

The Erectile Performance Anxiety Index: Scale Development and Psychometric Properties

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ABSTRACT

Introduction. Erectile dysfunction is a highly publicized and prevalent condition with marked adverse effects on men's social, emotional, and quality of life. Although several instruments have emerged for assessing erectile dysfunction and its impact on men's quality of life, none of the existing instruments provide a specific assessment of men's erectile performance anxiety.

Aim. This article reports on the development and psychometric evaluation of the Erectile Performance Anxiety Index (EPAI)—a 10-item self-report scale designed to fill an important gap in the assessment of male erectile dysfunction.

Methods. A total of 207 men ranging in age from 18 to 79 took part in the study. All subjects completed an online battery consisting of the EPAI, along with measures of related sexual functioning, social anxiety, state anxiety, and depressive symptoms. A small subset of study participants ($N = 42$) completed the EPAI a second time for determining test–retest reliability.

Main Outcome Measure. Test–retest reliability was determined by Pearson's product–moment correlations. Internal reliability was assessed using Cronbach's alpha. Factor validity was evaluated by a maximum likelihood factor analysis with oblique rotation. Convergent and discriminant validity was assessed by comparing the strength of association between the EPAI and measures varying in their hypothesized shared variance with the construct of erectile performance anxiety.

Results. The EPAI demonstrated excellent internal consistency, with Cronbach's alpha = 0.93 and excellent test–retest reliability ($r = 0.85$) over an average period of 3.5 weeks. Results of an exploratory factor analysis revealed a one-factor solution that accounted for 63% of the total variance. Preliminary evidence supports the convergent and discriminant validity of the EPAI.

Conclusion. Results support the use of the EPAI as a reliable, valid, and efficient instrument for the assessment of erectile performance anxiety. Potential research and clinical applications are discussed. **Telch MJ and Pujols Y. The Erectile Performance Anxiety Index: Scale development and psychometric properties. J Sex Med 2013;10:3019–3028.**

Key Words. Erectile Performance Anxiety; Erectile Dysfunction; Assessment; Screening; Assessment Scale

Introduction

Erectile dysfunction (ED) is a highly publicized and prevalent condition defined as the consistent inability to achieve and maintain a penile erection sufficient for satisfactory sexual performance. It is the most common presenting complaint among couples seeking treatment at sex therapy centers in both the United States and Europe [1]. Some level of erectile difficulty has been reported in approximately half of all men over the age of 50 [2]; however, complete ED—

the total inability to maintain an erection during sexual stimulation, coupled with the absence of nocturnal erections—occurs in about 10% of men [2,3]. Erectile difficulties increase dramatically with age and with those presenting with a variety of medical comorbid conditions [4].

ED not only impacts sexual functioning but also creates more pervasive disruption in men's social, psychological, and overall quality of life [5]. Not surprisingly, men with ED report lower physical, emotional, and general happiness in their romantic relationships relative to men without male erectile

dysfunction [3]. Women's sexual health is also adversely affected by their mate's erectile difficulties as evidenced by their increased prevalence of sexual dysfunction compared with women whose mate does not have ED [6].

A wide range of physical/medical risk factors has been linked to ED. These include smoking [7], antihypertensive and antidepressant medications [8], lower plasma testosterone [9], cardiovascular disease and diabetes [10], lower urinary tract infections [11], medical diagnostic procedures such as transrectal ultrasound-guided prostate biopsy [12], and heavy bicycling [13].

ED has also been linked in cross-sectional studies to several psychosocial variables including depression [4,14], anger [3], the personality trait of dominance [15], and relationship factors [16]. Prospective linkages between these aforementioned putative psychosocial risk variables and the presence of ED almost 9 years later were examined as part of the Massachusetts Male Aging Study. Results showed that men displaying a submissive personality style at baseline were at increased risk for ED 8.8 years later independent of other well-known risk factors. Neither depression nor anger significantly predicted ED onset at follow-up [15]. In addition, age, lower education at baseline, cardiovascular disease, diabetes, and treated hypertension prospectively predicted new ED cases at follow-up [17].

As early as the 1940s, anxiety has been viewed as playing an important contributory cause of sexual dysfunction in both men and women [18,19]. In their pioneering work, Masters and Johnson [20] highlighted the central role of sexual performance anxiety in couples presenting with sexual dysfunction. Similarly, Kaplan [21] described the importance of addressing specific sources of sexual anxiety such as fear of failure and fear of not pleasing one's partner in the treatment of sexual dysfunctions. The underlying assumption of these early accounts of sexual dysfunction was that anxiety operates to *physiologically* inhibit sexual arousal.

Based on a series of elegant experiments [22–25], Barlow [26] proposed a model of ED that challenged the prevailing view that anxiety operates to physiologically inhibit sexual arousal. His model emphasizes the interaction of anxiety and cognitive interference. Specifically, in response to a sexual context, low perceived control over one's arousal leads to an attentional shift away from erotic cues and on to one's own physiological arousal and the negative consequences of erec-

tile nonresponse, thus creating the self-fulfilling feared outcome, namely erectile failure [26].

Review of Related Measures

Several self-report instruments for the assessment of ED have been developed in response to the need to have convenient and psychometrically sound outcome measures for the early Phase 2 clinical trials of sildenafil citrate. Based on recommendations from the National Institute of Health Consensus Development Panel on Impotence [27], Pfizer, Inc. and a team of international experts developed the International Index of Erectile Function (IIEF) [28]. The IIEF is a 15-item self-report scale that taps five assessment domains (erectile function, intercourse satisfaction, orgasmic function, sexual desire, and overall satisfaction). It has undergone extensive psychometric validation and is considered the Gold Standard for assessing therapeutic interventions of ED [29]. Rosen and colleagues have also developed a shorter five-item version of the IIEF [30].

Additional validated measures tapping other ED-related constructs have appeared (see Rosen et al. for an excellent review) [31]. The Self-Esteem and Relationship Questionnaire (SEAR) [32] is a 14-item scale designed to measure the impact of ED on men's sexual confidence, self-esteem, and relationship satisfaction. Psychometric evaluation of the SEAR has been favorable in showing high internal reliability, convergent and discriminant validity, and sensitivity to changes in treatment [32]. The Erectile Dysfunction Inventory of Treatment Satisfaction [33] is an 11-item self-report scale for assessing satisfaction with treatments for ED. Psychometric evaluation has shown it to possess excellent test-retest reliability and internal consistency [5]. The Psychological Impact of Erectile Dysfunction (PIED) [34] is a 16-item scale aimed at assessing disease-specific quality of life in men who present with ED. The PIED consists of two subscales involving impact of ED on sexual experience and impact of ED on emotional life. Preliminary psychometric data are favorable suggesting good internal consistency and convergent validity [34]. The Structured Interview on Erectile Dysfunction is a recently validated multidimensional assessment tool for assessing the organic, relational, and psychopathologic factors contributing to ED [35].

Despite evidence suggesting that anxiety can play a central role in the onset and maintenance of ED, there is a surprising scarcity of psychometrically validated instruments for assessing anxiety

related to erectile performance. The Sex Anxiety Inventory [36] presents 25 dichotomous items tapping one's perceived responses to specific sexual situations (e.g., "sexual advances leave me feeling tense") as well as more general beliefs about sex (e.g., "casual sex can hurt many people") but does not include specific items tapping erectile performance anxiety (EPA). The Sexual Function Scale (SFS) [37] is a 174-item battery that includes a 10-item sexual anxiety subscale. Although intended for both men and women, the SFS lacks items specific for EPA.

Aims

Although the published scales described above provide researchers and clinicians psychometrically sound measures for assessing ED and its impact on men's quality of life, none of the existing published instruments provide a specific assessment of EPA. We conceptualize EPA as a state of apprehension and self-focused attention to the anticipation of difficulty to achieve or maintain an erection during sexual activity. This article reports on the development and preliminary psychometric evaluation of the Erectile Performance Anxiety Index (EPAI)—a 10-item self-report scale designed to fill an important gap in the assessment of male ED.

Methods

Instrument Development

Several factors influenced our conceptualization of the EPA construct. These included our clinical experience working with patients presenting with EPA and erectile performance difficulties, Barlow's model of ED (Barlow, [26]), and more recent work on the influential role of safety behaviors in the onset and maintenance of pathological anxiety [38–40]. The two authors generated items tapping the following three hypothesized facets of EPA: (i) anxiety and/or worry in *anticipation* of a sexual performance context; (ii) anxiety and hypervigilance *while* engaging in or *attempting* to engage in one or more sexual activities; and (iii) avoidance and other safety behaviors in response to the anticipation of erectile failure. Thirteen items were generated from both clinical observations and published theorizing and research on anxiety and erectile performance [26]. An initial 13-item scale was distributed to colleagues in the field of sexual dysfunction who were asked to review the measure for language, clarity, and face validity.

Participants (N = 165) in the first wave of data collection were offered the option of leaving comments and suggestions regarding the 13-item measure. The first wave of data collection spanned both the online volunteers and local university students who completed the questionnaire battery in its entirety. The second wave of participants consisted of 42 male university students who additionally completed the retest of the EPAI. Based on the feedback received, wording changes were made on four of the 13 items.

Participants

Men (N = 207) ranging in age from 18 to 79 took part in the study. Community participants (N = 165) were recruited nationwide through online classified advertisements posted on <http://www.craigslist.com> and several online newspapers (e.g., Austin Chronicle, LA Weekly). A sample of local college students (n = 42) was recruited through the psychology department's online study recruitment and scheduling website. Demographic characteristics of the samples are presented in Table 1.

Measures

Erectile Performance Anxiety Index

The EPAI is a 10-item author-constructed self-report scale designed specifically to assess EPA. The scale was designed to capture three hypothesized facets of EPA: (i) anxiety and/or worry in *anticipation* of a sexual performance context; (ii) anxiety and hypervigilance *while* engaging in or *attempting* to engage in one or more sexual activities; and (iii) avoidance and other safety behaviors in response to the anticipation of erectile failure. Each of the 10-items is rated on a five-point Likert-type response scale ranging from 1 (not like me) to 5 (very much like me). The original 13 items and their inter-item correlations are presented in Table 2. The final 10-item scale is presented in Appendix A.

Performance Anxiety Subscale of the SFS [37]

The performance anxiety subscale of the SFS is a 10-item scale that assesses the extent to which a man or woman experiences anxiety or feels pressured to engage in sexual activity. All items are gender-neutral, and the term *sexual arousal* is used to convey the individual's sexual response (e.g., "Do you become irritated or annoyed about being too slow to become sexually aroused?"). Each item is rated on a five-point Likert-type scale ranging from 0 = *never* to 4 = *always*. The score is

Table 1 Participant characteristics by sample source

	Sample source					
	Students (n = 42)		Community (n = 163)		Total (n = 207)	
	%	n	%	n	%	n
Education						
Less than high school	0.0	13	1.8	3	1.5	3
High school	31.0	26	11.7	19	15.6	32
Some college	61.9	3	39.9	65	44.4	91
College degree	7.1	0	25.2	41	21.5	44
Advanced degree	0.0	0	20.2	33	16.1	33
Data missing	0.0	0	1.2	2	1.0	2
Race/ethnicity						
Hispanic/Latino	28.6	12	11.7	19	15.1	31
White/Caucasian	69.0	29	83.4	136	80.5	165
Black or African American*	50.0	21	77.5	128	71.9	149
Mixed race*	7.1	3	4.2	7	4.8	10
Not Hispanic/Latino	4.7	2	1.8	3	2.4	5
Asian	21.4	9	7.2	12	10.1	21
Hawaiian or Pacific Islander	0.0	0	0.6	1	0.4	1
American Indian or Alaskan Native	0.0	0	2.4	4	1.9	4
Data Missing	16.6	6	6.0	10	8.2	17
Marital status						
Never married	100.0	42	61.0	101	69.0	143
Married	0.0	0	23.9	39	18.8	39
Widowed	0.0	0	0.6	1	0.5	1
Relationship status						
In current steady relationship	50.0	21	57.5	95	56.0	116
Sexual orientation						
Heterosexual	90.4	38	66.0	109	71.0	147
Homosexual	9.5	4	21.0	36	19.0	40
Bisexual	0.0	0	10.9	18	8.0	18
Age						
	M	SD	M	SD	M	SD
	19.6	1.5	33.9	13.0	31.0	13.0

M = mean; SD = standard deviation

calculated as the sum of all 10 items, with higher scores indicating greater performance anxiety. The performance anxiety subscale has demonstrated high internal consistency, (Cronbach's alpha = 0.85), and high test-retest reliability ($r = 0.97$) [37].

Appraisal of Social Concerns (ASC) [41]

The ASC is a 20-item self-report scale that assesses the respondents' level of concern with potentially negative outcomes arising in social situations. Respondents are instructed to choose a number from the scale which best describes their level of concern for each outcome when placed in a challenging social situation such as talking to people at a party or public speaking. The 20-item measure contains three subscales: negative evaluation (e.g., appearing weird, people laughing at you), observable symptoms (e.g., trembling, being tense), and social helplessness (e.g., people ignoring you, losing control). The 11-point response scale ranges from 0 (not at all concerned) to 100 (extremely concerned) marked in intervals of 10, and the total scale score is reported as the average item rating. The ASC has demonstrated excellent

internal consistency (Cronbach's alpha = 0.92) and convergent validity with other social anxiety measures and sensitivity to treatment [42].

State-Trait Anxiety Inventory, State Anxiety Scale (STAI-S)—Short Form [43]

This short form of the STAI-S consists of six items from the original STAI [44] with items 3, 6, 17 from factor 1 (anxiety present) and items 1, 15, 16 (anxiety absent), thus retaining the two-factor structure from the original STAI. Each item is rated on a four-point Likert scale ranging from 1 = *not at all* to 4 = *very much*. The score is the sum of all six items. This short version has shown high internal consistency, Cronbach's alpha = 0.85, and high test-retest reliability, $r = 0.82$ [43].

Center for Epidemiologic Studies Depression Scale, Short Form (CES-D-10) [45]

The short form of the CES-D-10 contains 10 items that measure primarily affective depressive symptoms (e.g., "I felt depressed," "I felt that everything I did was an effort") in the past week. Each of the 10 items is rated on a four-point Likert

Table 2 Inter-item and item–total correlations for the original 13-item EPAI

Item description	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
1. When I find myself in a situation where sex is a possibility, I often worry or become apprehensive that I will have trouble achieving or maintaining an erection.	—	0.89	0.12	0.60	0.49	0.62	0.52	0.26	0.57	0.33	0.57	0.79	0.63	0.82
2. I have frequent thoughts about failing to achieve/maintain an erection.	0.89	—	0.14	0.63	0.54	0.70	0.62	0.30	0.65	0.36	0.58	0.81	0.64	0.87
3. I <i>rarely</i> worry that I will <i>not</i> be able to achieve or maintain an erection.	0.12	0.14	—	0.10	0.06	0.13	0.09	0.01	0.11	0.10	0.18	0.15	0.07	0.31
4. I find myself getting nervous when my sexual partner starts to talk about having sex.	0.60	0.63	0.10	—	0.66	0.53	0.51	0.26	0.52	0.33	0.45	0.59	0.76	0.77
5. I sometimes use excuses (e.g., feeling tired, headache) to avoid sex.	0.49	0.54	0.06	0.66	—	0.51	0.55	0.25	0.42	0.26	0.34	0.52	0.59	0.66
6. I sometimes feel like I have to take erectile dysfunction (ED) medications or supplements in order to achieve/maintain an erection.	0.62	0.70	0.13	0.53	0.51	—	0.64	0.36	0.53	0.62	0.52	0.69	0.57	0.80
7. I often feel the need to drink alcohol or take other antianxiety medications to help manage my fear of not being able to achieve/maintain an erection.	0.52	0.62	0.09	0.51	0.55	0.64	—	0.46	0.56	0.46	0.44	0.60	0.54	0.76
8. I often use other aids such as creams, lotions, or pumps to help achieve or maintain an erection.	0.26	0.30	0.01	0.26	0.25	0.36	0.46	—	0.28	0.48	0.41	0.34	0.28	0.50
9. When in a sexual situation, I often check to see whether I am becoming aroused.	0.57	0.65	0.11	0.52	0.42	0.53	0.56	0.28	—	0.29	0.52	0.63	0.60	0.74
10. I often keep erectile dysfunction (ED) medications or supplements nearby as a backup in case I cannot achieve/maintain an erection.	0.33	0.36	0.10	0.33	0.26	0.62	0.46	0.48	0.29	—	0.55	0.39	0.33	0.56
11. I sometimes read books or articles on the Internet about ways to prevent erection problems.	0.57	0.58	0.18	0.45	0.34	0.52	0.44	0.41	0.52	0.55	—	0.64	2.50	0.72
12. In the middle of having sex, I often find myself focusing on whether I will be able to maintain my erection.	0.79	0.81	0.15	0.59	0.52	0.69	0.60	0.34	0.63	0.39	0.64	—	0.70	0.86
13. I feel tense or nervous in sexual situations even when I know the person well.	0.63	0.64	0.07	0.76	0.59	0.57	0.54	0.28	0.60	0.33	0.50	0.70	—	0.80

Item–total correlations are listed in boldface. Items in italics were dropped from the final scale
EPAI = Erectile Performance Anxiety Index

scale ranging from 0 = *rarely or none of the time (less than 1 day)* to 3 = *all of the time (5–7 days)*. Total scores are derived by summing the 10 individual responses. The CES-D-10 has yielded high internal consistency, Cronbach's alpha = 0.81, and high test–retest reliability, $r = 0.80$ [45].

International Index of Erectile Function [28]

The IIEF is a 15-item scale that assesses five domains of male sexual functioning: erectile function, orgasmic function, sexual desire, intercourse satisfaction, and overall satisfaction. Higher scores on these domains indicate higher levels of sexual functioning and overall satisfaction. The scale has undergone extensive psychometric evaluation, which has shown high temporal stability (test–retest above 0.80) and excellent internal consistency, Cronbach's alpha = 0.91. The IIEF has also

been shown to be a sensitive outcome measure for detecting treatment-related change in sexual functioning [29].

Procedures

Both community and introductory psychology students accessed the assessment battery via a URL link directly from within the participant recruitment advertisement. Prior to survey administration, participants were directed to a web page in which they underwent informed consent. All participants were informed that the questionnaire battery focused on male sexuality and that their responses were anonymous. Upon completing the consent process, participants were directed to the online web survey hosted on the Survey Monkey website (<http://www.surveymonkey.com>) to complete the assessment battery. The battery consisted

of demographic questions and five self-report scales aimed at assessing sexual functioning, general anxiety, social anxiety, depression, and EPA (see Measures). All study procedures were approved by the Institutional Review Board at the University of Texas at Austin.

Results

Preliminary Analyses

Demographic variables for each of the two participant subgroups (community vs. college samples) are presented in Table 1. Inter-item and item-total correlations for the 13 items are presented in Table 2. Based on these preliminary analyses, three items (i.e., items 3, 8, and 10) were dropped due to their low item-total correlations.

EPAI total scores were also examined as a function of source of sample (community vs. university sample) and age of sample (younger than 25 years vs. 25 years and older). The older group scored significantly higher (mean 9.22, standard deviation [SD] 10.4) than the younger group (mean 4.99, SD 7.7), $t = 3.705$, $P < 0.001$. The community sample did not differ from the university sample after controlling for age, $F(1, 205) = 0.000$, $P = \text{ns}$.

Factor Analysis

We conducted an exploratory factor analysis of the EPAI using methods described by Brown [46]. All analyses were performed on SPSS software version 19 (SPSS Inc., Chicago, IL, USA). A maximum likelihood analysis with oblique rotation (oblimin) was conducted on the final 10 items. The Kaiser-Meyer-Olkin (KMO) sampling adequacy index suggested that the sample size ($N = 207$) was adequate for the analysis, $KMO = 0.917$. The point of inflection on the screen plot combined with the pattern of factor loadings was consistent with a one-factor solution, which accounted for 63.2% of the variance.

Reliability of the EPAI

The internal consistency of the 10-item EPAI was examined using Cronbach's alpha. Results of this analysis yielded a Cronbach's alpha of 0.94 for the 10-item scale. Temporal stability of the EPAI was tested by calculating the correlation between two administrations of the EPAI separated by an average of 3.5 weeks (range 2–10 weeks) on a subsample of participants ($n = 42$). The coefficient was 0.85, suggesting a highly stable scale across this short time period. Paired t -tests between time

Table 3 Pearson correlations between EPAI and discriminant and convergent measures broken down by age group

EPAI	Younger men (≤ 25) ($n = 106$)	Older men (> 25) ($n = 101$)	Total ($n = 207$)
Convergent measures			
Sexual anxiety [†]	0.56***	0.66***	0.65***
Erectile function [‡]	-0.33***	-0.55***	-0.38***
Social anxiety [§]	0.28**	0.41***	0.28***
Discriminant measures			
State anxiety [¶]	0.06	0.05	0.04
Depression ^{††}	0.37***	0.34***	0.37***

** $P < 0.01$

*** $P < 0.001$

[†]McCabe Sexual Function Scale

[‡]International Index of Erectile Functioning

[§]Appraisal of Social Concerns

[¶]State-Trait Anxiety Inventory

^{††}Center for Epidemiologic Depression Scale

EPAI = Erectile Performance Anxiety Index

1 and time 2 revealed a nonsignificant fluctuation in participants' mean EPAI total scores from time 1 (8.7) and time 2 (9.4), $P > 0.05$.

Convergent and Discriminant Validity

To test for convergent validity, we examined the association of the EPAI with measures of other constructs related to EPA. The convergent measures included the performance subscale of the SFS, the IIEF, and the ASC. The performance anxiety subscale of the SFS is a nongender-specific measure of performance anxiety regarding sexual activity in general. The IIEF assesses orgasm and erectile function as well as sexual satisfaction. The ASC assesses general social anxiety concerns not specific to sexual situations. Because erectile functioning declines with age, we performed a median split on the age variable and examined the pattern of intercorrelations among the measures for the younger half of the sample (age < 25) and older half of the sample (age ≥ 25) separately (see Table 3). A Bonferroni correction was used to control the error rate in multiple comparisons of the EPAI's correlations with the three measures used to assess convergent validity ($0.05/3 = 0.0167$). The EPAI was moderately correlated with the performance anxiety subscale of the SFS across both age groups (combined sample $r = 0.65$). The EPAI showed a moderate inverse relationship with the IIEF among older men ($r = -0.55$) but only a modest negative association in younger men ($r = -0.33$). Finally, the EPAI was moderately correlated with the ASC

for older men ($r = 0.41$) but less so for younger men ($r = 0.28$).

To test for discriminant validity, we examined the association of the EPAI with measures of constructs less related to EPA. The two measures selected were the STAI-S and the CES-D-10. Again, a Bonferroni correction was used to control the error rate in multiple comparisons of the EPAI with the two measures used to assess discriminant validity ($0.05/2 = 0.025$). There was no significant association between the EPAI and the STAI-S for either the younger or older samples. In contrast, the EPAI showed a modest but significant positive association ($r = 0.37$) with the CES-D-10 (see Table 3). Procedures outlined by Chen & Popovich [47] were used to test whether the EPAI was more strongly related to the three convergent measures (SFS, IIEF, and ASC) than it was to the two selected discriminant measures (STAI-S, CES-D-10). These analyses indicated that the EPAI was more strongly related to each of the three convergent measures than it was to the STAI-S (all P s < 0.01).

Discussion

The EPAI was developed to fulfill the need for a specific EPA measure within the larger domain of assessment strategies for male sexual dysfunction. Unlike other measures of sexual anxiety that tap multiple sources of anxiety for both men and women (e.g., fear of sexual intimacy, fear of not being perceived as attractive, etc.), the EPAI is specific for men and focuses exclusively on the construct EPA. We defined EPA as a state of apprehension, self-focused attention, and compensatory protective actions in response to the anticipated difficulty in achieving or maintaining an erection during sexual activity. The initial design of the EPAI was based on Barlow's model of ED and more recent evidence linking safety behaviors with anxiety psychopathology (see Telch and Lancaster [39] for a review). The final version of the EPAI contains 10 items tapping three hypothesized a priori facets: anticipatory anxiety prior to sexual activity, self-monitoring of one's sexual response during sexual activity, and avoidance and/or safety-seeking behaviors.

Summary of Findings

Psychometric analyses were undertaken to examine the EPAI's factor structure, reliability, convergent, and discriminant validity. Despite our

inclusion of items believed to tap three a priori content facets, results of our exploratory factor analysis indicate that the EPAI appears to measure a single superordinate factor that accounted for over 63% of the variance.

Our analyses also revealed that the EPAI possesses outstanding internal consistency and excellent temporal stability over a 3-week period. Taken together, these data provide encouraging preliminary support for the EPAI's reliability.

Examination of the EPAI's pattern of correlations with measures varying in their hypothesized shared variance with the construct of EPA provides preliminary support for the EPAI's convergent and discriminant validity. Specifically, the EPAI correlated highly with the SFS—a well-established general measure of sexual anxiety—and was moderately associated with the IIEF—the gold standard measure of erectile functioning. In contrast, the EPAI's association with measures hypothesized to be less related to EPA showed a nonsignificant association with state anxiety and a modest but significant correlation with depression. Note that the association between the EPAI and depression in the older subsample, albeit significant, was significantly weaker in magnitude than the association between the EPAI and the two convergent measures. Taken together, these findings provide unequivocal support for the convergent validity of the EPAI, whereas evidence for its discriminant validity appears less strong, particularly for men under the age of 25.

Potential Uses of the EPAI

The EPAI has several potential uses for both clinicians and researchers. Because of its brevity, the EPAI can be used as a brief screening instrument in urology clinics for identifying men who might profit from early psychoeducational interventions for EPA. For patients being prescribed medication for ED, administration of the EPAI before and after initiating pharmacotherapy provides important information on the effects of ED medication for reducing patients' erectile performance-related apprehension. The EPAI may also prove useful to psychologists and other mental health clinicians to assist in identifying specific targets for psychosocial interventions (e.g., fading of anxiety-inducing safety strategies identified by the EPAI) and for tracking patients' improvement over the course of treatment.

As a research tool, the EPAI may prove useful to both epidemiologists and clinical scientists investigating the nature and treatment of ED. In

epidemiological investigations, the EPAI can be used to examine both the prevalence of EPA and its potential risk factor status in the development of ED. The EPAI might also prove useful as a secondary outcome measure in clinical efficacy studies of medical and psychosocial treatments for ED to assess whether the ED interventions under investigation are improving men's EPA. As a putative moderator variable, the EPAI could be used to determine whether men's EPA at the start of treatment predicts clinical response to different ED treatments. Also, the EPAI could be used to test whether treatment-related changes in erectile anxiety mediate the observed changes in erectile performance achieved during treatment (or vice versa).

Limitations

There are several limitations of the study that deserve mention. First, our sample was relatively small in number and comprised relatively healthy young men. Replications are warranted with larger and more diverse samples, including patients presenting with threshold diagnoses of male ED. Second, our findings with respect to discriminant validity were somewhat mixed. Although the EPAI was significantly more related to measures of erectile functioning and general sexual anxiety than with state anxiety, the EPAI showed rather weak evidence of discriminant validity in relation to its association with depression, especially for the younger study subgroup. A third limitation is the absence of data on the sensitivity of the EPAI in detecting changes in EPA before and after treatment for ED. Evidence of the EPAI's sensitivity to treatment awaits future research.

Conclusions

Despite these study limitations, data from this initial psychometric evaluation suggest that the EPAI is a promising, cost-effective, psychometrically sound index of anxiety specific to erectile performance concerns that fills an important gap in the assessment of ED in both clinical and research settings.

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Statement of Authorship

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- (a) **Final Approval of the Completed Article**
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Appendix A

EPAI

Listed below are statements designed to assess your anxiety about being able to *achieve* or *maintain* an erection during sexual activity. Read each statement carefully and then select the number that best fits how true each statement is for you *during the past week*. If you have *not* been in a sexual situation during the past week, base your responses on how you imagine you would react.

1. **When I find myself in a situation where sex is a possibility, I often worry or become apprehensive that I will have trouble getting or keeping an erection.**

1	2	3	4	5
Not at all like me			Very much like me	

2. **I have frequent thoughts about not being able to get or keep an erection.**

1	2	3	4	5
Not at all like me			Very much like me	

3. **I find myself getting nervous when my sexual partner talks about having sex.**

1	2	3	4	5
Not at all like me			Very much like me	

4. **I sometimes use excuses (e.g., feeling tired, headache) to avoid sex.**

1	2	3	4	5
Not at all like me			Very much like me	

5. **I sometimes feel the need to take erection dysfunction (ED) medications or supplements in order to get or keep an erection.**

1	2	3	4	5
Not at all like me			Very much like me	

6. **I often feel the need to drink alcohol or take other anti-anxiety medications to manage my anxiety about not being able to get or keep an erection.**

1	2	3	4	5
Not at all like me			Very much like me	

7. **When in a sexual situation, I often check to see whether I am becoming aroused.**

1	2	3	4	5
Not at all like me			Very much like me	

8. **I sometimes read books or articles on the Internet about ways to prevent erection problems.**

1	2	3	4	5
Not at all like me			Very much like me	

9. **In the middle of having sex, I often find myself focusing on whether I will be able to maintain my erection.**

1	2	3	4	5
Not at all like me			Very much like me	

10. **I feel tense or nervous in sexual situations even when I know the person well.**

1	2	3	4	5
Not at all like me			Very much like me	