

Overcoming Misconceptions in School-Based Sex Education. Insights from a Study on Female Orgasm Consistency

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Abstract

School-based sex education should be an important resource for adolescents to dispel misconceptions about sexuality. The main objective of this study is to investigate the relationship between female orgasm consistency and emotional traits. A sample (N = 1155) of young adult women (age 23 +/- 3 years) recruited from five German universities was asked to complete questionnaires on orgasm consistency, emotional traits, and sexual behavior. Additionally, respondents' subjective beliefs about predictors influencing orgasm consistency were collected. The results of this study indicate – contrary to prevailing subjective beliefs – that emotional traits have no substantial impact on female orgasm consistency. Implications of research findings for school-based sex education are discussed.

Keywords: sex education; female orgasm; emotional traits; misconception; self-disclosure

1. Introduction

Human sexuality “is a cultural object” (Mottier, 2008, p. 2), and an essential part of our personality and identity. We are not slaves to a blind sexual instinct. Human sexual behavior has to be learned (as with all social behavior, e.g., food culture). One salient way of learning sexual behavior is through school-based sex education. In countries with school-based sex education, girls and boys perceive school as a significant source of information on sexual issues (Heßling & Bode, 2015). School-based sex education curricula are designed to reduce sexual risks (e.g., sexually transmitted diseases), provide accurate information on human sexuality, and enhance skills necessary for sexual well-being. Additionally, school-based sex education should enhance sexual self-esteem and dispel myths surrounding sex.

Sexual science ought to be the basis of sex education. Unfortunately, not all teachers are adequately trained to teach sex education. Misconceptions on sexuality are rampant in the wider society and are also prevalent among teachers in schools. Misconceptions (e.g., girls cannot get pregnant if they have sex while on their period) can harm students reaching from mild emotional disturbances to severe health problems. One of the sexual myths floating around is that girls and women should expect to orgasm during penile-vaginal intercourse. Part of this myth is the belief – widely spread in society, especially in feature articles in women’s magazines (Lavie, 2004) – that the feminine contribution to the achievement of orgasm is to overcome sexual inhibitions, to relinquish self-control, to accept one’s own emotions, and to be open to new experiences.

Theories on the biological and evolutionary function of female orgasm are numerous and highly controversial. They reach from the pair-bonding theory (the female orgasm facilitates monogamous bonding; Morris, 1967) over the byproduct theory (the female orgasm as a nonfunctional embryological bonus of evolution; Llyod, 2005) to

the “remnant theory” (the female orgasm as a remnant from copulation-induced ovulation; Pavličev & Wagner, 2016). In sum, all these theories cannot explain why some women achieve an orgasm with a minimum of stimulation, whereas other women fail to orgasm despite appropriate stimulation. Selection has not favored women with high orgasm consistency (orgasm consistency means how likely an orgasm is to occur per times attempted). It is quite understandable that students and adults are motivated to assign causes to high or low orgasm consistency. According to attribution theory (Heider, 1958), people primarily prefer to explain others’ behavior as being due to their personal traits.

In the past, various attempts have been made to detect differences between “high orgasmic” and “low orgasmic women”. Some of these studies presented evidence of a relationship between female orgasm consistency and personal traits like openness to experience, emotional intelligence, fear of loss of control, or assertiveness (Burri et al., 2009; Harris et al., 2008). However, all observed correlation coefficients were very small. Other studies found no significant or close to zero correlations between orgasm consistency and personal traits (Fisher, 1973; Zietsch et al., 2011).

Overall, little evidence exists to suggest that personal traits play a critical role in enhancing or reducing female orgasm consistency. However, a research group led by Brody argued that it is necessary to differentiate between orgasms purely triggered by penile-vaginal intercourse and orgasms triggered by intercourse with additional manual clitoral stimulation. He and his colleagues claimed that low “penile-vaginal intercourse orgasmic consistency” is associated with anxious attachment (Costa & Brody, 2011), with higher use of immature psychological defense mechanisms (Brody et al., 2010), and with the inability to perceive, identify, and express emotions (Brody, 2010). There had been a highly controversial dispute between the Brody group (Brody et al., 2012; Costa et al., 2012) and their critics (Charland et al., 2012; Levin 2012a, 2012b, 2014) who argued that the Brody group pathologizes women who experience orgasms by non-vaginal means. Prause (2012a, 2012b) pointed out numerous flaws in the articles of the Brody group: a high potential for social probability bias, low or not presented effect sizes, and a high probability for type I errors due to multiple testing.

In sum, the literature on the relationship between female orgasm consistency and emotional traits is scattered and contradictory. Research findings with regard to the sexual communication in couples are even more unambiguous. A large body of literature indicates that sexual self-disclosure in intimate relationships has an important impact on sexual satisfaction (Byers & Demmons, 1999; Davis et al., 2006; Kelly et al., 2004; MacNeil & Byers, 2005; Montesi et al., 2011; Rehman et al., 2011).

From a genetic perspective, two twin studies explored the genetic impact on female orgasm consistency. In an Australian sample, Dawood et al. (2005) found that genetic influences (heritability) account for 31 % of the variance of coital orgasm consistency, 37 % of the variance of orgasm consistency through other forms of sexual contact (e.g., cunnilingus), and 51 % of the variance of orgasm consistency through masturbation. In a British sample, Dunn et al. (2005) reported similar findings.

1.1 Objectives and hypotheses

This paper focuses on the relationship between female orgasm consistency and emotional traits. From the above-mentioned research findings the following specific hypotheses were derived: Female orgasm consistency is positively associated with the ability to relinquish self-control, to be open to new experience, to accept one’s own emotions, and to experience overwhelming emotions. A further objective of this study is to provide information about students’ subjective beliefs about predictors influencing orgasm consistency. Additionally, based on previous research, this study aims to assess the relationship between female orgasm consistency and sexual behavior.

2. Method

2.1 Participants

The study participants were 1155 female students from five German universities (Ludwigsburg $N = 617$; Karlsruhe $N = 278$; Heidelberg $N = 178$; Schwäbisch Gmünd $N = 64$; Tübingen $N = 18$). Teacher-education students accounted for 83 % of participants, while 15 % studied educational science (e.g., adult education, cultural and media education), and 2 % studied psychology. The mean age of the sample was 23.5 years, with a standard deviation of 3.3 and an age range from 19 to 48 years. Women in a stable relationship accounted for 68 % of the

participants; 8 % of the participants currently had a “friends with benefits” relationship, 1 % had multiple simultaneous sexual relationships, and 23 % had no partner.

2.2 Research design and procedure

The current study utilized a quantitative correlational study design. A self-completion questionnaire was administered during classes or lectures on psychology or educational science. This research was conducted in accord with the Helsinki Declaration of ethical principles for medical research involving human subjects. Participation was strictly optional, and all participants provided informed consent. Anonymity and confidentiality were assured and additionally ensured by using ring binders for visual protection and by mixing questionnaires from different classes.

2.3 Instruments

The survey instrument consisted of closed-ended self-report questions to several sections: personal data, emotional traits, sexual behavior, orgasm consistency, and subjective beliefs about predictors influencing orgasm consistency.

Emotional traits were measured using the scales “Acceptance of One’s Own Feelings“, “Experiencing Overwhelming Emotions“, and “Self-Control“ of the “SEE-Scales for Experiencing Emotions“ (Behr & Becker, 2002, 2004). Cronbach’s alphas for these scales were .79, .86, and .79, respectively, in accordance with reported values (Behr & Becker, 2012). Validity evidence for the SEE can be found in Watson and Lilova (2009). Openness to experience was assessed by the scale “Openness to Experience” of the NEO-Five Factor Inventory (Costa & McCrae, 1992; German version in Borkeanu & Ostendorf, 1993; $\alpha = .76$).

Sexual Behavior was measured in the following areas: lifetime experience of different sexual behaviors; lifetime number of intercourse partners; duration of foreplay; initiating sexual activities (by women); sexual self-disclosure (e.g., “I tell my partner my sexual likes”, two self-constructed items, $\alpha = .89$); and sex life satisfaction (e.g., “I feel content with my sex life”, five self-constructed items, $\alpha = .79$). Additionally, respondents were asked for faked orgasms.

Orgasm Consistency was measured using different self-report questions: “How frequently do you have an orgasm during these sexual activities: masturbation/vaginal intercourse/cunnilingus/anal intercourse (never/rarely/occasionally/every other time/usually/almost always/always)?” In addition, the respondents had to estimate the percentage of times they reached an orgasm through vaginal intercourse. A high correlation between the verbal and the numerical rating scale to measure intercourse orgasm consistency could be observed (Spearman correlation $r_s = .88$, $p < .001$), indicating high reliability of these measures. In the light of recent research (Brody et al., 2011; Lloyd, 2005) it appears reasonable to distinguish between an orgasm triggered only by intercourse movements and one triggered by intercourse movements with additional clitoral stimulation (by partner or self). Therefore, the respondents had to differentiate between penile-vaginal intercourse with and without manual stimulation of the clitoris during different sexual postures: “How frequently do you have an orgasm during these intercourse postures: missionary/cowgirl/woman lying on top/doggy style/elephant ... without/with manual clitoral stimulation?” For further analyses, the variables “orgasm consistency due to pure penile-vaginal intercourse” (5 items, $\alpha = .81$), and “orgasm consistency due to vaginal intercourse with concomitant manual stimulation of the clitoris” (4 items, $\alpha = .88$) were created by merging the above-mentioned items.

2.4 Statistical analysis of data

The statistical package SPSS for Windows was used for descriptive statistics, group comparisons, MANOVA and Spearman’s rank-order correlation tests. The significance level was set at $p < .05$ with a Bonferroni-Holm correction due to multiple testing.

3. Results

A response rate of 99 % provided a solid foundation of data (only a few students left the room, did not deliver the questionnaire, or submitted partially completed questionnaires).

3.1 Sample Characteristics: Sexual Behavior

Penile-vaginal intercourse, anal intercourse, oral sex, and masturbation had been experienced by 92 %, 30 %, 86 % and 83 % of respondents, respectively. A total of 7 % of the respondents reported that they had never experienced an orgasm (under any circumstances). A total of 22 % of respondents declared that attaining an own orgasm during intercourse is important for them. A significantly ($t_{(1126)} = 22.22, p < .001$) higher number of respondents (54 %) stated that their own (female) orgasm during intercourse is important for their partner. One quarter of the respondents informed their partner about achievement of orgasm after each penile-vaginal intercourse. More than half (55 %) of the intercourse-experienced respondents admitted that they had faked orgasms at some time.

3.2 Sample Characteristics: Orgasm Consistency

Orgasm consistency due to penile-vaginal intercourse, masturbation, cunnilingus, and anal intercourse is presented in Figure 1 (only for women who have ever engaged in the specific sexual activity).

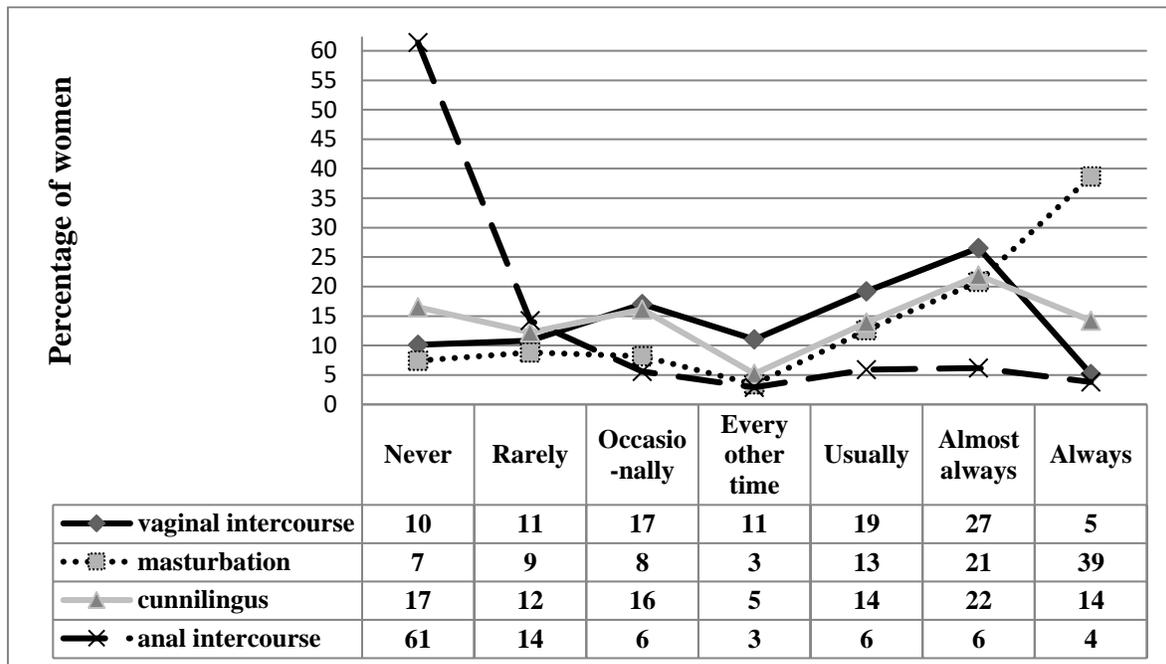


Figure 1: How often do you experience an orgasm through ...?

In the present sample, the most reliable method for achieving an orgasm was masturbation. Another measure of assessing orgasm rates was the percentage estimation. Figure 2 presents the respondents' estimations for achieving an orgasm through penile-vaginal intercourse.

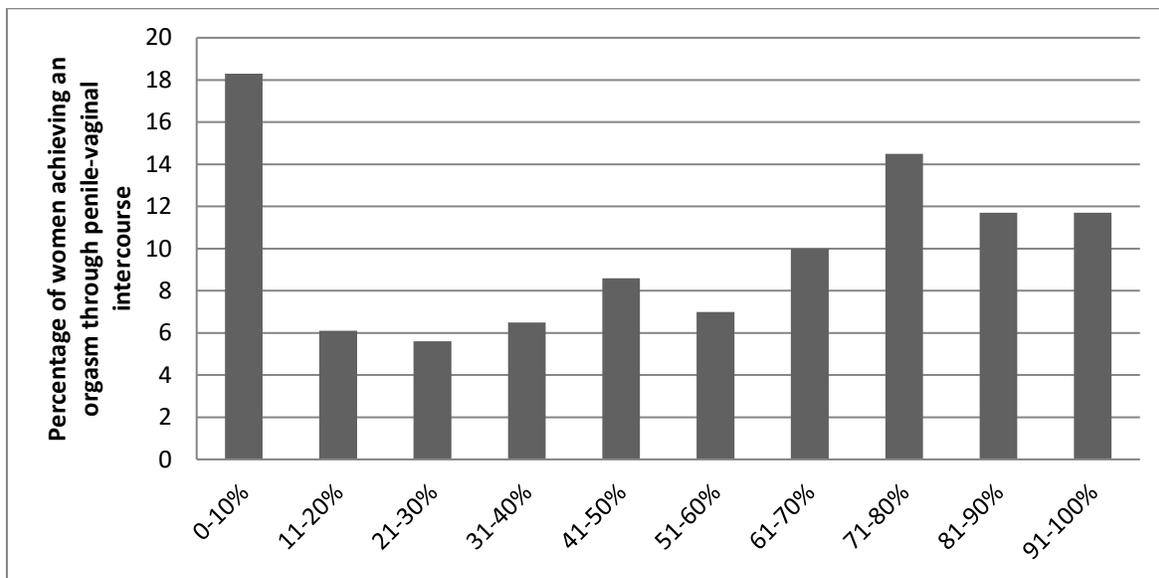


Figure 2: Estimate the percentage of times that you achieve an orgasm through penile-vaginal intercourse ($N = 1015$)

The mean percentage for achieving an orgasm through penile-vaginal intercourse was 54.5 % with a high standard deviation of 32.6. Obviously, the data do not fit with the assumption of a normal probability distribution. One peak in this distribution is the 0 to 10 percent range, the other peak is the 71 to 80 percent range.

For all assessed intercourse postures (missionary/cowgirl/woman lying on top/doggy style/elephant), concomitant manual stimulation of the clitoris during vaginal intercourse was significantly associated with a higher rate of orgasm consistency (t test, $p < .001$).

3.3 Subjective Beliefs on Predictors Influencing Orgasm Consistency

Respondents were asked to rate their level of agreement with presumed predictors of female orgasm consistency by using a five-point Likert scale from “strongly disagree” (1) to “strongly agree” (5): “In my opinion, female orgasm consistency during penile-vaginal intercourse is influenced by ... (e.g., woman’s inhibitions ...)”. The most accepted beliefs were that orgasm consistency through intercourse is influenced by the sex partner’s sensitivity ($M = 4.3$), by stimulation of the clitoris ($M = 4.1$), by women’s inhibitions ($M = 4.1$), by giving up self-control ($M = 3.9$), by woman’s sexual self-consciousness ($M = 3.9$), by acceptance of one’s own feelings ($M = 3.8$), and by openness to experience ($M = 3.6$). The respondents rejected the idea that orgasm consistency could be genetically determined ($M = 1.7$).

3.4 Orgasm Consistency and Demographic Variables

To detect confounding variables, multiple univariate analyses were performed using the between-subjects variables “age”, “number of siblings”, “birth position”, “number of children”, “socio-economic status”, “German/migrant background”, “final school exam grade”, “religion”, and “type of housing” as independent variables and “orgasm consistency (due to different sexual activities)” as dependent variables. The Bonferroni-Holm correction was applied to counteract the inflation of the type I error rate. As a result, no statistically significant relationship had been found between demographic variables and orgasm consistency.

3.5 Orgasm consistency and Emotional Traits

The results of Spearman’s rank-order correlation tests between orgasm consistency and emotional traits are given in Table 1. In order to compensate the possibility of false positive results due to multiple testing, the Bonferroni-Holm correction was applied to adjust P values.

Table 1: Spearman's rank-order correlation coefficients between orgasm consistency and emotional traits

	Orgasm consistency due to ...				
	pure penile- vaginal intercourse	intercourse with manual clitoris stimulation	masturbation	cunni- lingus	anal inter- course
Acceptance of Feelings (SEE)	.06	.09	.05	.06	.06
Overwhelming Emotions (SEE)	-.05	-.07	.08	-.07	-.03
Self-Control (SEE)	-.02	-.02	-.04	-.04	-.01
Openness (NEO-FFI)	.02	.06	.07	.02	.08

All calculated values using Spearman's rank-order correlation test are close to nil, and not significant after using the Bonferroni-Holm correction. In contrast to hypothesis, acceptance of one's own feelings, experiencing overwhelming emotions, self-control, and openness to experience are not significantly related to any form of orgasm consistency.

3.6 Orgasm Consistency and Sexual Behavior

The direction of causality between orgasm consistency and sexual behavior cannot be identified, and orgasm consistency is not normally distributed. Therefore, Spearman's rank-order correlation test was selected to calculate the relationship between orgasm consistency and sexual behavior. The results are presented in Table 2.

Table 2: Spearman's rank-order correlation coefficients between orgasm consistency and sexual behavior (* = significant p-values after Bonferroni-Holm corrections)

	Orgasm consistency due to ...				
	pure penile- vaginal inter- course	intercourse with manual clitoris stimulation	mastur- bation	cunni- lingus	anal inter- course
Lifetime intercourse experience	.05	.12*	.17*	.10	.08
Lifetime number of intercourse partners	-.04	-.01	.18*	-.03	-.02
Number of sexual variations	-.07	.05	.26*	.14*	.07
Duration of foreplay	.02	.01			.09
Female initiated18*	.12*		.21*	.44*
Sexual self-disclosure	.13*	.22*	.13*	.15*	.15*
Sex life satisfaction	.29*	.34*	.08	.19*	.15*

No significant or only weak relationships could be detected between "orgasm consistency" on one hand and "lifetime intercourse experience", "lifetime number of intercourse partners", "number of practiced sexual variations", and "duration of foreplay" on the other. Students who reported higher levels of "sexual self-

disclosure” and of “initiating sex” experienced a higher level of orgasm consistency. Sex life satisfaction was associated with high orgasm consistency, especially with coital orgasm consistency.

4. Discussion

The present study was performed to measure the relationship between different forms of “orgasm consistency” and some specific “emotional traits”. The data of this study demonstrate, consistent with previous research (Lloyd, 2005), that for many women consistent orgasms are out of reach. The most important insight gleaned from the data is that no evidence was found for a significant relationship between “orgasm consistency” and the investigated traits. The results indicate that emotional traits cannot be identified as suitable predictor variables for orgasm consistency. Contrary to widely disseminated subjective beliefs, which were shared by most of this study’s participants, the present data suggest that the ability to lose self-control, to accept one’s own feelings, to allow overwhelming emotions, and to be open to new experience has nothing to do with orgasm consistency. These findings are in line with those reported by Fisher (1973) and Zietsch et al. (2011) but contradict those of Brody (2010). It is a widely held belief (e.g., on sex advice websites) that female orgasm requires the letting go of self-control and inhibitions. The scientific rebuttal of this claim is important, because this faulty subjective theory may damage women’s sexual self-esteem.

A further topic in this research was the relationship between orgasm consistency and sexual behavior. No significant relationship could be detected between “coital orgasm consistency” and “duration of foreplay” (in accordance with previous findings by Weiss and Brody, 2009), “number of practiced sexual variations”, and “lifetime number of intercourse partners” either. In the present data, higher levels of “orgasm consistency” were significantly correlated with higher levels of “sexual self-disclosure” and of “initiating sex”. This is in sync with previous research that revealed a significant relationship between “telling a sexual partner about likes/dislikes” and “sexual satisfaction” (Byers & Demmons, 1999; Kelly et al., 2004; MacNeil & Byers, 2005; Montesi et al., 2011; Rehman et al. 2011). Inhibited sexual communication was observed to be negatively related to the level of physical sexual satisfaction (Davis et al., 2006). Communication with a sexual partner about one’s own desires is difficult in the light of one’s own vulnerability and exposure to potential humiliation or rejection. The results of the current study seem to indicate that couples’ communication about sexual likes and dislikes might be a vehicle to foster female orgasm consistency. Furthermore, the correlation between “initiating sex” and “orgasm consistency” (in line with previous research by Raboch & Raboch, 1992) could be explained by a reciprocal causal relationship: It seems plausible that a higher rate of orgasm consistency might motivate women to initiate this sexual activity, and that in turn initiating sex, mediated by self-disclosure and assertion of one’s own sexual desires, might foster orgasm consistency. With a view to the chicken-or-egg causality dilemma it is impossible to say which comes first: initiating sex or orgasm consistency.

Finally, the relationship between orgasm consistency and sex life satisfaction is to be considered. An important part of variance of sex life satisfaction can be explained by coital orgasm consistency (in line with Brody, 2007; Brody & Weiss, 2011). It may be that respondents decoded low orgasm consistency as synonymous with both failure and emotional problems. Respondents’ subjective beliefs about the relationship between emotional traits and orgasm consistency may explain the fatal relationship between orgasm consistency and sex life satisfaction.

The present study must acknowledge several limitations. Firstly, this study was limited to a non-random sample consisting primarily of teacher-education students. Therefore, variance in age and education was reduced, and generalizability of results is limited. Secondly, as in every correlational study, unmeasured variables could explain some of the observed relationships. Thirdly, orgasm consistency was measured solely by self-reports. Hence, data could be flawed by respondents’ probably limited ability to perceive their own orgasms. In modern society, women are expected to reach orgasm. Therefore, the reports could be flawed by social desirability bias. Nonetheless, the present study has some specific strengths, including a large sample size, reliable measures and a high response rate. Therefore, the outcomes of this research contain nearly no volunteer bias what is regarded as particularly important in sex surveys (Wiederman, 2001).

5. Conclusion

School-based sex education should foster sexual self-esteem, provide accurate information on human sexuality, and eliminate harmful myths. As a first consequence, the human sexual response cycle model (excitement, plateau, orgasm, resolution) should not be a tool of sexual education. This model suggests that orgasm is a must in

all sexual encounters. School-based sex education has to dispel this myth. Teachers should explain that experiencing an orgasm is not be seen as an expectable reaction but rather as a possibility. The female orgasm should be neither the goal of sex nor a duty to be fulfilled.

Secondly, demystifying the female orgasm should be an objective of school-based sex education. Data collected in the present study show the prevalence of faulty subjective beliefs. A vast majority of respondents believe that self-control and inhibitions reduce orgasm consistency. The results of this study suggest that the prevailing subjective beliefs about the predictors of orgasm consistency seem to be myths. As a consequence of these myths, girls and women blame themselves and/or are blamed by their partners (e.g., “do not fear of losing control”) for not achieving an orgasm. In this sample, achieving an orgasm was more important for respondents’ partners than for respondents themselves. More than half of the respondents reported to have faked an orgasm at some time.

Bringing a woman to orgasm seems to enhance men’s feeling of masculinity (Chadwick & van Anders, 2017). Female orgasms are then used as a self-esteem boost for men. But that boost is deceptive because an important part of variation in orgasm consistency appears to be heritable (Dawood et al., 2005; Dunn et al., 2005). In school-based sex education, girls and boys should learn that female orgasms are not a male trophy. Furthermore, data of this study indicate that teachers should encourage girls to communicate about their sexual likes and dislikes. In science-based sex education students will learn that a satisfactory intimate relationship is more important than counting orgasms.

References

- Behr, M., & Becker, M. (2002). Congruence and experiencing emotions: Self-report scales for the person-centered and experiential theory of personality. In J. C. Watson, R. N. Goldman, & M. S. Warner (Eds.), *Client-Centered and Experiential Psychotherapy in the 21st Century: Advances in Theory, Research and Practice* (pp. 150-167). PCCS Books.
- Behr, M., & Becker, M. (2004). *SEE. Skalen zum Erleben von Emotionen* [Scales for experiencing emotions]. Hogrefe.
- Behr, M., & Becker, M. (2012). Scales for experiencing emotions: awareness, appraisal and regulation of one’s own emotions. *Hellenic Journal of Psychology*, 9(3), 278-303.
- Borkenau, P., & Ostendorf, F. (1993). *NEO-Fünf-Faktoren Inventar (NEO-FFI)*. Hogrefe.
- Brody, S. (2007). Vaginal orgasm is associated with better psychological function. *Sexual and Relationship Therapy*, 22(2), 173-191. <https://doi.org/10.1080/14681990601059669>
- Brody, S. (2010). The relative health benefits of different sexual activities. *The Journal of Sexual Medicine*, 7(4), 1336-1361. <https://doi.org/10.1111/j.1743-6109.2009.01677.x>
- Brody, S., Costa, R. M., & Hess, U. (2012). Immature psychological defense mechanisms and the misrepresentations of some sex-researchers. *Sexual and Relationship Therapy*, 27(3), 243-259. <https://doi.org/10.1080/14681994.2012.697144>
- Brody, S., Costa, R. M., Hess, U., & Weiss, P. (2011). Vaginal orgasm is related to better mental health and is relevant to evolutionary psychology: A response to Zietsch et al. *The Journal of Sexual Medicine*, 8(12), 3523-3525. <https://doi.org/10.1111/j.1743-6109.2011.02444.x>
- Brody, S., Houde, S., & Hess, U. (2010). Greater tactile sensitivity and less use of immature psychological defense mechanisms predict women’s penile-vaginal intercourse orgasm. *The Journal of Sexual Medicine*, 7(9), 3057-3065. <https://doi.org/10.1111/j.1743-6109.2010.01917.x>
- Brody, S., & Weiss, P. (2011). Simultaneous penile-vaginal intercourse orgasm is associated with satisfaction (sexual, life, partnership, and mental health). *The Journal of Sexual Medicine*, 8(3), 734-741. <https://doi.org/10.1111/j.1743-6109.2010.02149.x>
- Burri, A. V., Cherkas, L. M., & Spector, T. D. (2009). Emotional intelligence and its association with orgasmic frequency in women. *The Journal of Sexual Medicine*, 6, 1930-1937. <https://doi.org/10.1111/j.1743-6109.2009.01297.x>
- Byers, E. S., & Demmons, S. (1999). Sexual satisfaction & sexual self-disclosure within dating relationships. *Journal of Sex Research*, 36(2), 180-189. <https://psycnet.apa.org/doi/10.1080/00224499909551983>

- Chadwick, S. B., & van Anders, S. M. (2017). Do Women's Orgasms Function as a Masculinity Achievement for Men? *The Journal of Sex Research*, 54(9), 1141-1152. <https://doi.org/10.1080/00224499.2017.1283484>
- Charland, L., Shrier, I., & Shor, E. (2012). Simultaneous penil-vaginal intercourse orgasm. Letters to the editor. *The Journal of Sexual Medicine*, 9(1), 334. <https://doi.org/10.1111/j.1743-6109.2011.02427.x>
- Costa, P. T., Jr., & McCrae, R. R. (1992). *Revised NEO Personality Inventory and NEO Fivefactor Inventory professional manual*. Odessa, FL: Psychological Assessment Resources.
- Costa, R. M., & Brody, S. (2011). Anxious and avoidant attachment, vibrator use, anal sex, and impaired vaginal orgasm. *The Journal of Sexual Medicine*, 8(9), 2493–2500. <https://doi.org/10.1111/j.1743-6109.2011.02332.x>
- Costa, R. M., Miller, G. F. & Brody, S. (2012). Women who prefer longer penises are more likely to have vaginal orgasms (but not clitoral orgasms): implications for an evolutionary theory of vaginal orgasm. *Journal of Sexual Medicine*, 9, 3079-3088. <https://doi.org/10.1111/j.1743-6109.2012.02917.x>
- Dawood, K., Kirk, K. M., Bailey, J. M., Andrews, P. W., & Martin, N. G. (2005). Genetic and environmental influence on the frequency of orgasm in women. *Twin Research and Human Genetics*, 8(1), 27-33. <https://doi.org/10.1375/1832427053435427>
- Davis, D., Shaver, P. R., Widaman, K. F., Vernon, M. L., Follette, W. C., & Beitz, K. (2006). "I can't get no satisfaction": Insecure attachment, inhibited sexual communication, and sexual dissatisfaction. *Personal Relationships*, 13(4), 465-483. <https://psycnet.apa.org/doi/10.1111/j.1475-6811.2006.00130.x>
- Dunn, K. M., Cherkas, L. F., & Spector, T. D. (2005). Genetic influence on variation in female orgasmic function: a twin study. *Biology Letters*, 1(3), 260-263. <https://dx.doi.org/10.1098%2Frsbl.2005.0308>
- Fisher, S. (1973). *The Female Orgasm: Psychology, Physiology, Fantasy*. Basic Books.
- Harris, J. M., Cherkas, L. F., Kato, B. S., Heiman, J. R., & Spector, T. D. (2008). Normal variations in personality are associated with coital orgasmic infrequency in heterosexual women: A population-based study. *The Journal of Sexual Medicine*, 5, 1177-1183. <https://doi.org/10.1111/j.1743-6109.2008.00800.x>
- Heider, F. (1958). *The Psychology of Interpersonal Relations*. Lawrence Erlbaum Associates.
- Heßling, A., & Bode, H. (2015). *Youth Sexuality 2015. The outlook of 14-25-year-olds. A report of the findings. Results of the current representative survey*. Bundeszentrale für gesundheitliche Aufklärung, Köln.
- Kelly, M. P., Strassberg, D. S., & Turner, C. M. (2004). Communication and associated relationship issues in female anorgasmia. *Journal of Sex & Marital Therapy*, 30(4), 263-276. DOI: 10.1080/00926230490422403
- Lavie, M. (2004). *Experiences and Representations of the Presence and Absence of Female Orgasm*. Thesis submitted to the University of London for the degree of Doctor of Philosophy. Department of Psychology, University College London, July 2004. Retrieved from: <https://discovery.ucl.ac.uk/id/eprint/10103868/1/Orgasm.pdf>
- Levin, R. J. (2012a). The human female orgasm: A critical evaluation of its proposed reproductive functions. *Sexual and Relationship Therapy*, 26(4), 301-314. <https://doi.org/10.1080/14681994.2011.649692>
- Levin, R. J. (2012b). The deadly pleasures of the clitoris and the condom – a rebuttal of Brody, Costa and Hess (2012). *Sexual and Relationship Therapy*, 27(3), 272-295. <https://doi.org/10.1080/14681994.2012.732261>
- Levin, R. J. (2014). Should the clitoris become a vestigial organ by personal 'psychological clitoridectomy'? A critical examination of the literature. *Journal of Women's Health, Issues & Care*, 3:5. <http://dx.doi.org/10.4172/2325-9795.1000159>
- Lloyd, E. A. (2005). *The case of female orgasm. Bias in the science of evolution*. Harvard University Press.
- MacNeil, S., & Byers, E. S. (2005). Dyadic assessment of sexual self-disclosure and sexual satisfaction in heterosexual dating couples. *Journal of Social and Personal Relationships*, 22(2), 169-181. <https://psycnet.apa.org/doi/10.1177/0265407505050942>
- Montesi, J. L., Fauber, R. L., Gordon, E. A., & Heimberg, R. G. (2011). The specific importance of communicating about sex to couples 'sexual and overall relationship satisfaction. *Journal of Social and Personal Relationships*, 28(5), 591-609. <https://psycnet.apa.org/doi/10.1177/0265407510386833>
- Morris, D. (1967). *The Naked Ape: A Zoologist's Study of the Human Animal*. Jonathan Cape Publishing.
- Mottier, V. (2008). *Sexuality. A Very Short Introduction*. Oxford University Press.
- Pavličev, M., & Wagner, G. (2016). The evolutionary origin of female orgasm. *Journal of Experimental Zoology*, 326B, 326-337. <https://doi.org/10.1002/jez.b.22690>

- Prause, N. (2012a). The human female orgasm: Critical evaluations of proposed psychological sequelae. *Sexual and Relationship Therapy*, 26(4), 315-328. <https://doi.org/10.1080/14681994.2011.651452>
- Prause, N. (2012b). A response to Brody, Costa and Hess (2012): Theoretical, statistical and construct problems perpetuated in the study of female orgasm. *Sexual and Relationship Therapy*, 27(3), 260-271. <https://doi.org/10.1080/14681994.2012.732262>
- Raboch, J., & Raboch, J. (1992). Infrequent orgasms in women. *Journal of Sex & Marital Therapy*, 18(2), 114-120. <https://psycnet.apa.org/doi/10.1080/00926239208404363>
- Rehman, U. S., Rellini, A. H., & Fallis, E. (2011). The importance of sexual self-disclosure to sexual satisfaction and functioning in committed relationships. *The Journal of Sexual Medicine*, 8(11), 3108-3115. <https://doi.org/10.1111/j.1743-6109.2011.02439.x>
- Watson, J., & Lilova, S. (2009). Testing the Reliability and Validity of the Scales for Experiencing Emotion with a Canadian Sample. *Person-Centered & Experiential Psychotherapies*, 8(3), 189-207. <https://doi.org/10.1080/14779757.2009.9688488>
- Weiss, P., & Brody, S. (2009). Women's partnered orgasm consistency is associated with greater duration of penile-vaginal intercourse but not of foreplay. *The Journal of Sexual Medicine*, 6(1), 135-141. <https://doi.org/10.1111/j.1743-6109.2008.01041.x>
- Wiederman, M. W. (2001). *Understanding Sexuality Research*. Wadsworth/Thompson Learning.
- Zietsch, B. P., Miller, G. F., Bailey, J. M., & Martin, N. G. (2011). Female orgasm rates are largely independent of other traits: Implications for „Female orgasmic disorder“ and evolutionary theories of orgasm. *The Journal of Sexual Medicine*, 8, 2305-2316. <https://doi.org/10.1111/j.1743-6109.2011.02300.x>