant to and inspire future studies. Our main objective is to understand the effect of individual sexual beliefs on the couple's sexual well-being, that is, to understand how these beliefs can have an effect on dimensions of both partners' sexual well-being (i.e., sexual satisfaction, sexual functioning, sexual *distress*).

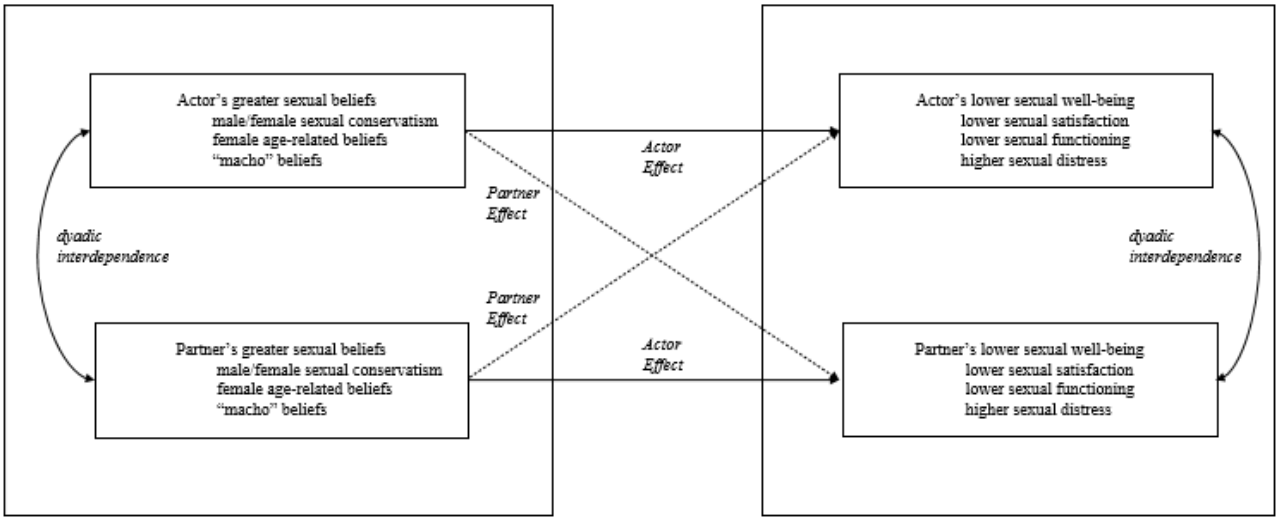
The analyses in this study were carried out using a dyadic approach, thus seeking to help fill a scientific gap in this field. To do so, we used the Actor–Partner Interdependence Model (APIM: Kashy & Kenny, 1999; Kenny, 1996). The APIM is designed to measure interdependence within interpersonal relationships. There is interdependence in a relationship when one person's emotions, cognitions, or behaviors affect the emotions, cognitions, or behaviors of a partner (Kelley & Thibaut, 1978; Kelley, Holmes, Kerr, Reis, Rusbult, & Van Lange, 2003). A

consequence of interdependence is that observations of two individuals are linked or correlated such that knowledge of one person's score provides information about the other person's score.

As previously mentioned, this study is going to help fill a scientific gap in the matter of dyadic analysis, particularly, in the field of sexuality and sexual beliefs and their influence on couples. And the study of couples, instead of individuals, is important in the sense that it helps psychologists, researchers, and even the public to better understand and explain the effect that some variables have on one another. Based on all the information presented and on prior studies (e.g., Nobre et al., 2022; Vasconcelos et al., 2021; Zarbo, 2019), we hypothesized that:

Individuals who endorse greater negative sexual beliefs (viz., men and woman sexual conservatism, female-age related beliefs, and 'Macho' beliefs) would also report lower sexual well-being (i.e., lower sexual satisfaction, lower sexual functioning, and higher sexual *distress*) at the individual level (i.e., actor-effects). We anticipate that these effects will also be present at the interpersonal level (i.e., partner effects), and these effects will be examined in an exploratory manner.

Figure 1. The current study



1. Method

1.1 Participants

The final sample included 140 dyads (i.e., 280 individuals; 149 female, 126 male and 3 non-binary, with 41 couples being same sex partners), with ages ranging

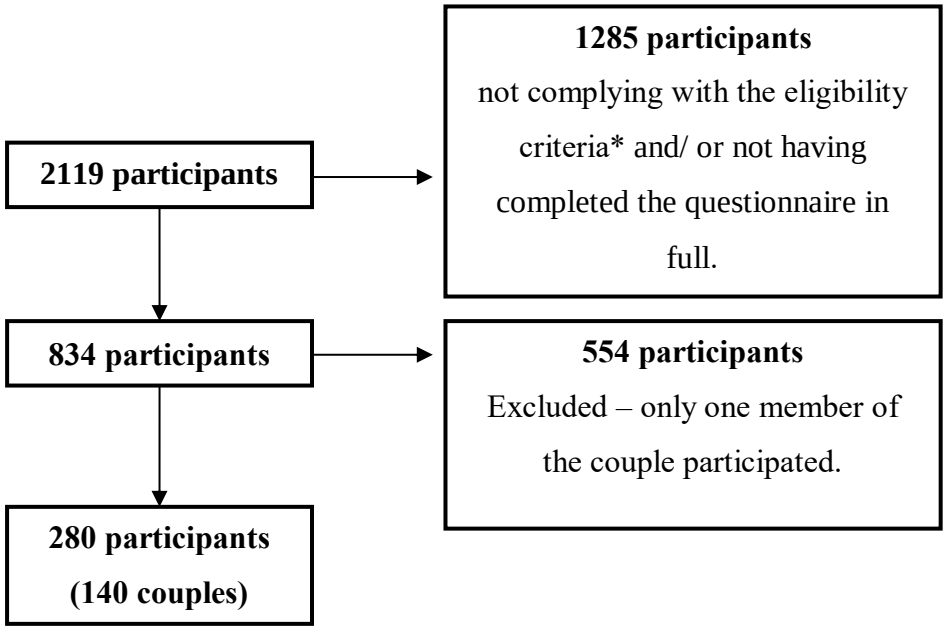
from 18 to 55. Demographic data are summarized in Table 1.

The inclusion criteria were as follows: participants were required to have access to the internet and a device to complete the survey, being at least 18 years of age, being able to understand written Portuguese language, and in a relationship for at least six months. To be eligible for the study, both partners needed to complete the survey. As for exclusion criteria, they were the following: either partner being impaired by an unmanaged mental or physical illness at the time of participation and/or either partner self-reporting an alcohol or drug addiction (as indicated by self-report), as prior studies show that these conditions have an effect on sexual well-being (Cashell-Smith et al., 2007; Connor et al., 2015).

Sample size was estimated via an a-priori power analysis conducted on November 30, 2022. This was done using the APIMPowerR ShinyApp (Ackerman et al., 2016). The effect sizes we detected power for were drawn from prior literature on sexual beliefs in community samples of individuals (Nobre et al., 2022; Vasconcelos et al., 2021), but no studies to our knowledge have, to date, examined sexual beliefs in couples, precluding us from drawing effect sizes for partner effects. We therefore assumed conservative estimates including a correlation between scores from both members of the couple of medium (r = .30) size and anticipated partner effects of small (B = 0.15) size (Cohen, 1988). Estimates utilized in the power simulation are conservative in that they are smaller than minimum effect sizes and correlations between partners found in literature of similar constructs (e.g., sexual destiny and growth beliefs; Raposo et al., 2021; Rossi et al., 2022). In the sample size calculation, we assumed an alpha of .05. Results indicated that the necessary sample size would be of 139 dyads to have adequate power (i.e., 0.80) to detect actor and partner effects.

Figure 1 depicts information on participant's inclusion flow. Of the 2119 total responses, 1285 were not included in the final sample due to not complying with the eligibility criteria and/or not having completed the questionnaire in full, resulting in a sample of 554. After checking all the participants and their corresponding partners and eliminating the ones that didn't form a dyad, the final sample size included 140 dyads (280 participants).

Figure 2. Flow diagram of participants' inclusion



*To confirm eligibility, several sociodemographic items in the survey overlapped with the eligibility criteria and were compared with participants' own (and their partners') responses.

Table 1

Descriptive statistics for sociodemographic variables.

Variable	N	%
Age		
18 to 25	185	66.2
26 to 30	49	17.5
31 to 35	16	5.7
36 to 40	11	3.9
41 to 45	9	3.3
46 to 50	6	2.3
51 to 55	4	1.5
Gender		
Female	149	53.6
Male	126	45
Non-Binary	3	1.1
Nacionality		
Portuguese	261	94.5
Brazilian	15	5.5
Residency		
North	90	32.4
PMA*	151	54.3
Center	25	9
LMA*	8	2.9

Islands**	4	1.4
Education (in years)		
7 to 15	127	45.4
16 to 20	120	43
21 to 25	24	8.7
Sexual Orientation		
0 (Exclusively Heterosexual)	182	65.2
1	32	11.5
2	15	5.4
3	28	10
4	8	2.9
5	6	2.2
6 (Exclusively Homosexual)	8	2.8

*PMA: Porto Metropolitan Area; LMA: Lisbon Metropolitan Area
**Azores and Madeira

1.2. Procedure

The current study procedures were approved by the Ethics Committee of the Faculty of Psychology and Educational Sciences of University of Porto before data collection. The protocol of the study was pre-registered before data collection and analysis and can be found on the study's Open Science Framework webpage: https://osf.io/94573.

The questionnaire protocol was made available online, through a link that redirected participants to the questionnaire (which was answered on the Qualtrics platform, which guarantees confidentiality as the data was stored on the server of the university), allowing participants to respond in the time and context they deem appropriate. This strategy increased the accessibility of participation and sampling diversity, while minimizing socially desirable responses that tend to be smaller in online questionnaires compared to data collected in person, particularly for more sensitive domains such as sexual issues (Pealer et al., 2001). All participants provided informed consent before participating in the study. The dyadic pairing (i.e., the matching between responses of both partners of a couple) was done through a personal code generated by the participants themselves, which was the only sociodemographic information collected, and which was kept only for this purpose.

The dissemination of the study was done through various electronic contact

networks, as well as through social media and the affixation of posters throughout the Faculty of Psychology and Educational Sciences of the University of Porto. Responses were confidential, identified only by a personal identification number assigned to it that was later erased from the dataset, the time required to complete the survey was between 15 to 20 minutes. Participation in the study was voluntary (participants could withdraw at any time without any consequence) and the nature of the study was clearly announced. Three attention verification questions were included throughout the protocol to identify non-attentive responders; if a participant did not respond correctly to two out of three of these items, their responses were excluded from analysis.

Participants were provided with contacts through which they could contact the researchers should they require any clarification. In addition, upon completion of the study, couples were provided with a list of online resources related to sexuality and relationships.

1.3. Measures

Demographics Information on participants' age, nationality, sex, gender, sexual orientation, education, income, and relationship characteristics (i.e., partner's gender, age, relationship status, and duration) were collected through self-report questions.

Sexual beliefs were measured using the Sexual Dysfunction Beliefs Questionnaire (SDBQ; Nobre et al., 2003), a valid and reliable self-report instrument that assesses a range of common beliefs about sexuality. The original questionnaire has a male and a female version, comprising the assessment of dimensions regarding male and female sexuality, respectively. To avoid participant burden, we included only those dimensions that have shown to be more strongly implicated in sexual well-being (Nobre & Pinto-Gouveia, 2006, 2008), as has been done in prior research (Nobre et al., 2021). As such, participants were asked to report on dimensions related to female conservative beliefs (9 items, e.g., "Masturbation is not a proper activity for respectable women"), male conservative beliefs (10 items, e.g., "Foreplay is a waste of time"), age-related female beliefs (5 items, e.g., "After menopause women lose their sexual desire"), and 'Macho' beliefs (7 items, e.g., "A real man has sexual intercourse very often"). Given the dyadic nature of this study, both partners of a couple were asked to report on these four dimensions. Each item is assessed using a

5-point Likert-type scale (1 = completely disagree to 5 = completely agree). These constructs were modeled as latent variables and higher scores will reflect greater endorsement of each dimension of sexual beliefs. The internal consistency in the present sample was α = .79.

Sexual satisfaction was measured using the 5-item Global Measure of Sexual Satisfaction (GMSEX; Lawrance & Byers, 1995; Pascoal & Narciso, 2006), validated for the Portuguese population. Participants responded to the prompt "How would you describe your overall sexual relationship with your partner during the last 4 weeks?" on a 7-point Likert scale regarding five bipolar pairs of words (e.g., "very bad" to "very good"; "very unsatisfying" to "very satisfying"). The construct was modeled as a latent variable and higher scores reflect greater sexual satisfaction. The internal consistency in the present sample was α = .91.

Sexual functioning was assessed using the Arizona Sexual Experiences Scale (ASEX; McGahuey et al., 2000; Ribeiro, 2019), a valid and reliable 5-item instrument that evaluates global aspects of sexual dysfunction and that can be used across different genders/sexes (McGahuey et al., 2000). This scale has been validated for the Portuguese population. The ASEX measures sexual functioning in areas such as sexual desire, arousal, vaginal lubrication/penile erection, ability to reach orgasm, and satisfaction from orgasm (e.g., "How strong is your sexual drive?", "How easily are you sexually aroused?"). Items are rated on a 6-point Likert scale (1 = extremely strong/extremely easy/quite rewarding to 6 = no sexual impulse/I never get excited/I can't reach an orgasm). This measure was chosen given the dyadic focus of the study and its suitability for sex/gender diverse samples. The construct was modeled as a latent variable and higher scores reflect greater sexual function. The internal consistency in the present sample for the male version was α = .70, and for the female version was α = .72.

Sexual distress was assessed using the valid and reliable 13-item Sexual Distress Scale Revised (SDS-R; DeRogatis, 2008; Tavares et al., 2022), which has been validated for use in the Portuguese population. Participants responded to the prompt "Please read each item carefully and check the box that best describes how often that problem has bothered you or caused distress over the last 4 weeks" regarding five items (e.g., "distressed about your sex life"). Items were rated on a 5-point Likert scale (1 = never to 5 = always). The construct was modeled as a latent variable and higher scores reflect greater sexual *distress*. The internal consistency in

the present sample was $\alpha = .93$

1.4. Analyses

Our dyadic hypotheses were tested using the Actor–Partner Interdependence Model (APIM; Cook & Kenny, 2005; Kashy & Kenny, 1999; Kenny, 1996) in order to account for the interdependence between couples' predictors and outcomes. APIM is a model of dyadic relationships that integrates a conceptual view of interdependence occurring in two-person relationships with the appropriate statistical techniques for measuring and testing it. The APIM is being increasingly used in the social sciences; for example, in studies of emotion (Butler, Egloff, Wilhelm, Smith, Erickson, & Gross, 2003), health (Butterfield, 2001), leisure activities (Berg, Trost, Schneider, & Allison, 2001), and communication competence (Lakey & Canary, 2002).

We conducted three separate models where we regressed the outcomes of interest (i.e., sexual satisfaction, sexual functioning, and sexual *distress*) on both partners' sexual beliefs (i.e., female conservative beliefs, male conservative beliefs, age-related female beliefs, and 'Macho' beliefs). All sexual beliefs subscales were examined as predictors in the model concurrently. Each of the four models included actor and partner predictor and outcome variables, as per the APIM, to enable the examination of actor and partner effects while accounting for the interdependence between each partner's predictors and outcomes. As per APIM recommendations (Cook & Kenny, 2005), predictors were grand mean centered before conducting the analyses.

As our recruitment was inclusive of couples of all genders/sexes, we randomized roles within the couple and treated dyads as indistinguishable (i.e., the actor effects and partner effects will each be specified as equal across members of the couples). An inverse transformation was implemented on sexual beliefs due to positive skewness of these variables (Bishara & Hittner, 2012).

2. Results

2.1. Sexual beliefs and sexual satisfaction

As for sexual beliefs related to male conservatism, results showed an actor effect, such that individuals who endorsed stronger sexual beliefs related to male conservatism also reported lower levels of own sexual satisfaction (B = -114.39, SE = 23.05, p < .001), but no partner effect was found (B = -10.31, SE = 23.05, p = .655). A similar direction of effect was also found when looking at sexual beliefs related to female conservatism, but this time as a partner effect, such that when an individual endorsed stronger female conservative beliefs, then their partner reported lower sexual satisfaction (B = -45.94, SE = 21.41, p = .033), whereas no actor effect was found (B = .26, SE = 21.41, p = .990).

In terms of sexual beliefs related to 'Macho' beliefs, we found two statistically significant results. Results showed an actor effect wherein individuals who endorsed stronger sexual beliefs related to 'Macho' beliefs also reported higher levels of own sexual satisfaction (B = 31.37, SE = 12.75, p = .015). We also found a partner effect wherein the more 'Macho' beliefs an individual endorsed, the higher the sexual satisfaction of their partner (B = 28.42, SE = 12.81, p = .028).

Regarding the association between age related beliefs and sexual satisfaction, no statistically significant results were found (actor effect: B = 7.53, SE = 5.66, p = .185; partner effect: B = -6.25, SE = 5.65, p = .270).

2.2. Sexual beliefs and sexual functioning

Regarding sexual functioning, results showed an actor effect wherein individuals who endorsed stronger sexual beliefs related to male conservatism also reported lower levels of own sexual functioning (B = -59.33, SE = 23.54, p = .012), but no partner effect was found (B = 7.46, SE = 23.54, p = .752).

Regarding the association between female conservative beliefs and sexual functioning, no results were statistically significant (actor effect: B = 8.23, SE = 20.89, p = .694; partner effect: B = -25.75, SE = 20.94, p = .220).

We also found an actor effect wherein individuals who endorsed stronger sexual beliefs related to 'Macho' beliefs also reported higher levels of own sexual functioning (B = 41.25, SE = 12.14, p < .001); the partner effect was not significant (B = 7.82, SE = 12.14, p = .520).

Regarding the association between age related beliefs and sexual functioning, no statistically significant results were found at an actor level (B = 7.54, SE = 5.66, p = .185) nor at a partner level (B = -6.25, SE = 5.65, p = .270).

2.3.Sexual beliefs and sexual distress

For sexual *distress*, results showed only one actor effect, such that individuals who endorsed stronger sexual beliefs related to male conservatism also reported lower levels of own sexual *distress* (*B* = -188.03, *SE* = 55.59, *p* < .001); the partner effect was not significant (*B* = -75.30, *SE* = 55.60, *p* = .117).

Regarding the association between female conservative beliefs and sexual *distress*, no statistically significant results were found (actor effect: *B* = -19.64 , *SE* = 51.17, *p* = .701; partner effect: *B* = 3.13, *SE* = 51.18, *p* = .951).

In terms of an association between 'Macho' beliefs and sexual *distress*, no statistically significant results were found (actor effect: *B* = -31.57, *SE* = 30.30, *p* = .299; partner effect: *B* = -37.55, *SE* = 30.44, *p* = .219).

Finally, and regarding the association between age related beliefs and sexual *distress*, no statistically significant results were found (actor effect: *B* = 8.47, *SE* = 13.62, *p* = .521; partner effect: *B* = 2.53, *SE* = 13.63, *p* = .853).

Table 2

APIM results for the association between sexual beliefs and main outcomes.

	Estimate	Std. Error	Sig.
Sexual Beliefs and Sexual Satisf.			
Conservatism (Male)[a]	**-114.392**	**23.048**	**<.001***
Conservatism (Male)[b]	-10.308	23.045	.655
Conservatism (Female)[a]	.258	21.406	.990
Conservatism (Female)[b]	**-45.937**	**21.408**	**.033***
'Macho' beliefs[a]	**31.374**	**12.748**	**.015***
'Macho' beliefs[b]	**28.417**	**12.808**	**.028***
Age related beliefs[a]	7.535	5.663	.185
Age related beliefs[b]	-6.250	5.653	.270
Sexual Beliefs and Sexual Function.			
Conservatism (Male)[a]	**-59.332**	**23.541**	**.012***
Conservatism (Male)[b]	7.461	23.541	.752
Conservatism (Female)[a]	8.229	20.889	.694

Conservatism (Female)[b]	-25.747	20.943	.220
'Macho' beliefs[a]	**41.253**	**12.138**	**<.001***
'Macho' beliefs[b]	7.815	12.143	.520
Age related beliefs[a]	-2.665	5.829	.648
Age related beliefs[b]	-7.568	5.816	.194
Sexual Beliefs and Sexual Dist.			
Conservatism (Male)[a]	**-188.030**	**55.590**	**<.001***
Conservatism (Male)[b]	-75.302	55.599	.117
Conservatism (Female)[a]	-19.643	51.172	.701
Conservatism (Female)[b]	3.127	51.176	.951
'Macho' beliefs[a]	31.568	30.297	.299
'Macho' beliefs[b]	37.546	30.441	.219
Age related beliefs[a]	8.474	13.622	.521
Age related beliefs[b]	2.532	13.633	.853

[a]: actor effects
[b]: partner effects
Bolded lines denote statistical significant effects

3. Discussion

The main goal of this study was to examine whether negative sexual beliefs were associated with individual and dyadic sexual well-being in community couples. In line with our hypotheses, our findings highlighted the links between negative sexual beliefs and lower individual sexual well-being (i.e., sexual satisfaction, sexual functioning, and sexual *distress*) and put forward links to dimensions of the partners' sexual well-being (sexual satisfaction). There was one exception to the direction of these results: findings showed that individuals who endorse stronger 'Macho' beliefs reported higher levels of sexual satisfaction and sexual functioning (actor effects) and their partners report higher sexual satisfaction (partner effect).

The current results suggest that there is a link between male sexual conservatism beliefs and lower levels of sexual satisfaction of the individual, which is in accordance with our hypothesis and with former research (Vasconcelos et al., 2021). The domain of male conservatism comprises numerous conservative ideas about sexual behavior. Examples of such ideas include beliefs such as sex before marriage is unacceptable, sex has to be quick, directed to coitus, without foreplay,

with man on top and serving procreative goals (Nobre & Pinto-Gouveia, 2003). Looking at this definition and considering the constraints these ideas entail (e.g., that foreplay is not important, that there is only one "correct" position to have sexual intercourse) and bearing in mind some of the items that constitute this domain (e.g., "In sex anything but vaginal intercourse is unacceptable", "Vaginal intercourse is the only legitimate type of sex", Nobre & Pinto-Gouveia, 2003), it can be hypothesized that having this type of beliefs can lead individuals to not explore their sexuality. Being "restricted" to certain activities and/or positions could lead the individual to have insufficient knowledge of their body and not getting involved in sexual activities that could be more pleasurable for them, leading to lower levels of sexual satisfaction, as found in this study and in previous research. On the other hand, the fact that the individual has stronger male sexual conservatism beliefs does not seem to be linked with the partners' sexual satisfaction. This may be due to the fact that, although one of the partners has these types of beliefs, the other partner might be understanding about them, or not give much importance to their presence not letting its sexual satisfaction be influenced or altered because of them.

The opposite pattern of results was found when referring to sexual beliefs related to female sexual conservatism, such that these beliefs were linked to lower levels of partner (but not own) sexual satisfaction. When looking at the items that constitute the domain of female sexual conservatism beliefs (e.g., "Anal sex is a perverted activity, "Oral sex is one of the biggest perversions", "Sexual activity must be initiated by man", Nobre & Pinto-Gouveia, 2003) we can hypothesize that due to these beliefs, some sexual activities will not be performed. The fact that the couple's sexual life might become less varied because of these beliefs, might contribute to the lower levels of sexual satisfaction of the partner, as found in this study.

Still related to the outcome of sexual satisfaction, results showed that when an individual holds stronger 'Macho' beliefs, the higher their own and their partner's sexual satisfaction. These results do not support our initial hypothesis. These sexual beliefs are defined by rigid ideas around man's capacity for being always ready for sex and keep an erected penis until the end of any sexual activity (Nobre & Pinto-Gouveia, 2003). It is possible that these beliefs, although negative, if somehow fulfilled by the individual, might give them a sense of accomplishment. Indeed, the current sample is a community sample and a young one – which may also play a role, and not a clinical sample with sexual dysfunction, thus individuals might be able to

fulfill these type of beliefs, while the same might not be true for samples with sexual dysfunction. In turn, the fact that these individuals have rigid and demanding beliefs about masculinity and performance in their sexual lives and yet are able to perform to these demands, may lead to higher levels of sexual satisfaction (i.e., an evaluation of their sexual relationship in which the positive aspects are greater than the negative aspects). The fact that the individual can in fact conform (or has a partner that conforms) to their definition of what a sexual partner should be, can lead to higher levels of sexual satisfaction and contribute to partner's sexual satisfaction, since a partner effect was also found when it comes to 'Macho' beliefs and its link to sexual satisfaction.

Regarding our second main outcome—i.e., sexual functioning—, we found that the more one endorses sexual beliefs related to male sexual conservatism, the lower their sexual functioning. These results are in line with our hypothesis and also align with previous findings (Adams et al., 1996; Nobre et al., 2021). Sexual beliefs related to sexual conservatism can influence how an individual experiences a sexual interaction with their partner, possibly leading to thoughts related to failure or lack of erotic thoughts leading to lower levels of sexual functioning, as our results corroborate. Results in this matter did not show a partner effect. Meaning that it seems this type of beliefs have an important effect on the individuals sexual functioning but no effect on the partner.

One result that goes in the opposite direction of our formulated hypothesis is the actor effect linking stronger 'Macho' beliefs with higher levels of own sexual functioning. The fact that if the individual has greater 'Macho' beliefs is associated to having greater sexual functioning may be related to the content of these beliefs. This type of beliefs is related to the man's ability to always be ready to have sex, satisfy all women, keep an erected penis until the end of any sexual activity, and so on, so if the individual who has them, in some capacity, is able to "fulfill" them, thus reinforcing said beliefs, this may contribute to the individual experiencing a more positive view of their sexual experiences, leading to higher values of their own sexual functioning.

No partner effect was found for the association between 'Macho' beliefs and partner's sexual functioning. Meaning that the influence of these sexual beliefs might be greater on the sexual functioning of the individual that has them rather than exerting an influence on the sexual functioning of the partner.

For the third and last main outcome, sexual *distress*, there was only one result that was statistically significant, the more sexual beliefs related to male sexual conservatism the individual endorsed, the higher their own levels of sexual *distress*. This result supports our main hypothesis and previous findings at the individual level (Nobre et al., 2021; Vasconcelos, 2021; Zarbo, 2019). The presence of these negative sexual beliefs and associated negative automatic thoughts will remove the focus from the sexual activity and redirect that same focus to performance stimuli, thus impairing the sexual response, as described earlier (Abdolmanafi et al., 2016) which, in turn, can lead to negative emotional responses and higher levels of sexual *distress* (Nobre, 2009). A partner effect in this matter was not found. This may be due to the fact that the individual experiences sexual *distress* more internally, meaning that the individual might not talk about it with its partner and/or tries to not let it show during sexual interactions.

In terms of an association between age related sexual beliefs and the three main outcomes of this study, we found no statistically significant results. This might have been influenced by the age range of the sample. Age related sexual beliefs are defined as beliefs were the main focus is the decline of sexual desire, pleasure with age, with increased relevance in menopause (Nobre & Pinto-Gouveia, 2003). The items of the sexual beliefs questionnaire that incorporate this domain of beliefs are, as described in its definition, beliefs related to questions of sexuality after menopause or with the decrease in desire and pleasure with an older age. Yet, the fact that 89.4% (i.e., 261 individuals) of the sample in this study is under 40 years old[1] (66.2% between 18 and 25 years old) may explain why this type of beliefs did not show up as statistically relevant and not having an association with the three main outcomes of the study.

Overall, we found a stronger contribution of sexual beliefs to the individual, rather than partner's sexual outcomes, with a few exceptions (such as the partner effects found between female conservative beliefs and 'Macho' beliefs with sexual satisfaction). This might happen due to the fact that the individual that has negative sexual beliefs will be impaired (within the three main outcomes analyzed in this

[1] Age-related sexual beliefs are related to menopause and decreasing of desire and pleasure with age, so 40 years old was used as a benchmark for this descriptive statistic as we know that menopause, and andropause, can start from the age of 45 to 55 years old (Varella, 2020), and that early menopause and andropause can start from the age of 40 (Varella, 2020).

study) in its own sexual life, and the fact that negative automatic thoughts may also arise because of such beliefs that will further influence the individual in a negative way, leading to the type of results found, were actor effects are more prevalent.

An exception for this might be situations where the sexual beliefs are more salient or have more open consequences for the sexual interaction with ones' partner (female conservative beliefs, 'Macho' beliefs) or where the partner of the individual that has negative sexual beliefs (that has its sexual responses influenced by them) may pick up on these changes and therefore change its own responses that will end up influencing its own sexual functioning, satisfaction, and *distress*.

As for limitations of the research that can be pointed out there is self-selection bias, meaning that our participants might be, from the start, more at ease when talking about sexuality topics and this would translate to them reporting less negative sexual beliefs. As for suggestions and gaps that would need to be addressed in future studies, is to see if between negative sexual beliefs and other sexual outcomes and variables, partner effects can be found or if actor effects are predominant, and see if the introduction of other variables (e.g., related to the couple's relationship, individuals' health) might cause to change the results that this study has found.

Regarding the strengths of this study, we can refer the pre-registration for the OSF that was prepared and submitted before data collection and analyses. This registration on the OSF platform intends to make other researchers aware of the present study and as a platform for sharing the pre-registration of the study in order to increase openness in study planning and enhance reproducibility. Sample size can also be pointed out as a strength of the present study. Sample size was estimated via an a-priori power analysis, and was done using the APIMPowerR ShinyApp (Ackerman et al., 2016). In the sample size calculation results indicated that the necessary sample size would be of 139 dyads to have adequate power (i.e., 0.80) to detect actor and partner effects, as the sample of the present study was 140 dyads, our sample is adequate, and the analyzes made are able to detect possible effects.

Within this sample, we also highlight its diversity, in terms of age, years of schooling, nationality, gender and sexual orientation. Although diversity is a positive aspect of our current sample, the question arises whether, in future studies, if this diversity was even greater, there could be differentiation in the results obtained. The fact that this study follows a dyadic design is also noteworthy, making it the first study that, to the best of our knowledge, examines the link between sexual beliefs and

couples' sexual well-being outcomes. This study then creates scientific knowledge and contributes to the increase of studies that are carried out at the dyadic level and potentially serves as an incentive for future research.

4. Conclusion

Our main objective was to understand the effect of individual sexual beliefs on the couple's sexual well-being, that is, to understand how these beliefs can have an effect on dimensions of both partners' sexual well-being (e.g., sexual satisfaction, sexual functioning, sexual *distress*). Results found were coherent with previous studies, showing several actor effects between sexual beliefs and an individual's sexual well- being (i.e., individuals who endorsed stronger sexual beliefs related to male conservatism also reported lower levels of own sexual satisfaction; individuals who endorsed stronger sexual beliefs related to male sexual conservatism, the lower their sexual functioning; individuals who endorsed stronger sexual beliefs related to male sexual conservatism the higher their own levels of sexual *distress*), but also put forward links to partners' sexual well-being (i.e, individuals who endorsed stronger sexual beliefs related to female sexual conservatism were linked to lower levels of partner (but not own) sexual satisfaction).

However, we did find results that go in an opposite direction of previous studies, such as the association between 'Macho' beliefs and higher levels of sexual functioning (actor effect), and the association between 'Macho' beliefs and higher levels of sexual satisfaction, this being found as an actor effect but also as a partner effect. This being said, this study is, to our knowledge, the first study to examine the associations between sexual beliefs and sexual well-being in a dyadic approach. As such, current findings could be an incentive for future researches by further exploring the results found in the present study or by creating new studies that include other variables related to sexuality that may help to further expand our understanding of why such results are found.

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