



INVESTIGATING THE CONCORDANCE BETWEEN PHYSIOLOGICAL AND SUBJECTIVE SEXUAL AROUSAL PATTERNS IN MEN AND WOMEN



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Introduction

- In men, correlations between penile responses and self-report ratings of sexual arousal range between 0.58 and 0.82, whereas correlations between vaginal photoplethysmograph responses and self-report ratings of arousal range between 0.10 and 0.32 in women (Chivers et al., 2005)
- Higher correlations noted in men than women have led researchers to speculate whether a closer relationship exists between the physical and psychological components of sexual arousal in men than in women
- Many have attempted to explain the higher correlations among men in terms of differences in the sexual socialization of men and women, or anatomical gender differences that lead to a more direct feedback between genital and mental arousal in men than in women
- Previous studies have, in large, relied upon single global assessments of mental arousal using Likert scale ratings and compared these with a large number of physiological data points that have been averaged into a single mean. This type of data analysis does not take into consideration fluctuations across time in sexual responding or potential gender differences in the variability to which specific types of sexual stimuli may be arousing
- The purpose of the present study was to compare relations between mental and genital sexual arousal in men and women using continuous measures of both mental and physiological arousal and varied sexual stimuli

Methods

PARTICIPANTS

Table 1			
N	47		
Age (years)	19.19 ± 1.88	(range: 17-25)	
Gender (F/M)	24/23 (51.1% F)		
Education (years)	12.98 ± 1.34	(range: 12-16)	
Ethnicity			
Caucasian	24 (51.1%)		
African American	5 (10.6%)		
Hispanic	9 (19.1%)		
Asian	4 (8.5%)		
Other	5 (10.6%)		
FSFI			
Full Scale	30.6 ± 2.81	(range: 25.4-34.8)	
Arousal subscore	5.34 ± 0.56	(range: 4.2-6.0)	
IEEF			
Total Score	66.3 ± 4.42	(range: 60-74)	
Erectile subscore	28.5 ± 1.53	(range: 25-30)	

mean ± standard deviation

FSFI: Female Sexual Function Index (Rosen et al., 2000)

IEEF: International Index of Erectile Function (Rosen et al., 1997)

Figure 1 Physiological and subjective sexual arousal concordance in men

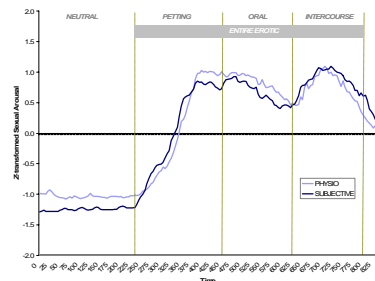


Figure 2 Physiological and subjective sexual arousal concordance in women

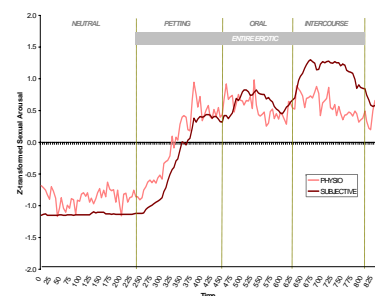


Figure 3 Physiological and subjective sexual arousal desynchrony in men

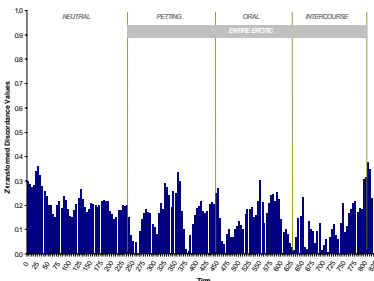


Figure 4 Physiological and subjective sexual arousal desynchrony in women

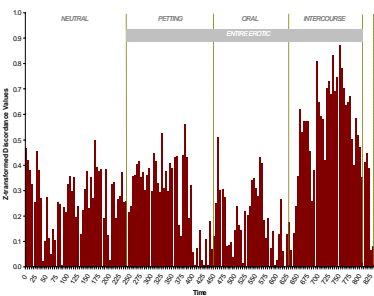


Figure 5 Between-gender comparisons of desynchrony across various film stimuli

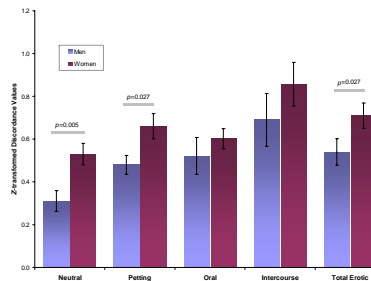
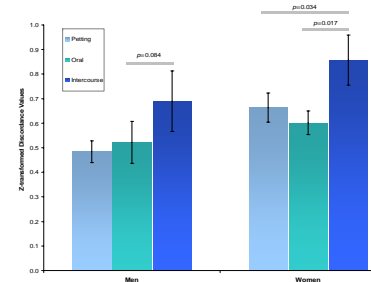


Figure 6 Within-gender comparisons of desynchrony across various film stimuli



PROCEDURE

- Participants completed a 20-min questionnaire packet and immediately watched a 14-min film consisting of a 4-min neutral segment immediately followed by a 10-min female-centered erotic segment. The erotic segment consisted of scenes depicting petting, oral sex, and intercourse.

MEASURES

Physiological Sexual Arousal

- Males:** penile circumferential change (mm) using a mercury-in-rubber strain gauge
- Females:** vaginal photoplethysmography to detect changes in vaginal pulse amplitude (VPA). VPA is recorded in millivolts and derived by taking the amplitude of each pulse wave (peak - trough)

Continuous Subjective Sexual Arousal

- Computer optical mouse mounted on a wooden track divided into 8 equally spaced intervals, where 0 indicated neutral, and 1 to 7 reflected increasingly higher levels of feeling sexually turned on. A software program written in Matlab detected the position of the pointer with respect to the y-axis of the computer's monitor continuously in 5-second intervals.

ANALYSIS

- The absolute value of the difference between Z-transformed physiological arousal and Z-transformed subjective arousal was calculated for each 5-second epoch for each participant
- These scores were averaged across film stimuli (i.e., neutral, petting, oral, intercourse, total erotic) within subjects, and t-tests were performed in order to investigate gender-specific concordance patterns within and across stimuli type

Results

- Men and women exhibited a significant increase in physiological ($F(34)=325.8, p<0.001$) and subjective response ($F(39)=677.2, p<0.001$) to the erotic film, with men showing a greater physiological response to the oral ($t(34)=3.43, p=0.002$), intercourse ($t(34)=2.09, p=0.045$), and total erotic ($t(34)=3.69, p=0.001$) film segments (see Fig 1 and Fig 2).

- With respect to the concordance of physiological and subjective arousal, there was an overall main effect of film type ($F(29)=51.69, p<0.001$), indicating greater discordance in both males and females during the overall erotic film compared to the neutral segment (see Fig 3 and Fig 4).
- Closer examination revealed that women compared to men demonstrated significantly higher discordance rates within the neutral ($t(29)=-3.038, p=0.005$), and petting ($t(29)=-2.33, p=0.027$) segments, as well as the total erotic stimuli ($t(29)=-1.954, p=0.060$) (see Fig 5).
- Within-gender analyses indicated that both men and women demonstrated significantly higher discordance rates in response to the intercourse stimuli compared to the oral sex stimuli. Additionally, women showed higher discordance rates in response to the intercourse stimuli compared to the petting stimuli (see Fig 6).

Conclusions

- In support of what is generally reported in the literature, concordance rates between continuous mental and continuous physiological sexual arousal to a variety of sexual stimuli differed significantly between men and women.
- Specifically, women demonstrated a greater degree of desynchrony across the neutral segment as well as the total erotic segment.
- Both men and women demonstrated similar concordance values between physiological and subjective sexual arousal in response to the oral sex stimuli.
- To our knowledge, this study was the first to compare responses between genders using continuous measures of both subjective and genital arousal.
- Given the small sample size, we regard these results as preliminary. If replicated, these findings are theoretically meaningful in that they corroborate previous research suggesting that genital sensations may play a different role in facilitating psychological arousal in sexually functional women than in sexually functional men.

References

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