ΠΑΝΕΠΙΣΤΗΜΙΟ ΔΥΤΙΚΗΣ ΑΤΤΙΚΗΣ ΣΧΟΛΗ

ΕΠΙΣΤΗΜΩΝ ΥΓΕΙΑΣ ΚΑΙ ΠΡΟΝΟΙΑΣ

ΤΜΗΜΑ ΜΑΙΕΥΤΙΚΗΣ

Διπλωματική Εργασία

Συστηματική ανασκόπηση για τη συμβολή αιτιολογικών παραγόντων στο γυναικείο οργασμό

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Etiological factors affecting female orgasm: A systematic review

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ΠΑΝΕΠΙΣΤΗΜΙΟ ΔΥΤΙΚΗΣ ΑΤΤΙΚΗΣ

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Μέλη Εξεταστικής Επιτροπής συμπεριλαμβανομένου και του Εισηγητή

Η πτυχιακή/διπλωματική εργασία εξετάστηκε επιτυχώς από την κάτωθι Εξεταστική Επιτροπή:

Α/α	ΟΝΟΜΑΕΠΩΝΥΜΟ	ΒΑΘΜΙΔΑ/ΙΔΙΟΤΗΤΑ	ΨΗΦΙΑΚΗ ΥΠΟΓΡΑΦΗ
1	Βικτωρία Βιβιλάκη	Αναπληρώτρια Καθηγήτρια, Τμήμα Μαιευτικής, Πανεπιστήμιο Δυτικής Αττικής	Viktoria Vivilaki Digitally signed by Viktoria Vivilaki Date: 2023.06.19 12:01:36 +03'00'
2	Αθηνά Διαμάντη	Επίκουρη Καθηγήτρια, Τμήμα Μαιευτικής, Πανεπιστήμιο Δυτικής Αττικής	Athina Diamanti Athina Diamanti 2023.06.19 11:38:44+03'00'
3	Δήμητρα Μεταλλινού	Επίκουρη Καθηγήτρια, Τμήμα Μαιευτικής, Πανεπιστήμιο Δυτικής Αττικής	Dimitra Metallinou Digitally signed by Dimitra Metallinou Date: 2023.06.19 11:06:09 +03'00'

ΔΗΛΩΣΗ ΣΥΓΓΡΑΦΕΑ ΠΤΥΧΙΑΚΗΣ/ΔΙΠΛΩΜΑΤΙΚΗΣ ΕΡΓΑΣΙΑΣ

Η κάτωθι υπογεγραμμένη Ουρανία Πορφυρίδου του Ιωσήφ, με αριθμό μητρώου 20054 φοιτήτρια του Πανεπιστημίου Δυτικής Αττικής της Σχολής Επαγγελμάτων Υγείας και Πρόνοιας του Τμήματος Μαιευτικής, δηλώνω υπεύθυνα ότι:

«Είμαι συγγραφέας αυτής της πτυχιακής/διπλωματικής εργασίας και ότι κάθε βοήθεια την οποία είχα για την προετοιμασία της είναι πλήρως αναγνωρισμένη και αναφέρεται στην εργασία. Επίσης, οι όποιες πηγές από τις οποίες έκανα χρήση δεδομένων, ιδεών ή λέξεων, είτε ακριβώς είτε παραφρασμένες, αναφέρονται στο σύνολό τους, με πλήρη αναφορά στους συγγραφείς, τον εκδοτικό οίκο ή το περιοδικό, συμπεριλαμβανομένων και των πηγών που ενδεχομένως χρησιμοποιήθηκαν από το διαδίκτυο. Επίσης, βεβαιώνω ότι αυτή η εργασία έχει συγγραφεί από μένα αποκλειστικά και αποτελεί προϊόν πνευματικής ιδιοκτησίας τόσο δικής μου, όσο και του Ιδρύματος.

Παράβαση της ανωτέρω ακαδημαϊκής μου ευθύνης αποτελεί ουσιώδη λόγο για την ανάκληση του πτυχίου μου».

**Επιθυμώ την απαγόρευση πρόσβασης στο πλήρες κείμενο της εργασίας μου μέχρι ..... και έπειτα από αίτηση μου στη Βιβλιοθήκη και έγκριση του επιβλέποντα καθηγητή*

Η Δηλούσα

Ουρανία Πορφυρίδου

*** Ονοματεπώνυμο/Ιδιότητα**

Βικτωρία Βιβιλάκη/Αναπληρώτρια Καθηγήτρια Μαιευτικής

Ψηφιακή Υπογραφή Επιβλέποντα

Viktoria Vivilaki

Digitally signed by Viktoria Vivilaki
Date: 2023.06.19 19:19:52 +03'00'

**** Σε εξαιρετικές περιπτώσεις και μετά από αιτιολόγηση και έγκριση του επιβλέποντα, προβλέπεται χρονικός περιορισμός πρόσβασης (embargo) 6-12 μήνες. Στην περίπτωση αυτή θα πρέπει να υπογράψει ψηφιακά ο/η επιβλέπων/ουσα καθηγητής/τρια, για να γνωστοποιεί ότι είναι ενημερωμένος/η και συναινεί. Οι λόγοι χρονικού αποκλεισμού πρόσβασης περιγράφονται αναλυτικά στις πολιτικές του Ι.Α. (σελ. 6):***

https://www.uniwa.gr/wp-content/uploads/2021/01/%CE%A0%CE%BF%CE%BB%CE%B9%CF%84%CE%B9%CE%BA%CE%B5%CC%81%CF%82_%CE%99%CE%B4%CF%81%CF%85%CE%BC%CE%B1%CF%84%CE%B9%CE%BA%CE%BF%CF%85%CC%81_%CE%91%CF%80%CE%BF%CE%B8%CE%B5%CF%84%CE%B7%CF%81%CE%B9%CC%81%CE%BF%CF%85_final.pdf).

ETIOLOGICAL FACTORS AFFECTING FEMALE SEXUAL SATISFACTION: A systematic review

ABSTRACT

Introduction: Evidence suggests that masturbation, genital stimulation, body awareness and movement, pelvic floor exercises, depression, anxiety, positive and negative feelings, personality type, emotional and overall well-being and emotional intelligence have been studied in association with female orgasm through the years. Additionally, healthcare providers of sexual health and most women lack information regarding sexual satisfaction and reaching orgasm. Few studies have addressed this issue.

Aim: To systematically study the effect of social, behavioral, and psychological factors on female orgasm.

Methods: An extensive search was conducted in PubMed, CINAHL, Google Scholar and Scopus, according to the Preferred Reporting Items for Systematic Review and Meta-Analysis Statement (PRISMA) guidelines, for relevant articles published between June 2002 and June 2022. Studies in languages other than English were excluded. The following Medical Subject Headings (MeSH) terms were used: female, orgasm, psychological, behavioral, social, sexual. Inclusion criteria concerned studies that sampled adult healthy women, used quantitative methodology and explored factors influencing sexual satisfaction.

Results: Out of 531 studies, forty-five were further screened. A total of twenty-one studies were reviewed, most of which were conducted in the USA, Portugal and the United Kingdom. They were followed by Switzerland, Iran, Brazil, Sweden, Canada, Hungary and the Netherlands. Four major themes influencing female sexual satisfaction emerged from the synthesis: psychological disorders (depression and anxiety), psychological background (emotional intelligence, emotional and overall well-being, personality type, positive emotions), genital stimulation (masturbation, self-stimulation of genitalia, partnered stimulation of sexual organs, different types of sexual activity), body awareness and movement (pelvic floor exercises, pelvic movement during sexual activity, cognizance of sexual arousal).

Conclusions: The female orgasm was influenced by a number of factors, some of which adversely affected it.

Key-words: behavior, female orgasm, psychological, sexual practices, sexual satisfaction

ΣΥΣΤΗΜΑΤΙΚΗ ΑΝΑΣΚΟΠΗΣΗ ΓΙΑ ΤΗ ΣΥΜΒΟΛΗ ΑΙΤΙΟΛΟΓΙΚΩΝ ΠΑΡΑΓΟΝΤΩΝ ΣΤΟ ΓΥΝΑΙΚΕΙΟ ΟΡΓΑΣΜΟ

ΠΕΡΙΛΗΨΗ

Εισαγωγή: Ο αυνανισμός και η διέγερση των γεννητικών οργάνων, η κινητικότητα και η ευαισθησία/αντίληψη του σώματος, οι ασκήσεις πυελικού εδάφους, η κατάθλιψη, το άγχος, τα θετικά και αρνητικά συναισθήματα, ο τύπος προσωπικότητας, η ψυχική ευημερία και η συναισθηματική ευφυΐα έχουν διερευνηθεί σε σχέση με το γυναικείο οργασμό. Οι επαγγελματίες που ασχολούνται με τη σεξουαλική υγεία, καθώς και οι ίδιες οι γυναίκες, γνωρίζουν ελάχιστα πράγματα σχετικά με τον οργασμό και τη σεξουαλική ικανοποίηση. Ταυτόχρονα, οι έρευνες που έχουν μελετήσει το θέμα, είναι λίγες.

Σκοπός: Να μελετηθεί συστηματικά το αποτέλεσμα που έχουν οι κοινωνικοί, οι ψυχολογικοί και οι συμπεριφορικοί παράγοντες στο γυναικείο οργασμό.

Μεθοδολογία: Έγινε βιβλιογραφική αναζήτηση για σχετικά άρθρα που είχαν εκδοθεί μεταξύ του Ιουνίου του 2002 και του Ιουνίου του 2022, στις βάσεις δεδομένων PubMed, CINAHL, Google Scholar και Scopus σύμφωνα με τις οδηγίες του Preferred Reporting Items for Systematic Review and Meta-Analysis Statement (PRISMA). Μελέτες που δεν ήταν δημοσιευμένες στα αγγλικά, δεν συμπεριλήφθηκαν. Συμπεριλήφθηκαν έρευνες στις οποίες συμμετείχαν ενήλικες, υγιείς γυναίκες, χρησιμοποιήθηκε ποσοτική μεθοδολογία και μελετήθηκαν παράγοντες που επηρεάζουν το γυνικείο οργασμό.

Αποτελέσματα: Από τα 531 άρθρα, τα σαράντα πέντε διερευνήθηκαν περαιτέρω. Συμπεριλήφθηκαν συνολικά είκοσι μία έρευνες, οι περισσότερες εκ των οποίων πραγματοποιήθηκαν στις ΗΠΑ, την Πορτογαλία και το Ην. Βασίλειο, ενώ ένα μικρότερο μέρος τους έλαβε χώρα στην Ελβετία, στο Ιράν, στη Βραζιλία, στη Σουηδία, στον Καναδά, στην Ουγγαρία και στην Ολλανδία. Αναδείχθηκαν τέσσερις σημαντικές θεματικές ενότητες παραγόντων που επηρεάζουν το γυναικείο οργασμό: ψυχολογικές/ψυχικές διαταραχές (κατάθλιψη και άγχος), ψυχολογικό υπόβαθρο (συναισθηματική ευφυΐα, ψυχική ευημερία, τύπος προσωπικότητας, θετικά συναισθήματα), διέγερση των γεννητικών οργάνων (αυνανισμός, αυτοδιέγερση, διέγερση από το/τη σύντροφο, διαφορετικοί τύποι σεξουαλικής επαφής), κινητικότητα και ευαισθησία/αντίληψη του σώματος (ασκήσεις πυελικού εδάφους, πυελική κίνηση κατά τη διάρκεια της σεξουαλικής επαφής, επίγνωση των σημείων της σεξουαλικής/ερωτικής διέγερσης).

Συμπέρασμα: Ο γυναικείος οργασμός επηρεάζεται από πολλούς παράγοντες, από κάποιους μάλιστα, αρνητικά.

Λέξεις-κλειδιά: συμπεριφορά, γυναικείος οργασμός, ψυχολογία, σεξουαλικές πρακτικές, σεξουαλική ικανοποίηση

INTRODUCTION

Except for sexual activity, orgasms and sexual pleasure have been reported to result from exercise, especially from abdominal exercises and lifting weights, while there has also been a connection with climbing and biking (Herbenick & Fortenberry, 2011). Additionally, there have been reported orgasms as a result of fantasy and as an outcome of sexual arousal occurring during sleep that leads the person to wake up and experience orgasm, known as nocturnal orgasms (Wells, 1986). Previous studies refer also to breast stimulation orgasms, orgasms through fantasy and orgasms achieved in spinal-injured women when erotic zones were stimulated above the injury (Mah & Binik, 2001; Matsick et al., 2016).

The physical aspect of orgasm depends on the two most popular organs that assist it: vagina and clitoris. Although clitoral and vaginal orgasm seem identical, Freud's theory that a woman achieves her sexual development by moving her erogenous zone from the clitoris to the vagina seems to be the prevailing view (De Bruijn, 1982; Fugl-Meyer et al., 2006; Mah & Binik, 2001, 2005; Taublieb & Lick, 1986). Clitoral orgasms, also referred to as "vulvar orgasms", are described differently than vaginal orgasms e.g., topical focused, stronger, ardent and more pleasing physically. Contractive, pulsating and thrusting sensations precisely describe the vaginal orgasm, also known as "uterine orgasm", which scatters over the whole body rather than localizing in the pelvic area, providing stronger and enduring psychological satisfaction (De Bruijn, 1982; Fugl-Meyer et al., 2006; Mah & Binik, 2001, 2005). Sensory signals are transferred to the brain through different paths, depending on which organ is stimulated (Brody & Costa, 2008). Clitoris is connected with the pudendal nerve which links it directly to the spinal cord. On the contrary, vaginal signals are transferred through the pudendal, the pelvic splanchnic and hypogastric nerves, which can explain the differences concerning description of orgasm. Lastly, the "blended orgasm", a third typology of orgasm described years ago by the Singers, contains elements and sensations from both vulvar and uterine orgasms (Perry & Whipple, 1982).

Orgasm also has physical hormonal aspects. Estradiol and testosterone seem to be hormones strongly associated with orgasm, since the highest frequency of orgasms is reported right before ovulation, when estradiol and testosterone levels are the highest. Oxytocin seems to work in a complementary manner through its contractive function. Historically, there has been a strong belief that coital orgasm is the most important and superior. This belief is a reflection of Freud's theory. While there is a wide variety in sexual acts, encompassing both partnered sex and solitary activity, for many people the act of coitus is considered to be counterpart of sexual activity. There are men that do not consider an act of sex, if it does not lead to their orgasm. In contrast, it is acceptable and more common for women to engage in sexual activities, including penile-vaginal intercourse, and still not achieve orgasm.

The sexual response cycle contains four stages for both women and men, including common characteristics for both sexes: excitement, plateau, orgasm and resolution. Increased heart rate as well as blood pressure and respiration rhythm, muscle contractions, hyperemia, high muscle tone, erect nipples and winces are the elements that women and men share (Lowdermilk et al., 2013; Matsick et al., 2016). Other elements that can be used in order to describe an orgasm, the changes it provokes, and the feelings afterwards are: warmth, inevitability sensation, postponement, exploding pleasure, throbbing, tension, affection, fulfillment, relaxation (Mah & Binik, 2001; Matsick et al., 2016). The stages of orgasm and the associated sensations and feelings are extensively shown at Figure 2.

This review intends to systematically study the effect of social, behavioral and psychological factors on female orgasm.

METHODS

An extensive search was conducted in PubMed, CINAHL, Google Scholar and Scopus, according to the Preferred Reporting Items for Systematic Review and Meta-Analysis Statement (PRISMA) guidelines, for relevant articles published between June 2002 and June 2022. Studies in languages other than English were excluded. The following Medical Subject Headings (MeSH) terms were used: female, orgasm, psychological, behavioral, social, sexual. Key-words used in the search process are extensively shown at Table 1. In addition, a synthesis of Emtree terms in Embase and free-text terms was made to further enhance the review process. Lastly, references of articles with information about orgasm were examined, even if articles were excluded, to retrieve potential articles via snowballing.

Table 1. PICO Question

PICO	Key Words
Population	Women, Female
Intervention	Psychological, Behavioral, Social AND Factors
Control	Psychological, Behavioral, Social AND Factors
Outcome	Orgasm

PICO, Population Intervention, Control, Outcome

A total of 531 article titles were identified, screened and sorted. Forty-five articles were reviewed in detail after considering the title and the research questions as eligible. Twenty-one full-length research papers fulfilled the inclusion criteria and thus selected for the purpose of the present review (Figure 1).

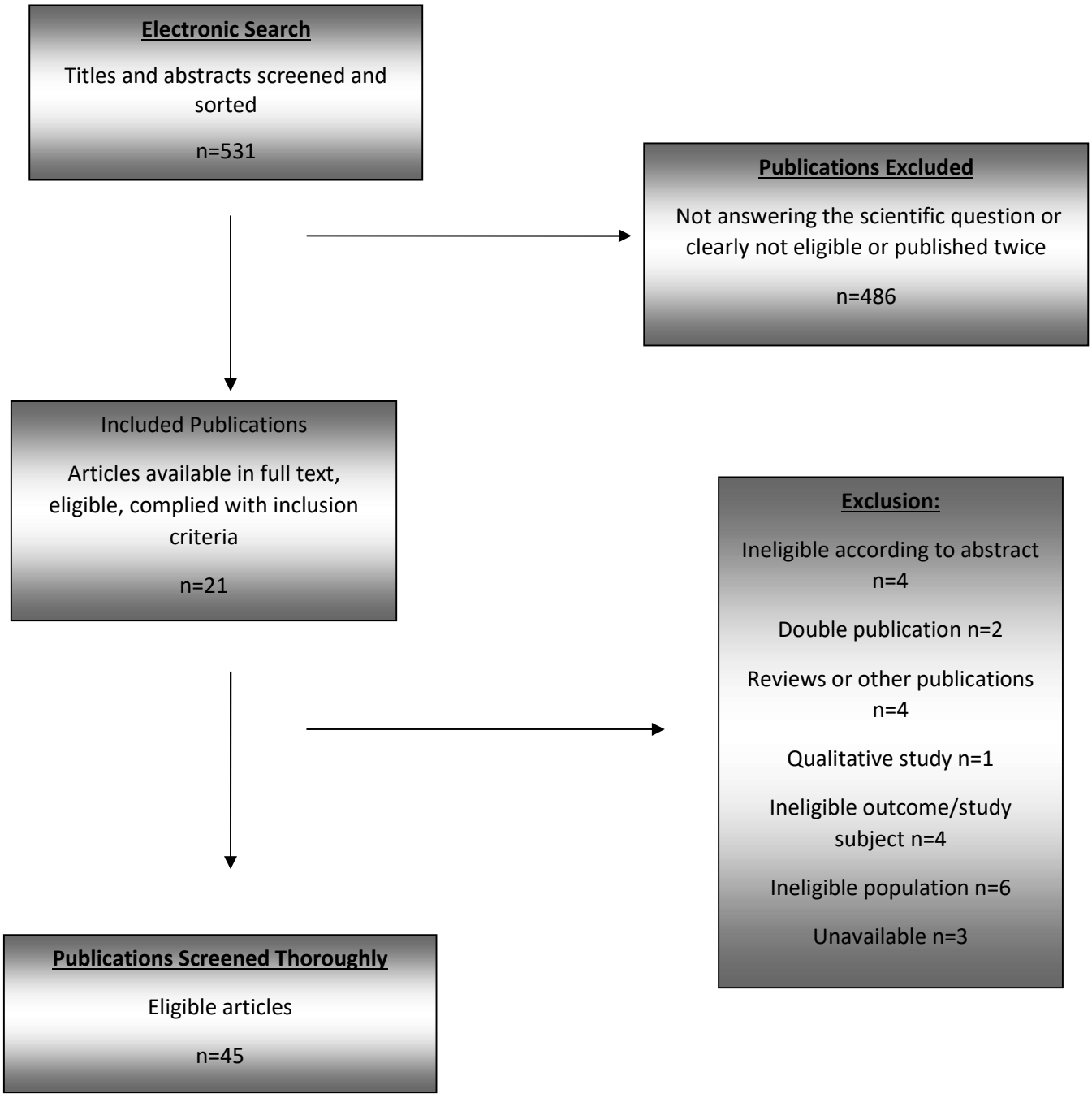

Figure 1 Flow chart of literature search

Inclusion criteria

During the selective process, the significant aspects that defined inclusion criteria were five: population, intervention, outcome, design and time of publication:

1. Study population: We included studies conducted on sexually active and generally healthy women, at least eighteen years old. Relationship and marital status were not taken into account. Thus, women in relationship, single, married, widowed, childless and mothers were surveyed. Publications with male participants, pregnant or postpartum women were excluded. Publications with participants diagnosed with serious health problems in need of medication intake that might affect orgasm, such as antidepressants, were excluded as well.

2. Intervention: We included studies that investigated psychological (e.g. depression, anxiety) and/or behavioral (e.g. type of sexual act) and/or cognitive-affective (e.g. sexual beliefs) and socio-demographic characteristics as predictors of female orgasm. Articles that studied medical or psychological treatments and therapies intended to eliminate sexual dysfunction were excluded. Studies that investigated factors such as body function, trauma and surgeries, drugs or any other characteristic outside the psychological/behavioral/social spectrum were excluded.

3. Outcome: Studies investigating the impact of several factors on orgasm were included. Articles demonstrating overall satisfaction, marital/relationship satisfaction or even sexual satisfaction were also excluded.

4. Design: All studies included were randomized controlled trials. Clinical trials, meta-analyses, reviews, case reports and other documents were excluded.

5. Time: Articles published after 2002 were featured in order to present the science community's perspective over the past twenty years.

Validity assessment:

All articles were evaluated using the Critical Appraisal Skills Program (CASP) Checklist for systematic reviews. Issues related to appropriateness of methodology, study design and data collection, bias, ethics and clarity as well as validity of findings were examined and assessed.

Each aspect was defined as adequate (yes), inadequate (no) or uncertain (can't tell). Methodological quality was evaluated positively if investigators analyzing data were "blinded", if comparison groups were homogenous and if there were no characteristics or interventions causing differences that could affect outcome. Study design was considered adequate if population, intervention and outcome were stated and described clearly. In addition, randomization was conducted in ways that eliminated bias and participant exclusions did not affect the study or the outcome. Results validation was rated positively if the intervention effects and confidence intervals (CIs) were reported properly and if the benefit cost ratio was weighted on benefit.

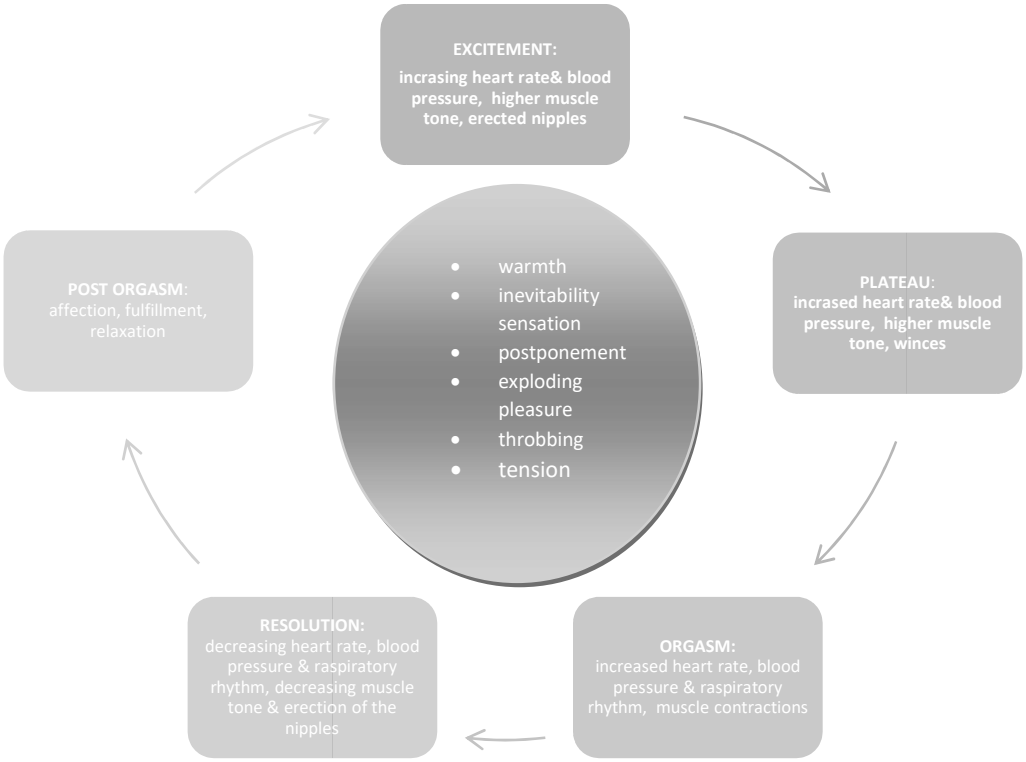

Figure 2. Stages of orgasm, emotions, sensations.

Study Characteristics

Measurements:

Considering research tools, studies that analyzed the same factors tended to use identical questionnaires and scales. Most studies used self-created questionnaires only or alongside standardized measurements due to subject peculiarity and specialty. There were three publications (four trials) using a Photoplethysmograph as a tool, an instrument that measures blood flow and detects changes in volume within a specific organ, vagina in this case (Brody, 2007b; Brody et al., 2003; Suschinsky & Chivers, 2018). There was one article that used, among other tools, visual scales in order to collect information about body, time and space awareness (Campos et al., 2021). Designed tools were created mostly in order to collect data regarding demographics, sexual behavior/activity, satisfaction, desire, arousal, alcohol consumption, masturbation, perception of sex, well-being and, certainly, orgasm. For some of these aspects, standardized measurement tools were used as well. For factors such as depression, anxiety, personality type and social desirability standardized scales and self-created questions were used (Table 2).

Measurement tools that evaluated sexual history focused on sexual acts with or without a partner and, usually, examined the orgasm occurrence. Beyond that point, there were articles that used tools, such as scales, in order to quantify dimensions like satisfaction, desire, arousal, alcohol consumption before sex, first penile-vaginal sex experience, first orgasmic experience, sexual orientation, sexual well-being and preferences regarding sexual touching (Bischof-Campbell et al., 2019; Brody et al., 2003; Brody, 2007a, 2007b; Campos et al., 2021; De Lucena & Abdo, 2014; Frohlich and Meston, 2002; Fugl-Meyer et al., 2006; Herbenick et al., 2018; Leeners et al., 2014; Moura et al., 2020; Nazarpour et al., 2017, 2018; Prause et al., 2016; Rowland et al., 2020; Suschinsky & Chivers, 2018; Tavares et al., 2017, 2018;). Some measurement tools expended the subject and included behavioral items outside the strict sexual context, e.g., talking

about sex, sexual education/information, beliefs, perceptions, importance of sex, reason for masturbating (Bischof-Campbell et al., 2019; Burri et al., 2009; De Lucena & Abdo, 2014; Fugl-Meyer et al., 2006; Herbenick et al., 2018; Moura et al., 2020; Tavares et al., 2018).

In order to define and assess orgasm, some of the included articles used data from standardized as well as self-created measurement tools (Bischof-Campbell et al., 2019; Brody et al., 2003; Brody, 2007a; Brody & Costa, 2008; Campos et al., 2021; Costa & Brody, 2010; De Lucena & Abdo, 2014; Herbenick et al., 2018; Moura et al., 2020; Nazarpour et al., 2017, 2018; Rowland et al., 2020; Suschinsky & Chivers, 2018; Tavares et al., 2017, 2018). However, there were studies that used specific questions (Frohlich and Meston, 2002; Leeners et al., 2014; Brody 2007a; Burri et al., 2009; Prause et al., 2016). Extensive information on the designs, measurements and questions used in the relative studies are shown in Table 3.

Table 2. Factors and Measurement Tools

Factor	Measurements/Questions
Depression and Anxiety	• Beck Depression Inventory and Beck Anxiety Inventory (De Lucina and Abdo, 2014; Prause et al., 2016) • Symptom Checklist 90 Revised (Leeners et al., 2014) • Centers for Epidemiological Study Depression Scale (CES-D) (Prause et al., 2016)
Personality Type	• NEO-Five Factor Inventory (Tavares et al., 2018) • Freiburger PersönlichkeitsInventar (FPI) (Leeners et al., 2014)
Genital Touching	• How often do you masturbate (focusing on clitoris/vagina)? (Tavares et al., 2017, 2018) • How many times have you engaged in masturbation in the past 30 days? (Brody, 2007b) • How many times have you engaged in masturbation during one representative month in the past three months? (Brody, 2007a; Brody et al., 2003) • How recently have you engaged in receiving genital touching? (Herbenick et al., 2018) • When it comes to vulva/vagina touching, do you prefer ▫ Being touched very lightly ▫ Pressure that glides over your genital skin ▫ Medium pressure that actually moves your genital skin ▫ Firm pressure that pushes deep into your genital skin ▫ N/A—All pressures feel equally good

	▫ Something else (please describe) (Herbenick et al., 2018) • When you or your partner use fingers/hands/mouths/tongues, where primarily do you prefer your genitals to be touched? ▫ directly on clitoris ▫ on the skin around clitoris (e.g., either side of your clitoris or above or below it) ▫ avoid touching clitoris directly ▫ occasionally brushing over clitoris but not applying pressure to it ▫ on vaginal lips (labia minora or labia majora) ▫ on the mons (the pubic mound; the triangular part where pubic hair grows) ▫ something else, please describe (Herbenick et al., 2018)
Sexual Function	• Female Sexual Quotient (De Lucena & Abdo, 2014) • Brief Index of Sexual Functioning for Women (Frohlich and Meston, 2002) • Investigator-derived survey-Second part using questions from Female Sexual Function Index (Rowland et al., 2020) • Female Sexual Function Index (FSFI) (Nazarpour et al., 2017, 2018) • Satisfaction/Arousal/Desire Scales (Bischof-Campbell et al., 2019; Brody, 2007a, 2007b; Campos et al., 2021; Suschinsky & Chivers, 2018) • Sexual Desire Inventory (Prause et al., 2016)
Beliefs	• Do you talk about sex with your partner/physician? (De Lucena & Abdo, 2014) • Sexual Dysfunctional Beliefs Questionnaire-Female version (Moura et al., 2020; Tavares et al., 2018) • Do you feel that you fall in love more easily than most people? (Fugl-Meyer et al., 2006) • Do you feel that you become sexually aroused more easily than most people? (Fugl-Meyer et al., 2006) • How important is sex in your life at the moment? ▫ not at all important ▫ rather unimportant ▫ neither unimportant nor important ▫ rather important ▫ very important
Emotion Intelligence Well-	• Sexual Modes Questionnaire-Automatic Thoughts Subscale (Moura et al.,

being	2020; Tavares et al., 2017) • Positive and Negative Affect Schedule (Moura et al., 2020; Tavares et al., 2017) • Trait Emotional Intelligence Questionnaire - Short Form (Bischof-Campbell et al., 2019) • Perceived Relationship Quality Components Inventory (Brody & Costa, 2008) • My sexual life is: ▫ very satisfying ▫ Satisfying ▫ rather satisfying ▫ rather dissatisfying ▫ dissatisfying ▫ very dissatisfying (Fugl-Meyer et al., 2006)

NEO, neuroticism extraversion and openness to experience; N/A, non applicable; e.g., example given

Sample:

In eight out of twenty-one articles, participants were exclusively heterosexual (Burri et al., 2009; Campos et al., 2021; De Lucena & Abdo, 2014; Moura et al., 2020; Nazarpour et al., 2017, 2018; Tavares et al., 2017, 2018). In five out of twenty-one articles, participants were mostly heterosexual, but homosexuals, bisexuals and asexuals were included as well. The latest categories, however, cannot be generalized due to insufficient participation (Brody & Costa, 2008; Fugl-Meyer et al., 2006; Herbenick et al., 2018; Prause et al., 2016; Suschinsky & Chivers, 2018). Five studies failed to identify sexual orientation, although some questionnaire items suggested they were mostly referring to heterosexual women (Bischof-Campbell et al., 2019; Brody et al., 2003; Frohlich and Meston, 2002; Leeners et al., 2014; Rowland et al., 2020). For instance, "over the past 4 weeks, how often did you experience discomfort or pain during vaginal penetration?" There were three trials that required women to be "coitally experienced", regardless of sexual orientation (Brody, 2007a, 2007b; R. M. Costa & Brody, 2010).

In three articles, the study sample consisted of postmenopausal women exclusively (Brody et al., 2003; Nazarpour et al., 2017, 2018), while in two, of premenopausal women exclusively (Tavares et al., 2017, 2018). In one publication, college women were included (Frohlich and Meston, 2002). The remaining articles recruited women between the ages of eighteen and ninety-four years old. Three publications included control groups (De Lucena & Abdo, 2014; Frohlich and Meston, 2002; Moura et al., 2020), while two out of twenty-one examined three groups (Nazarpour et al., 2017, 2018).

Behavioral Aspects:

Self and Partnered Genital Touching and Stimulation

Masturbation and genital stimulation were the most popular factors in general regarding female orgasm. It was studied in fifteen articles (Bischof-Campbell et al., 2019; Brody, 2007a, 2007b; Brody et al., 2003; Burri et al., 2009; Costa & Brody, 2010; De Lucena & Abdo, 2014; Fugl-Meyer et al., 2006; Herbenick et al., 2018; Prause et al., 2016; Rowland et al., 2020; Suschinsky & Chivers; 2018; Tavares et al., 2017, 2018). Several studies explored the masturbations' direct association with orgasm (De Lucena & Abdo, 2014; Herbenick et al., 2018; Rowland et al., 2020). Additionally, there were articles that studied it as a part of a larger, more varied factor group. For example as a sexual act in comparison with others in order to declare its effect on orgasm (Bischof-Campbell et al., 2019; Suschinsky & Chivers; 2018 Tavares et al., 2017, 2018) or independently (Fugl-Meyer et al., 2006).

In one study, several aspects and stimulation techniques were introduced. Pressure, location, motion or shape and pattern were found to be the most important aspects of self or partner genital stimulation. Genital touching involves areas such as the clitoris, vagina, labia minora, labia majora, pubic mound. Regarding the clitoris, stimulation varies; directly on the clitoris, around the clitoris (left, right, above, below), lightly brushing over the clitoris. Pressure may be light, medium (moving the skin) or firm (deep into the skin). Shape of movement can be vertical, circular, ovals (tall or wide), horizontal or diagonal, while flicking, pushing, pulling, pressing or tapping the clitoris. These variables were extremely interesting and provided a very valuable source of alternatives regarding sexual behavior around genital touching. Nevertheless, the most interesting aspect was the patterns. Rhythmic motion, switching between two or more motions, repeating the exact same motion, shift between soft and intense motions, changing shape/direction/pressure mode/location, delaying orgasm and building anticipation by touching slower or less often the genital part that will bring subject to orgasm (edging), choosing to stimulate the vulva rather than the vagina, moving closer to a sensitive area and then passing by, moving wetness from vaginal opening to different location on

the vulva, indirectly stimulate the clitoris by moving the surrounding skin, cause multiple orgasms without breaks for rest and putting emphasis on one part of a motion (e.g. a spot or one specific location from a repeated route) are basically the stimulating acts, self or partnered, that this specific publication introduced (Herbenick et al., 2018). Options regarding shape, pattern, pressure and location of genital stimulation are shown in Figure 3.

Body Movement and Awareness

Other practices presented by the rest of the articles included in the review were body (pelvic) movement (with or without clitoral stimulation) from women during coital intercourse in opposition to precise stimulation of clitoris with a completely immobilized body (Bischof-Campbell et al., 2019) and pelvic floor muscle exercises (Nazarpour et al., 2017, 2018), while an effort was made to link body (genital and most importantly vaginal) awareness with orgasm indicating the importance of practices that potentially help build better awareness (Brody, 2007a; Brody et al., 2003; Campos et al., 2021; Suschinsky & Chivers, 2018).

Psychological Aspects:

Depression and Anxiety

Depression alone was studied in two surveys/researches, with regard to orgasm and masturbation – which proved to be a major aspect considering orgasm and sexual life, satisfaction, pleasure, pain and arousal as well (Frohlich and Meston, 2002; Leeners et al., 2014).

The effects of depression and anxiety on orgasm and the source of last orgasm were studied by De Lucena & Abdo (2014) and Prause et al. (2016). As far as one article is concerned, a particular score at the Beck Depression Inventory, twenty or more, was an inclusion criterion for the depressive group (Frohlich and Meston, 2002).

Emotion and well-being

Positive and negative emotions were found in two surveys that studied the role of automatic thoughts during sexual activity (fear of performance, fear of failure) (Moura et al., 2020; Tavares et al., 2017). One research team studied the connection between emotional intelligence and orgasm (Burri et al., 2009), while another studied emotional and sexual functioning (Leeners et al., 2014). One research studied well-being in general (Burri et al., 2009) while another one studied sexual well-being (Fugl-Meyer et al., 2006).

Personality type

Three studies examined personality type (Campos et al., 2021; Leeners et al., 2014; Tavares et al., 2018). The five-factor model of personality includes openness to experience, neuroticism, conscientiousness, extraversion, agreeableness and was used in two studies (Campos et al., 2021; Tavares et al., 2018). Costa (1999, supports that each type has a significant tendency and some characteristic surroundings that support the concept. For example, neuroticism is characterized by dysphoric emotions/negative attitudes, irrational perfectionism and low self-esteem. The remaining publication used the Freiburger Persönlichkeitsmodelle, which includes the following personality traits: nervousness, aggressiveness, depressiveness, irritability, sociability, resiliency, dominance,

inhibition and openness, and is popular mostly to German speaking populations (Leeners et al., 2014).

All included articles with additional information regarding aim, time and place, authors, study sample, measurement tools and results, can be seen at table 3.

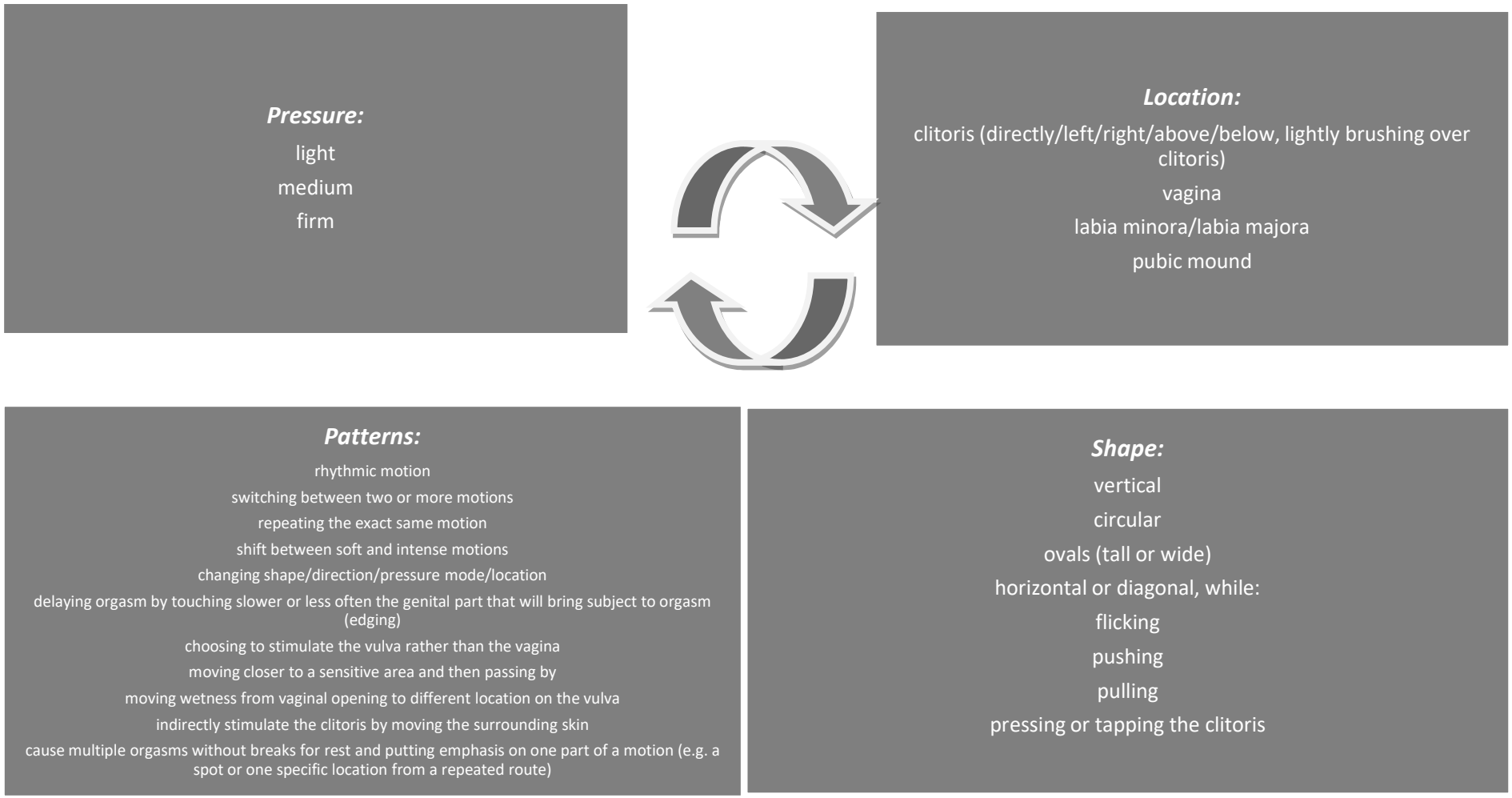

Figure 3. Four basic aspects of genital touching.

Table 3. Included Publications

1	USA (Texas, Austin)	Frohlich and Meston 2002	To study dimension of sexual functioning (arousal, pain, orgasm, pleasure, satisfaction, sexual desire) in women with self-report depressive symptoms.	94 women in active sexual relationships, under no use of antidepressant medication within the past 6 month Depressive group: 47 women who scored more or equal to 20 in the Beck Depression Inventory Control group: 47 women with BDI scores ranging from 0 to 3	• **Beck Depression Inventory (BDI) (21 items).** • **Medical information form.** • **Brief Index of Sexual Functioning for Women (22 items):** desire referring to solitary sexual activity (masturbation), desire referring to sexual activity including a partner (kissing, foreplay, vaginal penetration), pleasure from any sexual activity, orgasm, arousal, sexual pain, sexual relationship satisfaction. Orgasm was assessed using the question ''How frequently have you experienced difficulty reaching orgasm?''	Depressive symptoms were positively associated with sexual problems including pain and arousal. The depressive symptoms group reported more orgasmic difficulties. Depressive symptoms were positively linked to less pleasure and satisfaction. Desire regarding intercourse with a partner was the same for both groups. Desire for self-sexual stimulation was significantly higher in the depressive group.
2	Netherlands (Amsterdam)	Brody et al., 2003	To study the association between physiological and subjective domains and orgasmic consistency during penile-vaginal intercourse, non-coital	38 post-menopausal women, less than 65 years old, with intact uterus and ovaries, no serious diseases, no medication that affects orgasm occurrence.	• **Photoplethysmograph:** vaginal pulse amplitude, female genital arousal • **Subjective Sexual Arousal Scale (prior stimulation and after each erotic stimuli rating from 1-not sexually aroused- to 7-very strongly sexually aroused).** • **Sexual History Questionnaire (in one representative month during the last three months):** sexual practices such as masturbation, coital and non-coital sex	Correlation between subjective arousal and VPA was associated with greater consistency of orgasm during intercourse. The concordance was not significant for orgasm consistency during masturbation or non-coital partnered sex.

			partnered sex as well as masturbation.		• **Marlowe-Crowne Social Desirability Scale (33 items).** Sexual History Questionnaire was used to evaluate orgasm.	
3	Sweden	Fugl-Meyer et al., 2006	To connect sexual techniques and erotic perceptions with sexual function and define their impact on orgasm and sexual well-being.	1.335 women between the ages 18 and 74 years old, mostly heterosexual. Five cohorts defined by age: 18-24, 25-34, 35-49,50-65, 66-74 years old.	• **Sexual background questionnaire (13 items):** Sexual activity that caused the first orgasm, sexual techniques, masturbation techniques, quality of orgasm • **Current erotic perceptions questionnaire:** erotic perceptions, fantasies • **Importance of sex at precise moment scale (5 items).** • **Orgasmic dysfunction scales (6 items).** • **Sexual Well-Being scale (6 items).** Orgasm was assessed using the first tool.	3% of all women who reported if they had ever experienced orgasm reported never having one. 88% of 18–24-year-olds had engaged in penile vaginal intercourse. The prevalence for all other cohorts was 96-99%. Regarding all cohorts, most popular sources of orgasm were PVI and masturbation. Nearly 90% of the women had received or given partner stimulation manually. More than 90% of the women had had penetrative intercourse, but between 39% and 46% had never obtained orgasm through this activity. 18–65-year-olds had experienced five out of seven partnered related sexual acts in a lifetime. 66- to 74-year-olds had experienced a median of three. The most preferable self-stimulation technique was clitoral stimulation. 55% of all participants reported the ability to achieve orgasm solely by penis moves.

						Less than half reported the ability to reach orgasm without clitoral stimulation. Most women reported that orgasms were better with a penis in the vagina. Sexual fantasies and importance ascribed to sexuality prevailed for more than 80% of those younger than 50. 60% of the oldest women had sexual fantasies and nearly half of them attached importance to their own sexuality. 15% of those younger than 50, but considerably fewer of the 50- to 74-year-olds felt more easily aroused than most. There was a significant likelihood of concurrence between no manifest orgasmic dysfunction and lifetime orgasm reached by manual or oral genital stimulation together with the perception that sexuality is important. Reaching coital orgasm solely by penile movements and early age of first orgasm were significantly correlated with orgasm. Women with no manifest orgasmic dysfunction were much more likely to be satisfied or very satisfied with their sexual life than those with manifest dysfunction. Manifest and mild orgasmic dysfunctions are more likely to co-occur with a relatively low level of overall

						sexual well-being.
4	United Kindom (Paisley)	Brody, 2007	To connect vaginal orgasm rather than clitoral orgasm with better mental health, relationships, friendships, sex life and life in general.	1256 women who had at least once penile-vaginal intercourse Age: 19-74	• **Frequency of sexual desire scale (4-point from ''never'' to ''often'').** • **Satisfaction item scales:** number of times women engaged in coitus/masturbation in the last 30 days, having ever had an orgasm outside coitus context, having the first ever orgasm from penile-vaginal intercourse/masturbation. Vaginal orgasm was assessed by the question: ''Have you ever had an orgasm solely through the movement of the penis in the vagina?''	Vaginal orgasm has been experienced from most women (lifetime prevalence 57%). Vaginally orgasmic women reported higher levels of sexual desire and better satisfaction with sex life, partnerships, friendships, mental health, and life in general. Vaginally orgasmic women were less likely to have engaged in masturbation in the last 30 days in comparison with vaginally anorgasmic women. Women who reported that their ever first orgasm was triggered by coitus were more likely to report vaginal orgasm than women who had their first orgasms by different sexual acts. Regarding masturbation vaginally orgasmic women were more likely to stimulate the vagina during masturbation. The majority of vaginally orgasmic as well as vaginally anorgasmic women reported that orgasm was better with a penis inside the vagina.
5	United Kingdom (Paisley)	Brody, 2007	To associate greater physiological as well as subjective domains with penile-vagina	27 undergraduate psychology students, exclusively or at least predominantly heterosexual, who currently had a	• **Photoplethysmograph:** vaginal pulse amplitude, female genital arousal • **Calibrated leverthat its position determined how many of 10 lights were illuminated (1 light-no genital sensations to 10 lights-complete**	Orgasm consistency was significant for the increasing stimulus intensity condition. Orgasm consistency during intercourse was unrelated to orgasm consistency during masturbation. Genital-subjective concordance was found to be better among coitally orgasmic women rather than

			orgasm consistency rather than with masturbatory or non-coital orgasm consistency.	partner.	**wetness of the vagina):** subjected genital arousal • **Sexual History Questionnaire:** contraception, coital and non-coital sexual acts, sexual orientation, masturbation, orgasm consistency during 1 representative month in the past three months. Orgasm was evaluated by completing the last measurement.	coitally anorgasmic women.
6	Portugal (Lisbon)	Brody and Costa, 2008	To evaluate the relationship between sexual behaviors of orgasm trigger and immature defenses.	94 Portuguese healthy women, mean age 27.6, mostly heterosexual.	• **Frequencies of Sexual Behavior Questionnaire (4 items):** sexual activity and orgasm occurrence. • **Defense Style Questionnaire (40 items)**: psychological defense mechanisms. • **Marlowe - Crowne Social Desirability Scale.** • **Perceived Relationship Quality Components Inventory (18 items).** Orgasm was assessed by the first questionnaire.	PVI orgasmic consistency correlated inversely with immature defenses. Half of the component immature defenses were significantly inversely associated with vaginal orgasmic consistency. Isolation of affect, Autistic fantasy, less use of Devaluation, Displacement, Dissociation and Passive aggression were found to be inversely associated with vaginal orgasm. Women who had masturbated during the last month showed use of immature defenses (Passive aggression, Denial, Autistic Fantasy) compared with those who did not masturbate. Compared with women who did not have an orgasm from non-coital partner sex during the month, women who did used more Dissociation.

						Any vaginal orgasm during the last month was linked to less use of immature defenses. Penile vaginal intercourse with additional clitoral stimulation during the last month was connected with more use of immature defenses.
7	United Kindom (London)	Burri et al., 2009	To study the ways emotional intelligence affects female orgasm regarding intercourse and masturbation.	2035 heterosexual women who had engaged in coitus at least once in their lives. Age: 21-84 years old Original sample: 8418	• **Demographic self-completion questionnaire:** behavior and functioning (age at first orgasm, abuse), health, lifestyle. • **General behavior questionnaire includingTrait Emotional Intelligence Questionnaire - Short Form (30 items):** emotional intelligence (emotionality), self-control, sociability, well-being. Evaluation of orgasm: Responders filled a 7-point Likert scale from ''Never'' to ''Always", answering the following questions: ''Overall, how frequently do you experience an orgasm during intercourse?" and "Overall, how frequently do you experience an orgasm during masturbation?"	Cesarean section was associated with lower frequency of orgasm during masturbation. History of physical abuse during childhood was linked to lower orgasm frequency during intercourse. Age, BMI, marital status, menopausal status, ever having been pregnant, hysterectomy, and childhood history of sexual abuse were not found to affect orgasm during masturbation or coitus. Global emotional intelligence and years of education did not have any association. Total score of emotional intelligence was positively related to higher frequency of orgasm during intercourse and during masturbation. The relationship between emotional intelligence and orgasm frequency during masturbation was stronger than the relationship between emotional intelligence and orgasm frequency during coitus.
8	United Kingdom (Paisley)	Costa and Brody, 2010	To study connections between several sexual	323 coitally experienced women Original sample: 405	• **Marlowe–Crowne Social Desirability Scale-Short Form (13 items).** • **Sexual Behavior Questionnaire (in a recent representative month)**: penile	Immature defenses were inversely associated with vaginal orgasm and age (PVI sample), but directly associated with masturbation, masturbation during PVI, anal sex, oral sex in the absence of same-day PVI,

			acts and immature defenses, while differentiating non coital partnered sex, clitoral or vaginal focused masturbation and non coital sex occurring the same day with PVI or not occurring. To test the hypothesis that Alcohol Consumption Before Sex is inversely related to vaginal orgasm consistency, but unrelated or directly correlated to frequency of other sexual	Mean age: 25.89 Most of them were Scottish. Most of them were university students.	vaginal intercourse with or without clitoral stimulation, orgasm frequency, masturbation (vaginally oriented, clitorally oriented, with vibrator), manual stimulation by partner (clitoral, vaginal, using a vibrator), anal sex, oral sex. • **Alcohol Consumed Before Sex Scale (rating from 1-I rarely or never drink- to 7-a bit drunk most times)**. • **Defense Style Questionnaire (40 items):** psychological defense mechanisms. Orgasm was assessed using the second measurement.	and vibrator use. ACBS, masturbation during PVI orgasm and anal sex with PVI occurring the same day were significant predictors of immature defenses. (PVI sample) Neurotic defenses were inversely correlated with vaginal orgasm consistency as well as frequency, but positively associated with masturbation orgasm during PVI, orgasm occurring from clitoral stimulation (self or by partner) and frequency of clitoral stimulation by partner. Mature defenses were inversely correlated with ACBS and frequency of self-clitoral stimulation orgasm. Immature defenses and clitorally focused masturbation orgasm predicted ACBS. ACBS was inversely predicted by mature defenses. Vaginal orgasm consistency correlated inversely with autistic fantasy and displacement. (PVI sample) Masturbation during PVI orgasms correlated directly with displacement and splitting. Frequency of clitorally focused masturbation orgasm correlated directly with autistic fantasy, denial and isolation of affect. Frequency of anal sex orgasm (with same day PVI) correlated directly with projection, devaluation, denial, dissociation and somatization.

			behaviors. To test the possibility that immature defenses explain associations between ACBS and these sexual response and behavior effects.			ACBS correlated directly with projection, aggressiveness, autistic fantasy, displacement, denial and somatization, but correlated inversely with rationalization. Vibrator orgasm frequency was associated with somatization, autistic fantasy and isolation of affect.
9	Brazil	De Lucena and Abdo, 2014	To identify the factors that contribute to female orgasm and the factors that diminishes it.	96 heterosexual women, age: 18-61, no medication, no chronic diseases, no arousal problems, at least one year in a relationship Control Group: Orgasmic Difficulty (OD) (Women who did not achieve orgasm after a normal arousal phase)	• **Beck Depression Inventory and Beck Anxiety Inventory (21 items each).** • **Sexual Questionnaire (5 items)**: sexual behavior (talk about sex, masturbation, education/information about sex, frequency) • **Female Sexual Quotient (10 items)**: sexual dysfunction (desire, orgasm, arousal, satisfaction) Orgasm was assessed using the FSQ.	Orgasm difficulties were positively associated with depression, anxiety and low sexual desire Orgasm ability was positively associated with masturbation, high level of education and having received sexual education as adolescent
10	Switzerland	Leeners	To evaluate	191 women at the	• **Structured Psychopathological**	10% of women reported orgasmic difficulties over the

	(Zurich)	et al., 2014	the effect of psychopathological and personality factors on orgasmic difficulties among women between the ages 30-50.	ages of 30, 35, 41 and 50. Original sample 299 women (when cohort study started at age of 30)	**Interview and Rating of the Social Consequences of Psychological Disturbances for Epidemiology (SPIKE) (30 items):** sexual problems (desire, emotional/functional problems) • **Symptom Checklist 90 Revised (90items):** psychopathology (anxiety, depression, hostility, interpersonal sensitivity, obsessive-compulsive symptoms, paranoid ideation, phobic anxiety, psychoticism, somatization). • **FreiburgerPersönlichkeitsInventar (FPI) (138 items):** personality trait (nervousness, aggressiveness, depressiveness, irritability, sociability, resiliency, dominance, inhibition, openness). • **Self-esteem (confidence toward self) (6 items) and mastery (sense of control) (7 items) scales.** Orgasm was assessed by reporting ''delayed or lack of orgasm'' after a positive answer to the question "Were you dissatisfied with your sex life or did you have any sexual problems during the past twelve months?"	observation period. Time (age) did not show a significant effect on orgasmic difficulties. Orgasm difficulties accounted for 34.9% of any sexual problem at age 30, 28.4% at age 35, 41% at age 41, and 47.2% at age 50. All psychopathology factors were moderately associated with orgasmic difficulties. Inhibition, resiliency and dominance were the only personality traits that were not linked to orgasmic difficulties.
11	USA (New	Prause et al., 2016	Identifying the most common area	88 women, mostly Hispanic, mostly heterosexual, mostly	• **Sexual arousal scale (seven points from "not at all" to "very").**	If the primary area stimulated to cause orgasm was reported to be clitoris or vagina, the secondary area

	Mexico)		contributing to orgasm, if the most recent orgasm source is the same with the most usual. To examine if women assessing orgasm through clitoral stimulation present superior mental health and sexual functioning.	single.	• **Centers for Epidemiological Study Depression Scale (CES-D) (20 items).** • **Beck Anxiety Inventory (21 items).** • **Personal and Sexual History Questionnaire:** background, sexual behaviors, sexual feelings, practices that cause orgasm, body areas contributing to orgasm, confidence in describing the orgasm experience. • **Female Sexual Distress Scale Revised (FSDS-R) (13 items).** • **Sexual Desire Inventory (SDI) (14 items).** Orgasm was assessed through the question: ''Which of these best describes what you were doing that caused this last orgasm?'' Possible answers included: Vaginal penetration alone/ Clitoral stimulation/ Do not have orgasms/ Another method.	was found to be the other. Frequently, women were not able to understand their orgasm experience. The body area caused the most recent orgasm was the area that contributed the most to orgasm. Depression and anxiety were not predicted by women's source of most recent orgasm. Women who reached the most recent orgasm through clitoral stimulation reported more sexual arousal to the sexual films they were told to watch, compared to women who used vaginal stimulation. Women who reported that clitoral stimulation contributed more to orgasm had a higher desire to masturbate. Sexual distress, overall sexual satisfaction and orgasm intensity were not predicted by source of orgasm.
12	Portugal	Tavares et al., 2017	To investigate the role of negative automatic thoughts as well as positive and negative affect	926 heterosexual premenopausal women, age 18-57, most of them in non-marital relationship	• **Demographics Questionnaire**: age, gender, sexual orientation, education, medical history, relationship issues, sexual health and behavior. • **Frequency of Sexual Activity and Frequency of Orgasm Questionnaire (10 items).**	Most popular way for women to achieve orgasm was clitorally focused orgasm. Penile vaginal intercourse with additional clitoral stimulation, partner stimulating clitoris and receiving oral sex followed respectively. Failure thoughts and lack of erotic thoughts negatively predicted orgasm.

			during sexual activity and to evaluate the mediator role of these factors in the relation between sexual activity and orgasm occurrence.		• **Sexual Modes Questionnaire-Automatic Thoughts Subscale (33 items).** • **Positive and Negative Affect Schedule (20 items):** affect, emotion • **Socially Desirable Response Set (5 items).** Orgasm was assessed using the second tool.	Positive affection during sexual activity was a significant positive predictor of female orgasm. Concurrently, positive affection and automatic negative thoughts were found to be significant mediators between sexual activity and orgasm.
13	Iran	Nazarpour et al., 2017	To compare the outcomes of two interventions (Kegel exercises and sexual education) in menopausal women in regard to sexual function.	145 postmenopausal women, generally healthy, married, sexually active with husband, no use of hormonal medication, natural menopause within the previous three years. Three groups: Kegel exercise, sex education and control group.	• **Female Sexual Function Index (FSFI) (19 items):** desire, arousal, lubrication, orgasm, satisfaction, and pain. • **Are you satisfied with the education you received and has it improved your menopausal conditions?** • **Was this educational program effective in improving your sex life?** Orgasm was assessed using the first tool.	Sexual education group improved the overall and arousal scores. Kegel exercise group improved orgasm and satisfaction domains. There were no significant differences regarding overall scores between intervention groups.
14	Portugal	Tavares et al., 2018	To study in which way several psychological trait features	1002 heterosexual women, age:18-72, non-clinical, most of them premenopausal	• **Demographics Questionnaire**: age, gender, sexual orientation, education, medical history, relationship issues, sexual health and behavior.	Most popular way for women to achieve orgasm was clitorally focused masturbation. PVI with additional clitoral stimulation, partner stimulating clitoris and receiving oral sex followed respectively.

			affect female orgasm.		• **Frequency of Sexual Activity and Frequency of Orgasm Questionnaire (10 items).** • **Sexual Inhibition/Sexual Excitation Scales-Short Form (14 items)**. • **NEO-Five Factor Inventory (44 items)**: personality type. • **Sexual Dysfunctional Beliefs Questionnaire-Female version (40 items)**: beliefs around sexual dysfunction (sexual conservation, desire & satisfaction as sins, affection, age/body image/motherhood perceptions) • **Marlowe-Crowne Social Desirability Scale (5 items)**. Orgasm was assessed using the second tool.	Inhibition associated with fear of performance and fear of failure consequences was a significant orgasm difficulty predictor. Body image beliefs were positively associated with orgasm occurrence. Body image beliefs dimension was not a significant moderator of the relation between sexual activity frequency and orgasm frequency. Extraversion was the only positively associated with orgasm personality type, not consistently though.
15	Canada (Ontario)	Suschinsky and Chivers, 2018	To study the link between sexual concordance and orgasmic consistency in regard to several sexual acts, using different ways	Study 1: 51 cisgender women between the ages of 18 and 45, no serious health problems, no medication that affects sexual responses, no pregnant or trying to conceive.	Study 1: audiovisual stimuli eight 90-second films): • **Photoplethysmograph:** vaginal pulse amplitude, female genital arousal • **Self-Report Questionnaire (using Keypad Buttons) (2 items: overall feelings and perception of genitals):** subjective genital arousal • **Self-Report Sexual Activity and Orgasm**	Orgasm consistency for penile-vaginal intercourse without clitoris stimulation was significantly lower than for PVI with additional clitoris stimulation and for masturbation. OC was significantly higher for masturbation in comparison with PIV with clitoral stimulation and non coital partnered sex. Sexual concordance based on overall feelings was significantly correlated with sexual concordance based

			to assess stimuli.		**Consistency Questionnaire (3 items):** orgasm in regard to sexual activity (penile vaginal intercourse, non coital partnered sex, masturbation). • **Demographic Questionnaire.** • **Kinsey Sexual Attraction Scale (rating from 0-exclusively heterosexual- to 6-exclusively homosexual):** sexual orientation Orgasm was evaluated by using the third measurement.	on genital arousal. Neither of them was correlated with OC during any type of sexual activity. OC during masturbation was correlated with OC during penile-vaginal intercourse with or without external stimulation and significantly correlated with OC during non coital partner sex.
				Study 2: 44 cisgender women between the ages of 18 and 38 years, no serious health problems, no medication that affects sexual responses, no pregnant or trying to conceive.	Study 2: twelve 90-second audio narratives: • **Photoplethysmograph:** vaginal pulse amplitude, female genital arousal • **Self-reported Sexual Arousal Scales (4 items rating from 0-no arousal at all- to 9-most arousal ever experienced).** • **Self-Report Sexual Activity and Orgasm Consistency Questionnaire:** orgasm in regard to sexual activity (penile vaginal intercourse, oral sex, masturbation) • **Demographic Questionnaire.** • **Kinsey Sexual Attraction Scale (rating from 0- exclusively heterosexual- to 6-exclusively homosexual): sexual**	Study 2 OC during PVI was found to be lower in comparison with oral sex with a man and masturbation. OC during oral sex was found to be significantly lower than OC during masturbation. Sexual concordance based on overall feelings was significantly correlated with sexual concordance based on genital arousal. Sexual concordance based on overall feelings of sexual arousal was significantly correlated with OC during PVI. OC during PVI was significantly correlated with OC during oral sex and masturbation. OC during oral sex was also correlated with OC during

					orientation Orgasm was assessed by using the third measurement.	masturbation.
16	Switzerland (Zurich)	Bischof-Campbell et al., 2018	To investigate body movement and precise rubbing of the clitoris with an immobilized body, with or without external stimulation of clitoris, during intercourse.	1,237 women aged between 18 and 75 years.	• **Demographic questionnaire:** age, education, occupation, relationship status/duration, number and age of children. • **Arousal techniques scales (6 itemsrating from 1-not at all- to 6-totally):** (body movement, body immobilization, precise rubbing), orgasm frequency. • **Frequency of orgasm scales (2 items rating from 1-never- to 5-always):** penis vaginal intercourse with/without additional clitoral stimulation). Orgasm was assessed using the last tool.	Women were more likely to experience orgasm during penile vaginal intercourse with additional clitoral stimulation. Frequency of orgasm during vaginal intercourse with or without simultaneous clitoral stimulation was positively associated with a preference for body movement during arousal. Precise rubbing of the clitoris with an immobilized body is not associated with more orgasms.
17	USA	Herbenick et al., 2018	To assess the women's experiences in regard to orgasm, sexual pleasure and genital touching in order to clarify their	1,055 women between 18 and 94 years old. Most of them were heterosexual and currently in a relationship with a man.	• **OMGYes Pleasure Report survey (30 items):** demographic information, sexual background information (age, gender, race/ethnicity, education, and region of country, sexual behaviors, sexual attitudes, relationships, sexual satisfaction, and experiences with genital touching). • **Orgasm consistency and quality questionnaire (7 items, rating with**	36.6% of intercourse-experienced women reported that they needed clitoral stimulation in order to reach orgasm during intercourse, while 36% reported that although it wasn't necessary, it did improve orgasms. 18.4% reported that vaginal penetration alone during intercourse was sufficient for orgasm, while 9% reported no coital orgasms at all. 43% of women reported having an orgasm at least 75% of PVI with clitoral stimulation times, while 29%

			preferences.		**yes/no or multiple choice):** Frequency of orgasm during penile vaginal intercourse, orgasm experience and sexual act. • **Genital touching questionnaire (7 items).** Orgasm was assessed through the last two measurements.	reported experiencing orgasm at least 75% of PVI without additional clitoral stimulation. More than half of women reported that spending time to build arousal, having a partner who knows what they like and emotional intimacy improve orgasm. Regarding location while touching genitals, most women preferred directly on the clitoris. Regarding pressure, most women preferred medium to light. Regarding shape, most women preferred up and down as well as circle moves. Regarding pattern, most women preferred a repeated rhythmic motion.
18	Iran	Nazarpour et al., 2018	To study the effects of pelvic floor muscle exercises on sexual function on menopause women.	97 Iranian post menopause women, 40-60 years old, married and sexually active with husband, generally healthy, no use of hormonal medication, natural menopause. Original sample: 104 Intervention group: PFM exercises Control group: general information.	• **Female Sexual Function Index (FSFI) (19 items):** desire, arousal, lubrication, orgasm, satisfaction, and pain. • **Are you satisfied with the education you received?** • **Was this educational program effective in improving your sexual function?** FSFI was used to assess orgasm.	There were significant differences between the two groups regarding arousal, orgasm and satisfaction domains of sexual function
19	USA,	Rowland	To determine the alignment	2,215 women at least	• **Investigator-derived survey (42 items)**	Masturbation and partnered sex activities were

	Hungary	et al., 2020	of masturbation and partnered sex activities and how different or similar sexual acts affect orgasm.	18 years of age. Most of them had at least a Post High School Certification. Most of them were currently in a sexual relationship.	**(two parts):** **Demographics:** lifestyle, medication, medical history, sexual history (orientation, relationship status/satisfaction/characteristics). **Sexual information using items from Female Sexual Function Index (FSFI) when possible:** Sexual response, arousal, pain, partnered sex, masturbation, desire, lubrication, partner distress, orgasmic response/distress. • **Reasons for masturbation and reasons for orgasmic difficulty during masturbation (multiple choice) (8 and 13 items respectively).** • **Single major reason for masturbation and single major reason for orgasmic difficulty during masturbation (multiple choice).** • **Kinds of activities during masturbation (11 items).** • **Frequency of masturbation scale (rating from 1-never- to 9-one or more times daily).** Orgasm was assessed during the second part of the first measurement.	moderately aligned. Causes of masturbation orgasmic difficulty and causes of partnered sex orgasmic difficulty were moderately aligned. Women who showed better alignment of activities showed better orgasmic response during partnered sex and were more likely to prefer partnered sex over masturbation.
20	Portugal	Moura et	To detect differences in	500 heterosexual women (250 with	• **Demographic Questionnaire:** age, nationality, gender, ethnicity, religion,	Lack of erotic thoughts, inhibition, lack of positive affect and negative automatic thoughts during sexual

		al., 2020	regard to sexual inhibition, sexual excitation, sexual beliefs, automatic negative thoughts and affect throughout sexual activity between women who report orgasm difficulties and women who do not.	orgasm difficulties & 250 without orgasm difficulties), most of them in non-marital relationship Control Group: 250 women without orgasm difficulties	education, medical history, medication. • **"Have you experienced any difficulty in reaching orgasm in the last 6 months that has caused you significant distress?"**: sexual difficulties • **Frequency of Sexual Activity and Frequency of Orgasm Questionnaire (10 items).** • **Sexual Inhibition/Sexual Excitation Scales- Short Form.** • **Sexual Modes Questionnaire-Automatic Thoughts Subscale (14 items).** • **Sexual Dysfunctional Beliefs Questionnaire-Female version (40 items):** beliefs around sexual dysfunction (sexual conservation, desire & satisfaction as sins, affection, age/body image/motherhood perceptions) • **Sexual Modes Questionnaire-Automatic Thoughts Subscale (33 items).** • **Positive and Negative Affect Schedule (20 items):** affect, emotion Orgasm was assessed using the third tool.	activity were all higher in orgasm difficulty group.

21	Portugal (Lisbon)	Campos et al., 2021	To examine how sexual responsiveness is connected with personality type and awareness of body, time as well as surrounding space.	136 heterosexual Portuguese women. Average age 29.97. 15 were excluded from the original sample due to use of alcohol and/or cannabis during their last intercourse.	• **NEO-Five Factor Inventory (20 items):** Personality type. • **Sexual satisfaction, desire and arousal scales (in regard to last intercourse, rating from 1-absolutely nothing- to 7-extremely)**. • **Orgasm in regard to sexual activity scales (rating 0-orgasm did not occur- or 1 –orgasm did occur)**: Orgasm occurrence (coitus including clitoris stimulation, coitus not including clitoris stimulation, non coital). • **Visual Analogue Scale (seven drawings of a human body)**: body awareness. • **Visual Analogue Scale (seven drawings of a room)** time awareness, space awareness. • **Time Scale (how intensely did participants perceived time during last intercourse, rating from 0-not at all to 10-extremely intensely)** Orgasm was assessed using the third measurement.	Orgasm and sexual satisfaction were correlated with higher conscientiousness and extraversion and less neuroticism. Desire and arousal were linked with higher extraversion and less neuroticism. Satisfaction, desire and arousal were associated with higher body awareness and less time awareness. Coital orgasm without clitoral stimulation was linked with lack of time awareness. Additionally, it was related to less neuroticism and greater extraversion and openness to experience. Non coital sex orgasm correlated with higher extraversion. Higher body awareness, openness to experience, extraversion, conscientiousness as well as lower neuroticism and being in a relationship predicted satisfaction. Greater body awareness, lower neuroticism, and higher openness to experience predicted desire.

BDI, Beck Depression Inventory; VPA, vaginal pulse amplitude; PVI, penile-vaginal intercourse; BMI, Body Mass Index; ACBS, alcohol consumed before sex; FSQ, Female Sexual Quotient; OC, orgasmic consistency; FSFI, Female Sexual Function Index

DISCUSSION

Depression and anxiety were positively associated with orgasm difficulties, at least moderately (De Lucena & Abdo, 2014; Frohlich and Meston, 2002; Najafabady et al., 2011; Prause et al., 2016). More specifically, depression was linked to less satisfaction and pleasure, while it was also associated with arousal and pain problems which impair orgasm (Abdo et al., 2004; Frohlich and Meston, 2002). Depression and anxiety were not predicted by women's source of most recent orgasm (Prause et al., 2016). As for personality type, Extraversion (Campos et al., 2021; Tavares et al., 2018), Consciousness (Campos et al., 2021) and ''Openness to experience" personality types (Campos et al., 2021; Harris et al., 2008) were positively correlated with orgasm. Inhibition, Dominance and Resilience were the only personality types unrelated to orgasm difficulties. Finally, previous researchers have suggested that (Campos et al., 2021; Tavares et al., 2017) there is an association between neuroticism and orgasm difficulties.

In regard to genital touch from a partner or self-stimulation (of clitoris), there is a wide variety considering pattern, shape, location and pressure (Herbenick et al., 2018; Matsick et al., 2016). Masturbation is positively associated with orgasmic ability (De Lucena & Abdo, 2014; Fugl-Meyer et al., 2006; Hurlbert & Apt, 1995; Suschinsky&Chivers, 2018; Tavares et al., 2017, 2018). Clitoris stimulation during penile vaginal intercourse has been found to improve orgasm consistency (Bischof-Campbell et al., 2019; Herbenick et al., 2018; Suschinsky & Chivers, 2018; Tavares et al., 2017, 2018). An alignment was observed between the source of the first orgasm ever and orgasm occurrences from the same source (vagina) (Brody, 2007b). Self-stimulating the vagina during masturbation was more common among vaginally orgasmic women (women who could reach orgasm solely by penis movements) (Brody, 2007b). Preference for clitoral stimulation to achieve orgasm was connected with higher desire for masturbation (Prause et al., 2016). Masturbation activities and partnered sex acts were aligned (De Brujin, 1982; Left & Israel, 1983; Rowland et al., 2020), while masturbation orgasmic difficulties and coital orgasmic difficulties were similar. Better alignment between masturbation and coital activities was linked to better orgasmic responses and greater preference for partnered sexual activity over solitary activity (Rowland et al., 2020). Additionally, there was a connection between orgasm consistency during masturbation (Mastick et al., 2016; Suschinsky & Chivers, 2018) and orgasm consistency during partnered sex (Suschinsky & Chivers, 2018). However, there have been data supporting a lack of connection between masturbation orgasm occurrence and coitus orgasm occurrence (Brody et al 2007b). In regard to genital (clitoral) touching, the majority of women reported preferring medium to light pressure, up and down or circle moves, a repeated rhythmic motion and direct touching on the clitoris (Herbenick et al., 2018). However, masturbation was associated with some negative factors as well, including depressive symptoms (Frohlich & Meston, 2002) and immature defenses (Brody & Costa, 2008; Costa & Brody, 2010).

There was a greater frequency of orgasm in women who believed that a positive body image is a fundamental aspect of sexual function and satisfaction (Tavares et al., 2018). Body awareness was found to be a predictor of sexual satisfaction (Campos et al., 2021). Coitally orgasmic women presented better alignment between objective (measured by a photoplethysmograph) and subjective (personal perspective) genital arousal than coitally anorgasmic women (Brody, 2007b, Brody et al., 2003). Orgasm consistency was associated with subjective sexual arousal (based on overall feelings), which was associated with objective genital arousal (based on photoplethysmograph measurements) (Suschinsky & Chivers, 2018). Body movement during arousal was linked to orgasm occurrence and orgasm frequency during intercourse regardless of clitoral stimulation, while precise rubbing directly on the clitoris without body movement was not (Bischof-

Campbel et al, 2019). Pelvic floor muscle exercises improved orgasm and other sexual aspects in postmenopausal women (Nazarpour et al., 2017; 2018).

Sexual education as an adolescent (De Lucena et al., 2014; Najafabady et al., 2011) and high level of education (Abdo et al., 2004; De Lucena et al., 2014) improved orgasm consistency. Positive affection improved orgasm occurrence (Moura et al., 2020; Tavares et al., 2017). However, positive affection was found to act as a mediator between sexual activity and orgasm (Tavares et al., 2017). Emotional intelligence (Burri et al., 2009) and satisfactory mental health (Hawton et al., 1994; Laumann et al., 1999) were associated with greater orgasm frequency (Burri et al). Greater satisfaction with relationships, sex life, mental health as well as greater levels of sexual desire were linked to vaginal orgasm (Brody, 2007a) Oppositely, low levels of sexual well-being were associated with manifest and mild orgasmic difficulties (Fugl-Meyer et al., 2006). Emotional intimacy (Herbenick et al., 2018), taking time to build arousal (Herbenick et al., 2018) and having a partner who knows what their partner likes (De Bruijn, 1982; Herbenick et al., 2018) were found to be components that improve orgasm.

The greatest limitation of this study was that we were unable to generalize conclusions based on the sample size. Moreover, the sample was not representative of bisexual and homosexual women. Another limitation was that none of the researches studied the effects of contraception methods on female orgasm or the effect of multiple partners.

Future studies should address subjects such as: if and how sexual orientation affects female orgasm, if a steady partner provides greater sexual pleasure and higher orgasm frequency or if we should support multiple partners as a healthy behavior considering achieving orgasm and which aspects of orgasm does contraception influence – does it affect the physical features only or does it provide psychological insurance as well?

It appears that physical and emotional health as well as overall well-being affects female orgasm, therefore promoting women's state of body and mind and teaching them how to seek sources to improve physical and mental health is crucial. Additionally, there are data supporting that women lack information regarding behaviors and practices that can upgrade their intimate lives. Midwives retain a key role in the healthcare system and can be an important part of communities. Therefore, consulting sessions, working alongside mental health workers and offering space for women to express themselves about sexual aspects are methods that may support women's overall well-being and sexual health. Furthermore, it is equally critical to teach and train women about sexual aspects (anatomy, physiology, contraception, masturbation, techniques, etc.), especially at sensitive times such as puberty, postpartum period and postmenopausal period. There are many ways and resources midwives can use to fulfill that purpose. These are direct speeches and presentations, private consulting sessions or physical and online classes for instance. COVID and post COVID era has taught us all how to effectively contact and communicate through the internet, accommodating educational needs like these (Vivilaki & Asimaki, 2020).

CONCLUSION: Masturbation, genital stimulation, body awareness and movement seem to assist female orgasms. Negative emotions, depression and a decreased level of overall well-being are factors that impair it. Due to the low participation rate, general conclusions cannot be drawn regarding bisexual and homosexual women.

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