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ORIGINAL ARTICLE

Who are the orgasmic women? Exploratory study among a community sample of French-speaking women☆

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Summary It is important for clinical sexologists to understand the functioning of orgasmic women in order to better comprehend the issues of anorgasmia. The orgasm constitutes the most poorly understood step of the female sexual response, its description is too often subjective, and there exist many paths to reach orgasm. At present, difficulty achieving orgasm is the second most common sexual problem experienced by women and represents a large proportion of consultations in sexology. According to the studies of Laumann et al. (2005), 18 to 41% of women experience difficulties achieving orgasm. Moreover, anorgasmia may be more present during dyadic sexual activities than solitary ones. In this perspective, this online study was primarily interested in emotions, thoughts, and stimulations responsible for achieving orgasm during solitary sexual activities (self-stimulation) and during sexual activities with a partner (dyadic). The study sample consisted of 251 women, of which 176 described themselves as ''orgasmic'' and 75 as ''non-orgasmic.'' Compared to non-orgasmic women, orgasmic women reported more pleasure and less sexual distress. They also resorted to erotic thoughts during dyadic sexual activities and seemed more centered on their bodily sensations and on their partner. Additionally, orgasmic women reported using a larger variety of erotological behaviors. Our findings may help to improve the treatment of anorgasmia, especially during dyadic sexual activities.

Introduction

In 1966, Masters and Johnson published the results of their studies on masculine and feminine sexual response. They proposed a linear model composed of four successive phases: excitement, plateau, orgasm, and resolution. These authors were particularly interested in physiological changes triggered by the orgasm, characterized by contractions of

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Box 1: Orgasm's definition proposed by Meston et al. (2004): which takes into account the woman's personal experience of the orgasmic response.

An orgasm in the human female is a variable, transient peak sensation of intense pleasure, creating an altered state of consciousness, usually with an initiation accompanied by involuntary, rhythmic contractions of the pelvic striated circumvaginal musculature, often with concomitant uterine and anal contractions, and myotonia that resolves the sexually induced vasocongestion (sometimes only partially) and myotonia, generally with an induction of well-being and contentment (p. 174).

varying length and strength in the bottom third of the vagina every 0.8 seconds, accompanied by swelling of the upper two thirds of the vagina.

The orgasm phase also presents sex-related flushing at its maximum, as well as an increase in cardiac and respiratory frequency, blood pressure, and muscular tension (Bohlen et al., 1982). The orgasmic response is not limited to the gentio-pelvic region. It is also accompanied by perspiration, muscular spasms, corporal rigidity, hyperventilation, moans, pelvic movements, and trembling (Hite, 1976). Other types of stimulation might also cause an orgasm, such as stimulation of the breasts (Masters and Johnson, 1966) and the presence of erotic images (Whipple et al., 1992).

Currently, numerous studies focus on physiological factors of the orgasm, while psychological factors draw less attention from researchers. In addition, a universally accepted definition of the female orgasm does not exist (Mah and Binik, 2001). This absence of a satisfactory definition of the orgasm has been attributed to the limited understanding of the mechanisms that underlie the orgasm and to the fact researchers are dependent on subjective aspects of self-evaluation of women's experience. We chose to use the definition proposed by Meston et al. (p. 174, 2004), which takes into account the woman's personal experience of the orgasmic response (Box 1).

According to Mah and Binik's (2001) literature review, the female orgasm's origin is multidimensional, and its complexity requires an analysis that takes into account the cognitive dimensions (e.g., erotic perception of the experience, awareness of her sexual arousal, erotic thoughts), behavioral dimensions (e.g., active participation during sexual activities, frequency of sexual relations, masturbation), emotional dimensions (e.g., pleasure during the orgasm, joy, love, relaxation, conjugal and sexual satisfaction), environmental dimensions (e.g., age, religion, level of education, quality of sexual stimulation, premature experience of orgasm), and physiological dimensions (e.g., drug effects, role of neurotransmitters and hormones, role of the right hemisphere in the musculature of the perineum) as responsible for the achievement of the orgasm.

It should be noted that the literature in relation to treatment of anorgasmia is often limited and contradictory (IsHak et al., 2010). As for the definition of orgasmic trouble, it is characterized by ''as a persistent or recurrent delay in or absence of, orgasm following a normal sexual excitement phase'' (DSM IV, 2000). The DSM IV emphasizes that the degree of suffering and personal distress caused by this sexual difficulty must also be evaluated. In a general population, Bancroft et al. (2003) observed that 24.4% of women reported sexual distress, which shows the impact of feminine sexual dysfunction on the personal life of the individual. These authors noted that 30 to 50% of women who do not achieve orgasm also reported sexual distress. According to another study by Bancroft (2009), the level of sexual distress explains how important achieving orgasm is for women, while noting that there is great variability, with certain women attaching more importance to orgasming than others. One recent study found that orgasming is important or very important for 49% of women, versus 17% that responded that it is not very important and 34% as not important (Brune and Ferroul, 2010). Consequently, it seems indispensable to take sexual distress into account in our study.

Sexual stimulation responsible for the orgasm

With the discovery of Buisson et al. (2010) of the clitoro-utero-vaginal complex, two distinct orgasms no longer exist, clitoral, vaginal, or others. It should be noted that even if the physiology functions, the experience must be perceived positively as erotic in order for there to be an orgasm (Mah and Binik, 2001).

In 1966, Master and Johnson noted that certain women were able to achieve multiple orgasms and that the stimulation most used to achieve orgasm was stimulation of the clitoris. Indeed, Hite (1976) reported that 95% of women regularly achieved orgasm if there was stimulation of the clitoris, versus only 26% when clitoral stimulation was absent. According to Fisher (1973), 63% of women achieve orgasm by stimulation of the clitoris during dyadic sexual relations.

Kelly et al. (1990) were interested in types of sexual stimulation, and particularly in masturbation, in anorgasmic women. They noted that these women presented a more limited range of sexual experiences, in particular those relating to masturbation and direct stimulation of the clitoris, which could explain their difficulty achieving orgasm. More recently, an online study by Elisa Brune (2010) conducted in a large sample explained in detail the behavioral factors that lead a woman to orgasm. According to this author, women's preferred method to achieve orgasm, for 54% of the sample, is purely by stimulation of the clitoris, 14% by the clitoris combined with vaginal stimulation, 4% by the clitoris and stimulation of the breasts or the anus, and only 6% by pure vaginal stimulation. We must note that few recent study compare the types of stimulations used alone or in a couple to favor achieving orgasm. For this reason, we will address this subject in the presentation of our results.

Cognitive factors responsible for the orgasm

Achievement of the female orgasm depends not only on the woman's ability to perceive her corporal sensations, but also on her evaluation of them as being erotic. In this

perspective, Silverstein et al. (2011) observed that orgasmic women had better interoceptive awareness, in that they perceived their corporal sensations more rapidly. Indeed, the focalization of attention on certain physiological changes helps women better perceive their sexual arousal (Korff and Geer, 1983).

Several studies report that cognitive factors, especially negative thoughts linked to sexual performance or to a negative body image, play a considerable role on the sexual response (Dove and Wiederman, 2000; Wincze and Barlow, 1997). In sexuality, cognitive factors are composed of three levels: sexual beliefs, sexual self-schemas, and automatic thoughts (Beck et al., 1979). However, De Sutter (2009) and Mimoun (2007) explain that emotional functions (ecstasy) and cognitive functions (letting go) are essential components in achieving orgasm. They mention as well that intrusive negative thoughts could prevent this ''letting go'' and interfere with the sexual response.

In addition, attentional focus on automatic negative thoughts linked to performance and failure could inhibit the capacity to be present in erotic stimuli. This concept was introduced by Masters and Johnson (1971) as ''spectatoring'' to describe the fact of observing one's own sexual activity and reactions, instead of being fully immersed in the sensory aspects of sexual activity. According to Barlow (1986), sexually functional individuals focus their attention more on the erotic context, which augments sexual response. A study by Beck and Baldwin (1994) focused on sexually functional women who had to increase or decrease their sexual arousal while watching erotic films. These women explained that they used cognitive strategies and, more specifically, attentional strategies in order to increase their sexual arousal. Cognitive distraction during sexual activities is a cognitive factor that could be the cause of orgasmic trouble in women (Cuntim and Nobre, 2011; Dove and Wiederman, 2000). Orgasmic trouble could also be caused by intrusive thoughts that prevent the woman from focusing on erotic thoughts and from savoring sexual stimuli, such that the increase in sexual pleasure, the evolution of arousal and of orgasm could be strongly disturbed, even reduced to nothing (Hubin et al., 2011). Cuntim and Nobre (2011) also reported a significant correlation between the lack of erotic thoughts in women and difficulty achieving orgasm, and observed that women who reported few or no erotic thoughts had a relatively low frequency of orgasm.

To our knowledge, no study has yet compared cognitive factors and sexual behavior of women during solitary or dyadic sexual activity. In this sense, we propose several hypotheses in order to better understand the functioning of orgasmic women during dyadic activities, with the goal of improving future treatment of coital anorgasmia.

Hypotheses

H1: Do orgasmic women report more pleasure, less pain, and less sexual distress than anorgasmic women?

H2: Do orgasmic women use more erotological behaviors than anorgasmic women?

H3: Do orgasmic women use their erotic thoughts more than anorgasmic women?

H4: Are orgasmic women more focused on their corporal sensations than anorgasmic women?

Sample and method

Participants voluntarily completed an online study between July 15 and August 31, 2012. The sample was composed of 251 French-speaking women between the ages of 18 and 67 ($M = 31.81$; $SD = 11.60$), of which 176 considered themselves as generally ''orgasmic'' and 75 as ''not orgasmic.'' The participants were all sexually active, with a frequency of sexual activity varying between two and 90 times per month. The majority of women were heterosexual (88.5%), and the level of education was generally high (86% = Bachelor's degree, Master's degree, or Ph.D.).

This study was approved by the ethics committee before the questionnaire was posted online.

Measures

Orgasmic and Sexual Autobiographical Questionnaire

Few scales exist to evaluate the multidimensionality of the orgasm. Therefore, we developed a questionnaire focusing on environmental, emotional, cognitive, and behavioral factors of the orgasm. Based on the literature, 31 items were selected as being the most pertinent in achieving orgasm. Each item was rated either by dichotomous choice (yes or no) or on a Likert scale that went from ''never'' to ''always'' or from ''very satisfied'' to ''not at all satisfied''.

Female Sexual Distress Scale—Revised

The Female Sexual Distress Scale (FSDS-R; Derogatis et al., 2008) was developed to provide a standardized and quantitative scale to measure personal distress linked to sexuality in women. It is composed of 13 items that are rated on a five-point Likert scale (0 = never, 1 = rarely, 2 = often, 3 = very often, 4 = always). This scale has demonstrated good internal consistency, with a Cronbach's alpha of 0.94. This tool represents a reliable measure for discriminating between sexually functional and sexually dysfunctional women.

It was translated into French through back-translation. The scale was thus translated by one individual into French and then retranslated into English by another individual, in order to limit translation errors with the English version of the scale.

Results

H1: orgasmic/anorgasmic women—pleasure, pain, and sexual distress

At the end of the autobiographical orgasmic questionnaire, each participant had to rate herself according to three criteria that could influence the female orgasm: pleasure/no

Table 1 Distribution of women according to three criteria: pleasure, orgasm and pain.

1	2	3	4	5	6	7	8
No pleasure	Little pleasure	Pleasure	Pleasure	No pleasure	Little pleasure	Pleasure	Pleasure
No orgasm	No orgasm	No orgasm	No orgasm	Orgasm	Orgasm	Orgasm	Orgasm
Pain	No pain	Pain	No pain	Pain	No pain	Pain	No pain
2	9	12	52	0	9	34	133

or little pleasure; orgasm/no orgasm; pain/no pain. The women were asked to respond to this variable based on how they normally function. To facilitate these analyses, we separated this variable into three binary variables (Table 1).

Orgasm/no orgasm

In our study sample, 176 women chose the option ''orgasm'' (6,7,8) and 75 chose ''no orgasm'' (1,2,3,4). In our sample, 70% of women generally considered themselves ''orgasmic,'' versus 30% who considered themselves ''anorgasmic''.

According to our results, the majority of women appear to achieve orgasm (133), while other women don't achieve orgasm (52) but still feel pleasure and don't report any pain. No woman chose the condition ''no pleasure/orgasm/pain,'' while the condition ''no pleasure/no orgasm/pain'' had only two participants. It would seem that if a women feels pain and no pleasure, she cannot achieve orgasm.

Pleasure/no pleasure

For our analyses, we combined the conditions ''little pleasure'' (2,6) with ''no pleasure'' (2,6). The majority of women in our sample (92%) reported ''pleasure,'' versus 8% reporting ''little or no pleasure.'' According to our Chi-square analyses, there was no significant difference between pleasure and pain ($\chi^2(1) = 1.170$, $P = 0.279$). On the other hand, we observed that orgasmic women generally reported more pleasure than anorgasmic women ($\chi^2(1) = 6.545$; $P < 0.05$), with 72% of orgasmic women reporting pleasure, versus only 28% of anorgasmic women.

Pain/no pain

It seems that 81% of women experience no pain, versus 19% that generally experience pain, which does not represent a significant difference between groups ($\chi^2(1) = 0.014$, $P = 0.904$).

Sexual distress/no sexual distress

According to our results, 71% of anorgasmic women report sexual distress, versus only 26% among orgasmic women. A Student's *t*-test revealed a statistically significant difference in sexual distress between the groups ($t(249) = 6.486$, $P < 0.001$). The variable ''orgasm/no orgasm'' seems to conform to prior studies that consider sexual distress as a good scale for discriminating between sexually functional and sexually dysfunctional women.

H2: orgasmic/anorgasmic women—sexual stimulation during self-stimulation and dyadic sexual activities

During self-stimulation, the two groups differ in their use of certain sexual stimulations, notably in their use of vaginal penetration with one's fingers combined with stimulation of the clitoris. Indeed, orgasmic women use this stimulation significantly more than anorgasmic women ($\chi^2(1) = 5.054$, $P < 0.05$). In addition, stimulation of the nipples combined with stimulation of the clitoris also seems to be used more by orgasmic women ($\chi^2(1) = 5.902$, $P < 0.05$). Finally, vaginal penetration with one's fingers is also identified as a stimulation favorable for achieving orgasm, with a significant between-group difference ($\chi^2(1) = 4.582$, $P < 0.05$). There does not seem to be a significant difference concerning external sexual stimulation (i.e., rubbing the vulva on an object or with one's fingers) (Fig. 1).

Additionally, the most used stimulation to achieve orgasm reported by participants is rubbing the vulva with one's fingers (70% ''orgasmics'', 69% ''anorgasmics''), while vaginal penetration with one's fingers seems to be the least used (20.5% ''orgasmics,'' 9% ''anorgasmics'').

During dyadic sexual activities, the difference between the groups is even greater. Orgasmic women use significantly more varied stimulations, such as vaginal penetration ($\chi^2(1) = 27.005$, $P < 0.001$), vaginal penetration combined with stimulation of the clitoris ($\chi^2(1) = 58.116$, $P < 0.001$), vaginal penetration with a sex toy ($\chi^2(1) = 15.116$, $P < 0.001$), and rubbing genitals against each other ($\chi^2(1) = 19.601$, $P < 0.001$), than anorgasmic women. In a lesser measure, anal penetration ($\chi^2(1) = 5.370$, $P < 0.05$) and stimulation of the nipples with vaginal penetration ($\chi^2(1) = 11.602$, $P < 0.05$) are also used more often by orgasmic women (Fig. 2).

In our two groups, the most used stimulation in dyadic sexual activities to achieve orgasm seems to be vaginal penetration combined with stimulation of the clitoris, with 97% of orgasmic women and 63% of anorgasmic women reporting the use of this method, while anal penetration seems to be the least used (33% orgasmics, 9% anorgasmics).

H3: orgasmic/anorgasmic women—erotic thoughts during self-stimulation and dyadic activities

Erotic thoughts are the most present thoughts for all participants, whether they are orgasmic or anorgasmic and for both solitary (self-stimulation) and partnered (dyadic) sexual activities. During self-stimulation, all women reported

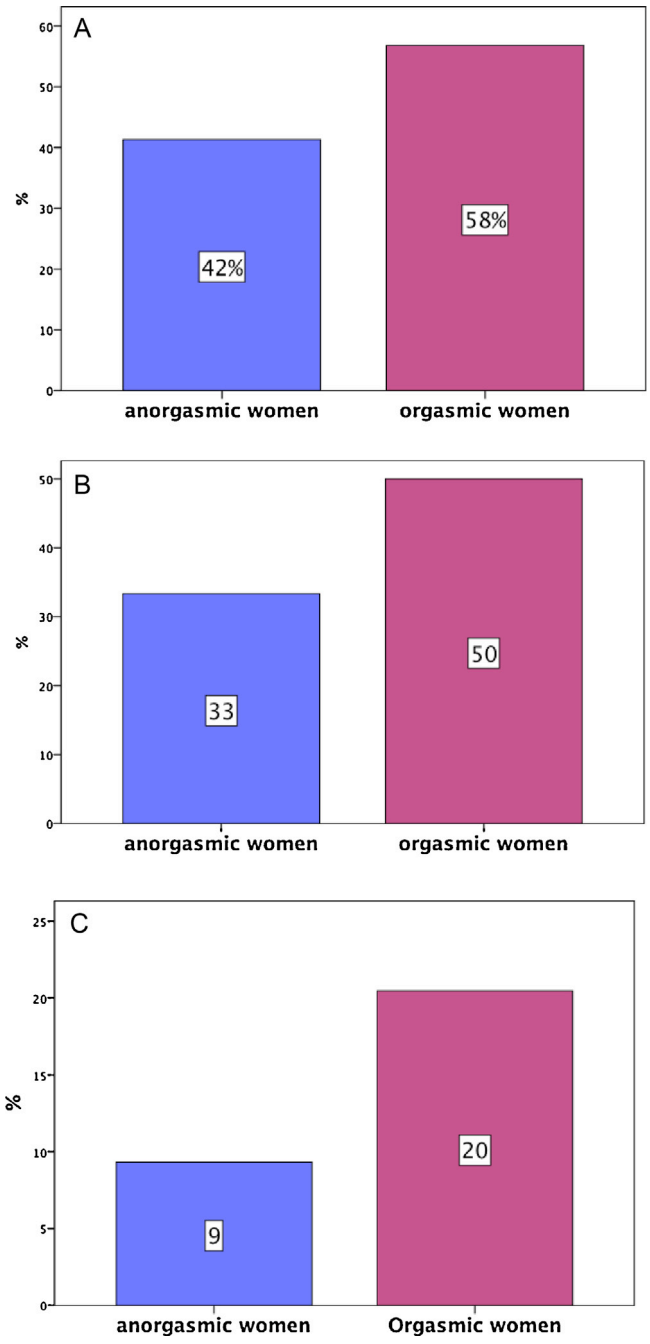

Figure 1 Women who achieve orgasm through self-stimulation. A. Vaginal penetration with fingers combined with stimulation of clitoris. B. Stimulation of the nipples combined with stimulation of the clitoris. C. Vaginal penetration with fingers, $P < 0.05$.

erotic thoughts; there was thus no difference between the groups. In contrast, during dyadic sexual activities, erotic thoughts are used significantly more by orgasmic women than by anorgasmic women ($\chi^2(1) = 8.361$, $P < 0.05$) (Fig. 3).

Indeed, orgasmic women use erotic thoughts during self-stimulation (78%) as much as during dyadic sexual activities (72%), versus anorgasmic women (76% during self-stimulation and 53% during dyadic sexual activities).

According to our results, there does not seem to be a statistically significant difference between groups concerning the the fact of thinking about an already experienced situation with one's partner, about a situation experienced with an ex-partner, about a situation experienced without a partner, about a violent situation, and the fact of having negative intrusive thoughts.

H4: orgasmic/anorgasmic women—thinking about corporal sensations

Our results showed statistically significant results between groups. Indeed, 93% of orgasmic women noted that thinking about their corporal sensations was the most favorable manner of thinking for achieving orgasm, versus 80% of anorgasmic women, which represents a statistically significant difference ($\chi^2(1) = 9.519$, $P < 0.01$) (Fig. 4).

Discussion

This study helps us to better understand who orgasmic women are and what thoughts and stimulation allows them to achieve orgasm. Concerning sexual stimulation, the most frequently used stimulation for achieving orgasm by all women during self-stimulation is rubbing the vulva with one's fingers, and the least used is vaginal penetration with one's fingers. Additionally, orgasmic women use more vaginal penetration with one's fingers combined with stimulation of the clitoris, stimulation of the nipples combined with stimulation of the clitoris, and vaginal penetration with one's fingers compared to anorgasmic women. Anorgasmic women thus present a greater erotic ''poverty,'' as they don't use the entire range of possible sensations.

During dyadic sexual activities, the most used stimulation to achieve orgasm is vaginal penetration combined with stimulation of the clitoris. Orgasmic women use significantly more of stimulations such as vaginal penetration, vaginal penetration combined with stimulation of the clitoris, vaginal penetration with a sex toy, rubbing genitals against each other, anal penetration, and stimulation of the nipples combined with vaginal penetration, compared to anorgasmic women. These results clearly show that orgasmic women present a larger and less routine array of erotological behaviors.

According to our results, orgasmic and anorgasmic women have equal amounts of erotic thoughts during self-stimulation. However, during dyadic sexual activities, anorgasmic women report fewer erotic thoughts than orgasmic women. This is a very interesting discovery with multiple implications. How can we explain these differences that are only observed during dyadic relations? According to Cuntim and Nobre (2011), women with orgasmic difficulties have a higher level of distraction than women without orgasmic difficulties. Also, according to our results, anorgasmic women seem not to have more negative intrusive thoughts. Thus, we believe that this difference in the use of erotic thoughts during dyadic situations could be better explained by attentional biases. Orgasmic women are more focused on sexual activity perceived as erotic with their partner, verses anorgasmic women who perceive the relationship as menacing

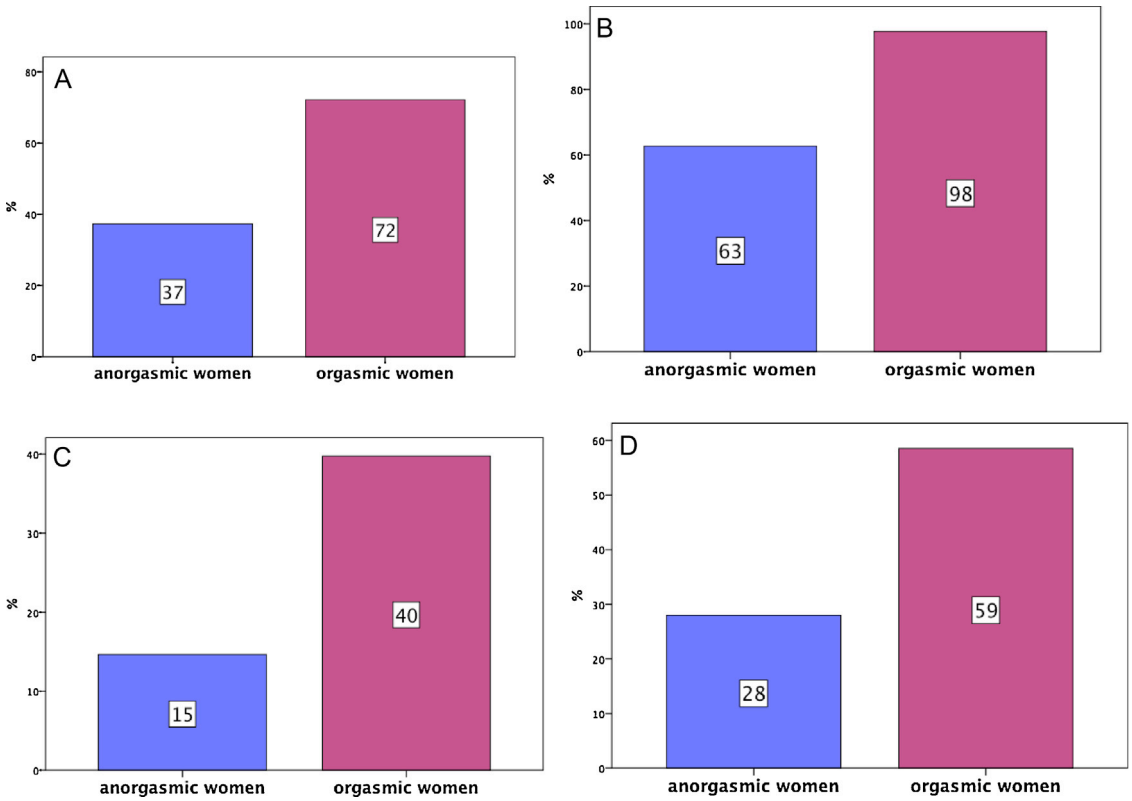

Figure 2 Women who achieve orgasm during dyadic sexual activities. A. Vaginal penetration. B. Vaginal penetration associated with stimulation of the clitoris. C. Vaginal penetration with a sex toy. D. Rubbing genitals against each other. $P < 0.001$.

and not erotic, which prevents them from increasing their level of arousal until they could achieve orgasm.

Additionally, orgasmic women mention that the most favorable thought for achieving orgasm is to center their attention on corporal sensations, unlike anorgasmic women. This focus on corporal sensations and on the present moment has also been reported as being an effective strategy for increasing sexual arousal (Beck and Baldwin, 1994).

It is important to note that orgasmic women report more pleasure during sexual activities and less sexual distress. According to Bancroft (2009), sexual distress is a sign of

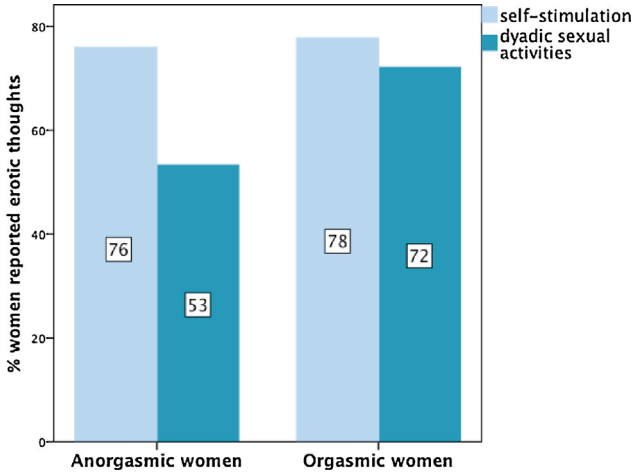

Figure 3 Use of erotic thoughts, $P < 0.05$.

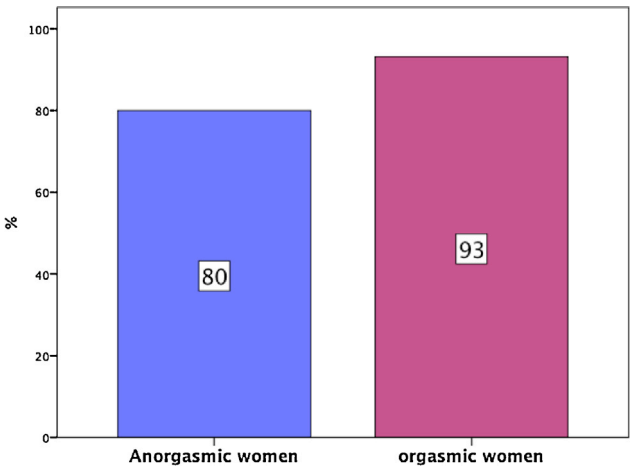

Figure 4 Thought that most favors achieving orgasm: thinking about one's corporal sensations, $P < 0.01$.

the importance attributed by women to achieving orgasm. It seems, thus, that achieving orgasm is important for the majority of anorgasmic women.

Conclusion

Our results replicate previous research studies and highlight the existence of a real difference between orgasmic and anorgasmic women, not in the quality of erotic thoughts, but in the use of these thoughts during dyadic sexual

activities. According to our results, anorgasmic women have less attentional capacity, perceive dyadic relations as more threatening, and report more cognitive distraction. In order to improve future treatments, attentional training should be emphasized, with the goal of developing cognitive strategies that allow the patient to orient all her attention toward the erotic stimuli during dyadic sexual activities. A form of erotological education could also be part of treatment, encouraging women to vary their sexual stimulations and explore new types of stimuli.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

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