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Exploring the Role of Sexual Avoidance in Male Sexual Dysfunction

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Theoretical models of male sexual dysfunction highlight the role of sexual avoidance as a maintaining factor. However, little empirical research has directly tested the role of sexual avoidance in samples of men with sexual problems. The goals of the current study were to A) assess the association between sexual avoidance, sexual function, and subjective sexual well-being, and B) explore possible predictors of sexual avoidance, including insecure attachment, activation of negative sexual schemas, and trait experiential avoidance. One hundred and fifty eight men with self-identified impairments in sexual function (low desire, erectile function, and/or premature/delayed ejaculation) completed validated self-report measures in a secure online survey. Sexual avoidance was uniquely predicted by most aspects of sexual function, and was correlated with poorer subjective sexual well-being. Higher levels of attachment avoidance and activation of negative schemas uniquely predicted more frequent sexual avoidance. Alternatively, interaction models suggested that impaired erectile function was less likely to be associated with sexual avoidance for those with high levels of attachment anxiety and for those with high levels of trait experiential avoidance. Theoretical and practical implications are discussed.

Introduction

The Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association [APA], 2013) specifies multiple diagnoses of male sexual dysfunction, including distressing impairments in erectile function, low sexual desire, and delayed or premature ejaculation. Impaired sexual function is common amongst men (e.g., Lewis et al., 2004) and is associated with a variety of negative outcomes (McCabe & Althof, 2014). Although pharmaceutical treatments are widely utilized (Rosen & McKenna, 2002), they have numerous contraindications, can result in negative side effects (e.g., Lim, Moorthy, & Benton, 2002), and are ineffective in some cases (Goldstein et al., 1998; MacDonagh, Ewings, & Porter, 2002). There is thus a continuing need for well-supported bio-psycho-social theoretical models to inform effective psychotherapeutic treatments.

One of the most widely tested models of male sexual dysfunction is Barlow's model (Barlow, 1986; Wiegel, Scepkowski, & Barlow, 2007), which posits that impaired sexual arousal is caused and maintained by an interaction of factors, including negative sexual schemas, sympathetic

nervous system activation, and distraction from positive erotic cues such as one's own physical pleasure. This model is based on a number of classic experimental studies (e.g., Beck, Barlow, & Sakheim, 1983), and has generally been supported by subsequent research (Cranston-Cuebas, Barlow, Mitchell, & Athanasiou, 1993; Nelson & Purdon, 2011). However, while multiple studies have tested aspects of the model, the majority of this work has focused on processes thought to occur in the context of sexual activity (e.g., distraction; Abrahamson, Barlow, Sakheim, Beck, & Athanasiou, 1985; Beck et al., 1983). Other important processes are thought to occur *subsequent* to sexual activity and serve to maintain sexual problems over the long-term. The initial model (Barlow, 1986) specified avoidance of sex (e.g., refusing partner requests for sex, making excuses to not engage in sex, avoiding specific activities/positions during sex) as the key "outcome" of impaired sexual function that maintains overly negative expectancies and affective responses to future sexual experiences. Updated versions of the model have continued to highlight avoidance as an important maintaining factor, but include additional ones such as chronic worry about sex (Wiegel et al., 2007).

Despite the important role of sexual avoidance in this model, researchers have noted that the role of avoidance in sexual dysfunction has received little empirical attention. For example, Sbrocco and Barlow (1996) published a commentary using Behavioral Regulation Theory (Carver & Scheier, 1988)

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as a framework to focus on disengagement and withdrawal during sex. They reiterated that such withdrawal is likely a secondary maintenance factor rather than a primary causal factor of sexual dysfunction. However, while the authors reported that “quitting” sex in response to a lost erection is common, they noted that many of their suppositions regarding such avoidance were not based on existing empirical evidence because overt withdrawal and avoidance of sex had generally been ignored in the empirical literature.

Guidelines for assessment and treatment of sexual dysfunction typically include asking about sexual avoidance (e.g., Graziottin & Althof, 2011). Additionally, most psychotherapies for sexual dysfunction include interventions to address potential avoidance. For example, Cognitive Behavioral Therapy (CBT) typically includes scheduled sensate focus exercises meant in part to reduce avoidance (Weiner & Avery-Clark, 2014). Similarly, mindfulness-based treatments of sexual function encourage engagement with sexual activity and one’s internal experiences during sex (Brotto, 2013), attempting to address both behavioral and experiential avoidance (Stephenson, 2017). However, the degree to which these strategies are based on empirical evidence is unclear.

Since Sbrocco and Barlow’s (1996) commentary, there have been a small number of published studies providing evidence that avoidance may play an important role in male sexual dysfunction. One set of studies are those attempting to validate the Golombok-Rust Inventory of Sexual Satisfaction (GRISS), which includes a subscale explicitly assessing avoidance of sex resulting from impaired sexual function (Rust & Golombok, 1986). In the initial validation, the full scale and all subscales significantly differentiated between men with and without sexual dysfunction. A validation of a Dutch translation of the GRISS (van Lankveld & ter Kuile, 1999) similarly found that men with sexual dysfunction scored significantly higher on the full scale and avoidance subscale than healthy controls.

Conversely, Amidu et al. (2019) recently validated the GRISS for use in men with type 2 diabetes and found that those with sexual dysfunction actually reported *less* avoidance than those with diabetes but no sexual dysfunction. It is, however, important to note that this recent study was conducted in Ghana with a sample of African men, and thus may not generalize to samples in the US or Europe. Indeed, in other studies assessing men with sexual problems secondary to medical conditions (e.g., chronic renal failure or infertility; Keskin, Babacan Gümüş, & Taşdemir Yiğitoğlu, 2019; Shoji et al., 2014), the presence of sexual problems does seem to be associated with reports of more frequent sexual avoidance, suggesting the Amidu et al. study may be an outlier.

These studies provide evidence that, at least in some cases, men with sexual dysfunction report more avoidance of sex. However, these studies did not report correlations assessing the linear association between functional impairment and frequency of avoidance using continuous scales of these constructs. Thus, it is unclear whether there is a “dose response” of more severe impairment being associated with

greater avoidance. It is also unclear whether avoidance is associated specifically with some aspects of sexual experiences (e.g., erectile function only), or more broadly with sexual function (including desire and orgasm) and subjective sexual well-being (a term used here to refer to both sexual satisfaction and distress).

There have also been a number of qualitative studies supporting the importance of avoidance. Bokhour, Clark, Inui, Silliman, and Talcott (2001) interviewed 48 men experiencing sexual difficulties after treatment for prostate cancer. Multiple men reported feeling hesitant initiating physical intimacy and/or that they would sometimes find ways to avoid interactions before sex occurred. Symonds, Roblin, Hart, and Althof (2003) interviewed 28 men with self-diagnosed premature ejaculation and similarly found reluctance initiating new sexual relationships due to fear of disappointing a partner. Mitchell and Wellings (2013) assessed how men self-defined sexual function and sexual problems. One of the themes identified by multiple individuals was avoidance of sexual activity.

Only two large quantitative studies have explicitly assessed avoidance of sex and its relationship to male sexual dysfunction. Kalmbach, Ciesla, Janata, and Kingsberg (2012) sampled 1,200 undergraduates and found that a scale of sexual avoidance correlated significantly with erectile function, orgasmic function, sexual satisfaction, and sexual distress. Hendrickx, Gijs, and Enzlin (2016) recruited a representative sample of over 1,300 Flemish men and women and found that 12% of men with a distressing sexual difficulty reported they often or always avoided sex as a result vs. 0% with non-distressing sexual difficulties. Interestingly, even among men with distressing sexual problems, 74% reported they “never” avoided sex as a result. Combined, these results suggest that avoidance is reported by some, but not all, men with impaired sexual function (not just problems with erectile function), and that the severity of impairment may be associated with frequency of avoidance.

To improve our scientific understanding of the role of avoidance in male sexual dysfunction, it is important to address a number of unanswered questions. First, it would be helpful to establish the strength of the association between sexual avoidance and the symptoms of sexual dysfunction (impaired function and subjective distress regarding sex; APA, 2013) in a sample of men with sexual impairments. While Kalmbach et al. (2012) reported moderate associations, the use of an undergraduate sample limits the applicability of those results to the wider population of men with sexual dysfunction. Similarly, while Hendrickx et al. (2016) reported that distressing sexual problems in particular are associated with higher rates of avoidance, their use of non-validated single-item measures of these constructs and the fact that only 15% of their male sample may have met criteria for sexual dysfunction (i.e., reported distressing functional impairment) also limits their findings.

Second, it would be helpful to know who is more or less likely to avoid sex as a result of impaired sexual function.

The findings of Hendrickx et al. (2016) suggest that, even in the case of distressing sexual problems, many men do not report avoiding sex. Given the general lack of empirical evidence in this area, it is difficult to predict who may be most likely to avoid sex. However, there are multiple individual difference factors that have been empirically and/or theoretically linked to avoidance processes in the context of sexual activity.

One potential predictor of sexual avoidance is activation of negative sexual schemas. Per Barlow's model (and broader models of psychopathology like the general Cognitive Model, Beck, 1963), behavioral avoidance should result from negative thoughts and interpretations regarding sexual experiences. Other research on sexual dysfunction, such as that of Pedro Nobre and colleagues has suggested that such negative thoughts are caused by activation of relevant underlying negative schemas (Nobre & Pinto-Gouveia, 2003, 2009a), especially schemas related to incompetence (Peixoto & Nobre, 2017). The activation of such schemas may thus make impaired sexual function more emotionally aversive by causing distressing thoughts and interpretations regarding impaired sexual function. This distress may then increase the likelihood of sexual avoidance.

A second potential predictor of behavioral avoidance is trait experiential avoidance. Multiple researchers have conceptualized experiential avoidance as a trait reflecting consistent attempts to reduce, numb, or alleviate negative internal experiences (Cobb, Lancaster, Meyer, Lee, & Telch, 2017; Gámez et al., 2014). It is possible that trait experiential avoidance speaks to a broad tendency toward avoidance, in which case higher levels of this trait may strengthen the degree to which worse sexual function is associated with avoidance. Alternatively, in more recent iterations of Barlow's model (Wiegel et al., 2007), two possible outcomes are specified as the result of the dysfunctional sexual cycle: behavioral avoidance or "worry" surrounding sex. Given that experiential avoidance represents a more internally-focused process than behavioral avoidance, it may be that individuals with higher levels of experiential avoidance would be more likely to chronically worry about impaired sexual function and be *less* likely to engage in behavioral avoidance.

A final potential predictor of sexual avoidance is attachment insecurity. Adult attachment orientation has been conceptualized as existing on two partly independent dimensions: attachment anxiety and attachment avoidance (Mikulincer & Shaver, 2005). Attachment anxiety includes intense fears of abandonment and rejection in close relationships, along with (often counterproductive) attempts to increase closeness and intimacy. Attachment avoidance includes fear of overreliance on relational partners, along with attempts to distance and reduce emotional intimacy in times of distress.

Multiple studies have explored ways in which the attachment system may shape sexual experiences. For example, motives for sex seem to differ depending on attachment orientation, with those high in attachment anxiety more

motivated by a desire to increase emotional closeness and those high in attachment avoidance least likely to report these motives (e.g., Birnbaum, Weisberg, & Simpson, 2011; Snapp, Lento, Ryu, & Rosen, 2014). Additionally, attachment anxiety in particular seems to magnify the importance of both positive and negative sexual experiences (Birnbaum, Reis, Mikulincer, Gillath, & Orpaz, 2006; Butzer & Campbell, 2008).

Based on these results, it may be that high levels of either attachment anxiety or attachment avoidance could predict a higher likelihood of sexual avoidance. For attachment avoidance, this could be because impaired sexual function often results in decreased physical pleasure (e.g., Stephenson, Truong, & Shimazu, 2018). In the relative absence of relationship-enhancing motives for sex (Davis, Shaver, & Vernon, 2004), reducing pleasure would remove one of the primary motives for avoidantly attached men to initiate sex. Those high in attachment anxiety may avoid sex to prevent the perceived catastrophic outcomes of a negative sexual experience (Butzer & Campbell, 2008). However, attachment anxiety is also associated with frantic, impulsive attempts to maintain connection and intimacy with partners, often through sex (Birnbaum, Mikulincer, Szepeswol, Shaver, & Mizrahi, 2014). This tendency to use sex to meet basic attachment needs in response to perceived relationship threats may override typical processes regarding sexual problems and make anxiously attached individuals *less* likely to avoid sex in response to sexual problems.

The goal of the current study was to begin assessing these possibilities. Specifically, a sample of men reporting impaired sexual function was recruited and utilized to assess the strength of association between sexual avoidance and multiple facets of sexual function (desire, erection, orgasm) and subjective sexual well-being (sexual satisfaction and distress). Expanding on past research, validated multi-item measures were used to assess these constructs, and statistical models accounting for the correlations between different aspects of sexual function (Jannini, Lombardo, & Lanzi, 2005) were used. It was predicted that avoidance would be significantly correlated with all aspects of sexual function and subjective sexual well-being, and that these associations would be of moderate strength.

The individual differences described above (negative schema activation, experiential avoidance, and attachment) were also tested as predictors of sexual avoidance. These possible associations were tested in two ways. First, as discussed, there was reason to predict that each trait would predict greater sexual avoidance (although the opposite pattern was also possible in some cases). To test this possibility, regression models were used to assess the degree to which these traits were statistically predictive of frequency of sexual avoidance. Second, the interaction between these traits and erectile function in predicting sexual avoidance was assessed. Barlow's model suggested that impairment in erectile function would, through a variety of mechanisms, ultimately result in sexual avoidance. However, other factors could conceivably

result in avoidance of sex (e.g., problems in the wider relationship, sexual disgust, etc.; de Jong, van Overveld, & Borg, 2013). As such, a potentially more stringent test of these trait predictors is to directly assess the link between function and avoidance, i.e., determine whether erectile function is a stronger or weaker predictor of sexual avoidance depending on these factors (vs. the traits simply predicting more sexual avoidance). Given the limited research in this area and the ability to predict multiple patterns of relationships based on existing research and theory, these analyses were considered exploratory.

Method

Participants and Procedures

Participants were recruited through online postings on Amazon's MTurk and Craigslist.com. Postings requested that respondents live in the United States and be fluent in English. Inclusion criteria were male gender, age 18 or older, currently in a monogamous heterosexual relationship (this criterion was related to other study aims not relevant to the current paper), sexually active in the past month, and experiencing self-identified impairment in desire, erection, or orgasm/ejaculation in the past month. Potential participants contacted the lab via phone or e-mail. All participants completed a phone screen with a trained research assistant to ensure they met study inclusion criteria. Research assistants did not conduct formal diagnostic interviews, but did confirm that all participants considered themselves to be experiencing problems with sexual function. Following the phone screen, participants completed a secure online survey hosted by SurveyMonkey.com and were compensated \$10. The Institutional Review Board of Willamette University approved all study procedures.

The sample in the current analyses consisted of 158 men with an average age of 36.47 ($SD = 11.29$). Forty-two percent reported being married, with the remainder in monogamous relationships. Relationship length averaged 82.15 months (Median = 43 months; $SD = 101.07$). Seven and a half percent reported having earned an associate degree, 39.2% reported a bachelor's degree, and 12.7% reported a graduate degree, 27.8% reported some college, and 10.8% reported a high school degree or less. The sample was 70.9% Caucasian, 11.4% African American, 8.2% Asian American, and 5.7% Hispanic. Participants self-identified as having impairments in sexual desire ($N = 97$; 61.4%), erection ($N = 74$; 46.8%), and orgasm ($N = 125$; 79.1%), with many participants reporting impairments in multiple areas.

Measures

Sexual Avoidance. Sexual avoidance was assessed using the 7 item avoidance subscale of the Golombok-Rust Inventory of Sexual Satisfaction (GRISS; Rust & Golombok, 1986) - a 28 item self-report scale of sexual

dysfunction. Higher scores indicate more frequent sexual avoidance. Example items are "Do you try to avoid having sex with your partner?" and "Do you avoid engaging in specific sexual behaviors (e.g., intercourse) because you're worried about your sexual function?" The GRISS has exhibited adequate validity and reliability in multiple studies (Rust & Golombok, 1986; van Lankveld & ter Kuile, 1999).¹ In the current sample, Cronbach's alpha for the avoidance subscale was 0.87.

Sexual Function and Satisfaction. Sexual function and satisfaction were assessed using the International Index of Erectile Function (IIEF; Rosen et al., 1997) - a 15 item self-report scale measuring erectile function, orgasmic function, intercourse satisfaction, sexual desire and overall satisfaction - as well as three items from the Premature Ejaculation Diagnostic Tool (PEDT; Symonds et al., 2007). Higher scores on the IIEF indicate better sexual function or well-being. The IIEF has demonstrated adequate reliability and validity in numerous studies (e.g., Rosen, Revicki, & Sand, 2014; Rosen et al., 1997). In the current sample, Cronbach's alpha was 0.88 for the sexual satisfaction subscale, 0.89 for desire, 0.90 for erectile function, and 0.92 for orgasmic function. The PEDT includes five items assessing premature ejaculation symptoms and resulting distress. Due to overlap with another construct of interest, we excluded the two items explicitly assessing subjective emotional distress. Higher scores on the PEDT indicate worse symptoms of premature ejaculation. The scale has exhibited adequate reliability and validity (Symonds et al., 2007) and Cronbach's alpha for the three items utilized in the current study was 0.90. Seventy men (44.3%) scored within the clinical range on the erectile function subscale of the IIEF, suggesting significant erectile problems (Cappelleri, Rosen, Smith, Mishra, & Osterloh, 1999). In terms of the other subscales, mean responses across items indicated that sexual desire was "moderate," men were reaching orgasm "most times" during sex, that it was "somewhat difficult" to delay ejaculation, and that participants found sex "fairly enjoyable."

Sexual Distress. Sexual distress was assessed using the six-item personal concern subscale of the Sexual Satisfaction Scale (SSS; Meston & Trapnell, 2005) - a thirty item self-report scale measuring multiple aspects of subjective sexual

¹ In validation studies, scores on the GRISS were computed using stanines. In the current sample, the mean stanine score on the avoidance subscale was 4.92 ($SD = 1.97$), which is near the cutoff score of 5 specified by the initial authors as indicating a "problem." Responses in the current sample were very similar to other samples of men reporting sexual problems, but not necessarily seeking treatment (van Lankveld & ter Kuile, 1999). However, the conversion from raw scores to stanine scores necessarily results in lost information (i.e., men with different raw scores receive the same standardized score). As such, we utilized the raw sum of item scores in all analyses (although results did not differ substantially regardless of which coding method was used).

well-being. Higher scores indicate less distress (greater well-being). This scale has been validated in women (Meston & Trappnell, 2005) and has been used (though not formally validated) with multiple male samples (e.g., Stephenson, Ahrold, & Meston, 2011).² In the current sample, Cronbach's alpha was 0.86.

Negative Schema Activation. Negative schema activation was assessed using the Cognitive Schema Activation Questionnaire (CSAQ; Nobre & Pinto-Gouveia, 2000, 2009b) - a 28 item self-report scale measuring thoughts resulting from the activation of negative self-schemas in participants when faced with sexual difficulties. Higher scores indicate more frequent negative thoughts regarding sexual problems. The CSAQ has exhibited adequate reliability and validity (Nobre & Pinto-Gouveia, 2000). In the current sample, Cronbach's alpha was 0.96.

Experiential Avoidance. Trait experiential avoidance was assessed using the Brief Experiential Avoidance Questionnaire (BEAQ; Gámez et al., 2014) - a fifteen item self-report scale measuring one's stable tendency to engage in experiential avoidance. Higher scores indicate greater trait experiential avoidance. This scale has demonstrated adequate reliability and validity across multiple samples (Gámez et al., 2014). In the current sample, Cronbach's alpha was 0.87.

Attachment Orientation. Adult attachment orientation was assessed using the Experiences in Close Relationships Scale – Revised (ECR-R; Sibley & Liu, 2004) – a 12 item self-report scale of attachment that includes subscales for attachment anxiety and avoidance. Higher scores indicate more insecure attachment. The ECR-R has demonstrated adequate reliability and validity in multiple studies (e.g., Fraley, Waller, & Brennan, 2000; Sibley, Fischer, & Liu, 2005). In the current sample, Cronbach's alpha was .88 for avoidance and .78 for anxiety. Means and SDs for study measures can be found in Table 1.

Statistical Analyses

Three sets of analyses were performed. First, bivariate correlations were used to assess the association between sexual avoidance and other sexual factors: sexual desire, erectile function, orgasmic function, premature ejaculation, sexual satisfaction, and sexual distress. Given the typically strong correlation between aspects of sexual function (desire, erectile function, orgasmic function, and premature ejaculation; Jannini et al., 2005), multiple linear regression was also utilized to assess which aspects of sexual function exhibited a unique association with avoidance, controlling for all other aspects of function.

² Although there is now a scale of sexual distress validated for men (Santos-Iglesias, Mohamed, Danko, & Walker, 2018), this validation had not been published when data collection began for the current study.

Table 1. Descriptive statistics for study measures

Scale	Mean	SD	Range
IEEF Desire	6.33	2.09	2–10
IEEF Erectile function	24.60	5.56	6–30
IEEF Orgasmic function	7.85	2.25	2–10
IEEF Overall satisfaction	6.25	2.24	2–10
IEEF Total	55.19	10.37	26–75
PEDT function	4.24	3.87	0–12
SSS Personal Distress	16.63	6.18	6–30
GRISS Avoidance	14.41	5.38	7–29
Negative Schema	60.87	20.42	27–114
Experiential Avoidance	48.90	13.28	19–81
Attachment Avoidance	15.58	7.70	6–38
Attachment Anxiety	20.41	7.62	6–39

Note: IIEF = International Index of Erectile Function; PEDT = Premature Ejaculation Diagnostic Tool; SSS = Sexual Satisfaction Scale; GRISS = Golombok-Rust Inventory of Sexual Satisfaction

Second, bivariate correlations were used to assess the association between sexual avoidance and possible individual difference predictors: negative schema activation, trait experiential avoidance, and adult attachment orientation. As with the above, multiple regression was also used to assess each of these possible predictors of sexual avoidance simultaneously.

Third, multiple linear regression models were used to assess whether erectile function interacted with the same variables (schema activation, experiential avoidance, attachment orientation) in predicting sexual avoidance. These analyses represented a more direct test of the link between erectile problems in particular and sexual avoidance proposed by Barlow's (1986) model.

Results

Associations between Sexual Avoidance and Other Sexual Factors

Bivariate correlations were used to assess whether worse sexual function was associated with more frequent sexual avoidance. Sexual avoidance was significantly correlated with all aspects of sexual function and subjective sexual well-being, aside from orgasmic function (i.e., delayed orgasm). Correlations were generally in the moderate range and the strongest association was with sexual distress (see Table 2). Multiple regression models showed that all significant associations between avoidance and aspects of sexual function were unique (i.e., they remained significant when controlling for other aspects of sexual function; See Table 3).

Associations between Sexual Avoidance and Individual Difference Predictors

Sexual avoidance was also significantly correlated with all potential individual difference predictors such that higher

Table 2. Associations between sexual avoidance and sexual function/well-being

	Sexual Desire	Erectile Function	Orgasmic Function	Premature Ejaculation	Sexual Satisfaction	Sexual Distress	Attachment Avoidance	Attachment Anxiety	Negative Schema Activation	Experiential Avoidance
GRISS Avoidance	-.44***	-.37***	-.15+	.25**	-.44***	-.50***	.45***	.27**	.50***	.21**

+ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Note: GRISS = Golombok-Rust Inventory of Sexual Satisfaction

Table 3. Linear regression models assessing associations between A) aspects of sexual function and sexual avoidance, and B) possible predictors of avoidance and sexual avoidance

Outcome Predictor	β	<i>B</i>	<i>SE</i>	<i>F</i>	<i>R</i> ²
GRISS Avoidance				16.68***	.31
Constant		26.77	2.09	***	
Sexual desire	-.38	-.98	.18	***	
Erectile function	-.22	-.21	.07	**	
Orgasmic function	-.12	-.27	.18		
Premature ejaculation	.19	.26	.10	*	
GRISS Avoidance				15.68***	.30
Constant		5.87	1.52	***	
Attachment avoidance	.30	.21	.05	***	
Attachment anxiety	.01	.01	.06		
Schema activation	.37	.09	.02	***	
Experiential avoidance	-.04	-.01	.03		

* $p < .05$; ** $p < .01$; *** $p < .001$

Note: GRISS = Golombok-Rust Inventory of Sexual Satisfaction

levels of negative schema activation, experiential avoidance, and insecure attachment were associated with more frequent sexual avoidance. Attachment avoidance and negative schema activation exhibited stronger associations than did attachment anxiety and experiential avoidance (see Table 2). Indeed, a multiple regression model showed that only the associations with attachment avoidance and negative schema activation remained significant when controlling for all other predictors (see Table 3).

Interactions between Erectile Function and Potential Predictors of Sexual Avoidance

The following models assessed whether the association between erectile function and sexual avoidance was dependent on individual difference predictors. Models included erectile function and one of the four individual differences predictors, as well as the interaction between these terms, as independent variables and sexual avoidance as a dependent variable (see Table 4).

Negative Schemas Activation

The overall model was significant ($F(3, 153) = 21.28$, $p < .001$, $R^2 = .29$). However, the interaction between

Table 4. Linear regression models assessing interactions between erectile function, attachment anxiety, and experiential avoidance predicting sexual avoidance

Outcome Predictor	β	<i>B</i>	<i>SE</i>	<i>F</i>	<i>R</i> ²
GRISS Avoidance				8.97***	.15
Constant		28.27	5.62	***	
Erectile function	-.70	-.65	.21	**	
Attachment anxiety	-.52	-.35	.24		
Erectile function	.70	.02	.01	*	
X Attachment anxiety					
GRISS Avoidance				10.43***	.17
Constant		33.44	7.07	***	
Erectile function	-.91	-.88	.27	**	
Experiential avoidance	-.53	-.21	.13		
Erectile function X	.81	.01	.01	*	
Exper avoid					

* $p < .05$; ** $p < .01$; *** $p < .001$

Note: GRISS = Golombok-Rust Inventory of Sexual Satisfaction

erectile function and negative schema activation was non-significant.

Trait Experiential Avoidance

The overall model was significant ($F(3, 153) = 10.43$, $p < .001$, $R^2 = .17$). Additionally, the interaction between erectile function and experiential avoidance was significant ($\beta = .81$, $p = .04$; see Table 4 for all model parameters). Examination of simple slopes suggested that erectile function was significantly associated with sexual avoidance at low levels of trait experiential avoidance ($-1 SD$; $B = -.49$; $p < .05$), marginally associated at mean levels of trait experiential avoidance ($B = -.35$; $p < .10$), and non-significant at high levels of trait experiential avoidance ($+1 SD$; $B = -.21$; $p > .05$; see Figure 1). In other words, higher levels of trait experiential avoidance were associated with a weaker association between erectile function and sexual avoidance.

Adult Attachment Orientation

The overall model for attachment avoidance was significant ($F(3, 151) = 18.44$, $p < .001$, $R^2 = .27$). However, the interaction between erectile function and attachment avoidance was non-significant ($\beta = .17$, $p > .05$).

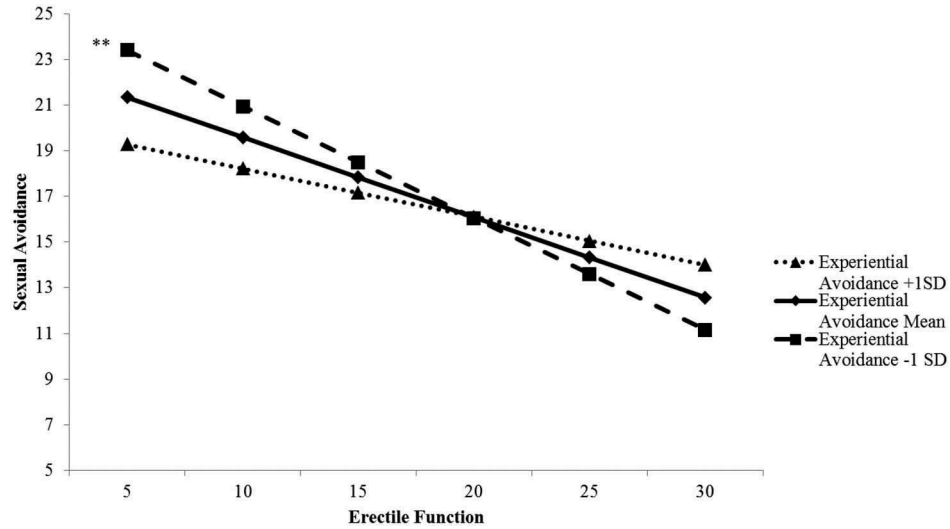


Figure 1. Interaction between erectile function and trait experiential avoidance predicting sexual avoidance.
 * $p < .05$; ** $p < .01$; *** $p < .001$

The overall model for attachment anxiety was significant ($F(3, 150) = 8.97, p < .001, R^2 = .15$). Additionally, the interaction between erectile function and attachment anxiety was significant ($\beta = .70, p = .04$; see Table 4). Examination of simple slopes suggested that erectile function was significantly associated with sexual avoidance at low levels of attachment anxiety ($-1 SD; B = -.41; p < .01$), but not at mean levels of attachment anxiety ($B = -.26; p > .05$) or high levels of attachment anxiety ($+1 SD; B = -.11; p > .05$; see Figure 2). In other words, higher levels of attachment anxiety were associated with a weaker association between erectile function and sexual avoidance.

Discussion

The overall goal of the current study was to assess the association between sexual avoidance and other aspects of male sexual experiences. Sexual avoidance is thought to be an important maintaining factor of sexual dysfunction (Barlow, 1986), but there has been limited empirical investigation of this factor. The current results suggest that, among men with self-identified impairment in sexual function, lower levels of sexual desire and erectile function, as well as premature ejaculation symptoms, were all uniquely associated with more frequent avoidance of sexual activity. Avoidance was

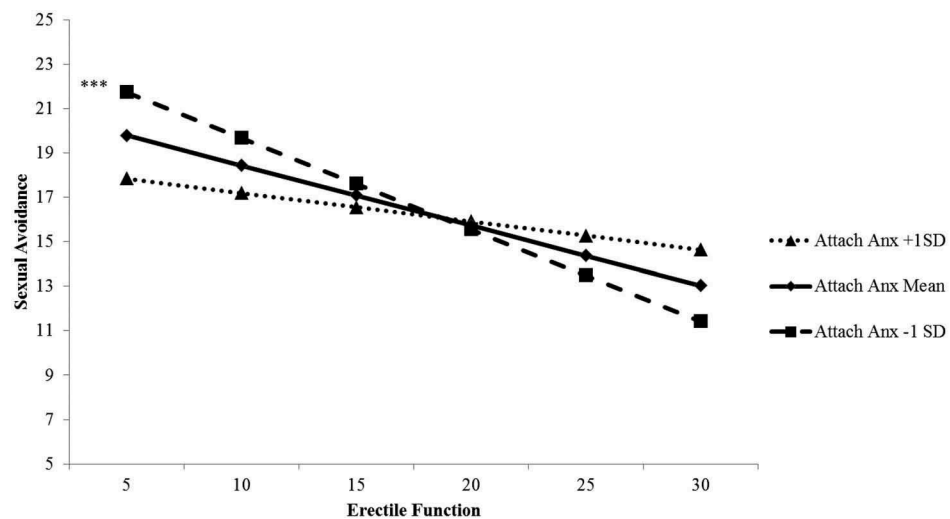


Figure 2. Interaction between erectile function and attachment anxiety predicting sexual avoidance.
 * $p < .05$; ** $p < .01$; *** $p < .001$

also associated with poorer levels of sexual satisfaction and distress. These findings represent a replication and expansion of past studies (e.g., Bokhour et al., 2001; Hendrickx et al., 2016); they suggest that the link between functional impairment and sexual avoidance is indeed exhibited in samples of men with impaired sexual function, that this association exhibits a “dose response” (more severe impairment associated with more frequent avoidance), and that the association between impairment and avoidance is not limited to erectile function. Indeed, low sexual desire was the aspect of sexual function that most strongly predicted sexual avoidance, underscoring the need for additional research on this understudied aspect of male sexual experiences (McCarthy & Ginsberg, 2007).

The current results also suggest important individual differences regarding who is most likely to engage in sexual avoidance. Bivariate correlations showed that higher levels of negative schema activation, trait experiential avoidance, and insecure attachment were all associated with greater sexual avoidance. However, negative schema activation and attachment avoidance were the strongest predictors of sexual avoidance, while attachment anxiety and experiential avoidance were not robust predictors when controlling for other traits. Indeed, analyses that explicitly tested the association between erectile function and sexual avoidance suggested that impaired function was more *weakly* associated with sexual avoidance for anxiously attached men and those more prone to experiential avoidance.

These results help expand the findings of Hendrickx et al. (2016) by identifying the types of men who may be more or less likely to avoid sex as a consequence of impaired erectile function. In particular, men prone to activation of negative sexual schemas and those who are avoidantly attached may be at particularly high risk of sexual avoidance. The findings are consistent with the theorized role of schemas activation in maintaining symptoms of erectile dysfunction (e.g., Nobre & Pinto-Gouveia, 2003) and the use of avoidant coping strategies of avoidantly attached individuals (e.g., Bishop, Hansen, Keil, & Phoenix, 2019).

However, the roles of anxious attachment and trait experiential avoidance may be more complex, with these factors possibly predicting a *lower* likelihood of sexual avoidance, especially in response to erectile problems. These results are also consistent with past literature. As discussed, research on attachment has shown that those higher in attachment anxiety often have sex to meet attachment needs (Schachner & Shaver, 2004; Snapp et al., 2014) and tend to be less motivated by physical pleasure (Davis et al., 2004), especially under perceived relationship threat (Birnbbaum et al., 2011). As such, while anxiously attached men may be at higher risk of impaired sexual function (Dunkley, Dang, Chang, & Gorzalka, 2016), they may respond to this impairment by continuing to seek comfort through sexual activity (e.g., Birnbbaum et al., 2014). Additionally, the decreased pleasure associated with impaired sexual dysfunction (e.g., Stephenson et al., 2018) may be less aversive to anxiously attached men,

again making them less likely to avoid sex as a result of impaired erectile function. It is unclear, however, whether continued sexual attempts despite erectile problems have beneficial effects. Anxiously attached individuals may interpret continued negative sexual experiences catastrophically (Birnbbaum et al., 2006), worsening distress associated with sex (Birnbbaum et al., 2014) and maintaining impaired function. As such, anxiously attached men may find themselves in a vicious cycle where their distress regarding sexual problems leads to increased sexual attempts, which tend to go poorly, further increasing their distress and worsening sexual function.

Those with high levels of trait experiential avoidance, on the other hand, may use alternative methods to cope with impaired erectile function. Recent studies have suggested that experiential avoidance may be strongly linked to internalized coping processes like rumination (Giorgio et al., 2010; Thomas, Raynor, & Ribott, 2015) and worry (Akbari & Khanipour, 2018; Buhr & Dugas, 2012). As discussed previously, more recent iterations of Barlow’s model of sexual dysfunction (Wiegel et al., 2007) suggest that impaired function may be maintained by chronic worry regarding sex rather than frank behavioral avoidance. It may be that individuals prone to experiential avoidance are more likely to follow this alternative “pathway,” internally worrying about sex while continuing to engage in sexual activity despite impaired function.

It is interesting that attachment avoidance and negative schema activation predicted sexual avoidance, but did not interact with erectile function in predicting sexual avoidance (i.e., erectile function was equally predictive of sexual avoidance regardless of the level of these individual differences). In regards to avoidant attachment, it is possible that the primary effects of this style (e.g., a tendency to be motivated for sex by a desire for self-enhancement or peer pressure; Davis et al., 2004) may be less relevant in the current sample which included only men in stable, monogamous relationships. It is also important to note that, in the current sample, the association between attachment avoidance and erectile function was relatively weak ($r = -.18$). As such, our sample may not have included enough men with both avoidant attachment and erectile problems to sufficiently test their interaction.

In regards to negative schema activation, it may be that this factor is a stronger predictor of avoidance stemming from other aspects of sexual function besides erectile function (e.g., premature ejaculation), and/or that an explicit self-report scale is less effective than implicit measures meant to assess schematic content (consistent with the theorized subconscious nature of psychological schemas; Andersen, Cyranowski, & Espindle, 1999). Another possibility is that activation of negative sexual schemas may serve as a mediator through which impaired erectile function leads to avoidance, rather than a moderator of this association (which would be especially consistent with Nobre’s model of sexual dysfunction; Nobre & Pinto-

Gouveia, 2003). Indeed, researchers in the broader field of psychopathology have recently commented on the possibility of a single factor functioning as both a mediator and a moderator, with its role changing over time (e.g., Karazsia & Berlin, 2018). This possibility may be particularly likely for sexual schemas. Specifically, the prior *existence* of negative schemas (possibly best assessed by implicit measures) may serve as a moderator wherein initial experiences with erectile problems are more likely to lead to sexual avoidance. Alternatively, the later *activation* of these schemas (possibly reflected in thoughts during sex, which can be assessed via face-valid self-report scales) may mediate already established links between long-standing erectile problems and sexual avoidance. Clearly, future research using a variety of assessment methods and longitudinal data would be necessary to test these possibilities.

Individual differences in how sexual problems may manifest have a number of clinical implications. In many cases, specific behavioral strategies such as scheduling sexual activity and systematic desensitization may be appropriate to address behavioral avoidance of sex stemming from erectile problems. However, individuals who are anxiously attached and/or prone to experiential avoidance may alternatively be suffering from the effects of continued attempts at sexual activity that go poorly (rather than maladaptive avoidance of sex). Indeed, Stephenson and Meston (2015) previously discussed the possibility that sexual avoidance may function as a key maintenance factor of sexual dysfunction in situations where the perceived negative outcomes of sexual problems are overestimated (similarly to anxiety disorders; Foa & Kozak, 1986). However, other instances of impaired sexual function may be maintained by the repeated experience of legitimate negative outcomes such as partner responses of frustration or sadness (Stephenson & Meston, 2012). This difference in the function of avoidance – maladaptively maintaining inaccurate beliefs regarding the severity of outcomes vs. adaptively avoiding negative outcomes – may help inform optimal treatment matching. For example, anxiously attached men with erectile problems may benefit most from other aspects of traditional sex therapy (e.g., the “ban on sex” typically used in sensate focus; Weiner & Avery-Clark, 2014), and/or from alternative interventions that focus more explicitly on internal processes of attention and engagement – e.g., cognitive therapy (Carey, 1998) or mindfulness interventions (e.g., Bossio, Basson, Driscoll, Correia, & Brotto, 2018; Brotto, 2013; Stephenson & Welch, *in press*).

Strengths and Limitations

The current study had a number of strengths, including utilization of a well-supported theoretical model of sexual dysfunction, a sample consisting entirely of men reporting impaired sexual function, and the use of validated multi-item scales. However, there were also important limitations. First

and foremost, the methods were cross-sectional and correlational, meaning that no conclusions regarding causality amongst factors can be drawn. While the theoretical model utilized (Barlow, 1986) suggests that impaired erectile function and related processes result in sexual avoidance, it is also possible that unmeasured “third variables” explain their association. Additional experimental and treatment-outcome research, such as that exploring sexual pain disorders in women (e.g., ter Kuile, Melles, de Groot, Tuijnman-Raasveld, & van Lankveld, 2013; ter Kuile, Melles, Tuijnman-Raasveld, de Groot, & van Lankveld, 2015), is needed to confidently conclude that avoidance is an important maintaining factor of male sexual dysfunction.

Second, multiple aspects of the sample are important to note. For example, while all participants self-reported impairment in sexual function, no formal assessment of DSM-5 criteria for sexual dysfunction was performed. It is thus likely that a portion of the sample would not meet criteria for these disorders. Avoidance may function differently in those with diagnosable sexual dysfunction than for those with less severe sexual problems. As such, it will be important to replicate the current results using true clinical samples. Additionally, while Barlow’s model was originally intended to explain erectile dysfunction in particular, the current sample consisted of men with a variety of sexual impairments (e.g., low sexual desire) and not all participants reported significant problems with erectile function. While this characteristic of the sample was helpful in a number of ways (e.g., allowing for assessment of the link between avoidance and other aspects of sexual function, preventing a restricted range of scores on our measure of erectile function, etc.), it is important to note that results may differ in a sample consisting entirely of men meeting criteria for erectile dysfunction. Future research will ideally include samples that include a sufficient number of men with each of the various sexual dysfunction diagnoses to allow for explicit comparisons between groups.

The inclusion criteria of the study also resulted in the exclusion of men who may exhibit the most pronounced avoidance of sex: those not sexually active and/or not in relationships. While these criteria were utilized to maximize the validity of our scales (Yule, Davison, & Brotto, 2011), it will be important to replicate the findings in samples of men who meet full criteria for sexual dysfunction, and are not sexually active. Relatedly, it is likely that some amount of the sexual avoidance measured in the current study had little to do with impaired sexual function per se. Although the wording of multiple items in the scale of sexual avoidance specify avoidance *in response to impaired sexual function*, the fact remains that avoidance of sex can stem from other factors, including sexual aversion (Borg, de Jong, & Elgersma, 2014) or disgust (de Jong et al., 2013), independently of sexual function. The fact that these factors were not included in analyses means we cannot definitively say what proportion of the avoidance reported is best conceptualized as resulting from sexual dysfunction vs. a symptom of other personal or interpersonal issues. Future research that rules out these factors via targeted

recruitment or assessment would be helpful in pinpointing the particular avoidance suggested by Barlow's model. Additionally, assessment of relational partners would be helpful in corroborating reports of avoidance, as well as investigating partner effects on likelihood of avoidance (e.g., Gewirtz-Meydan & Finzi-Dottan, 2018).

Despite these limitations, the current study is one of the first to systematically study sexual avoidance and its relation to other aspects of men's sexual experiences. Consistent with Barlow's model, impairment in sexual function does seem to be associated with sexual avoidance, and sexual avoidance is associated with higher levels of distress regarding sex. However, the strength of association between sexual function and avoidance was moderate, possibly because of important individual differences in the frequency of sexual avoidance. These results suggest that sexual problems may manifest in a variety of ways, which highlights the importance of access to diverse treatment options and individualized treatment planning.

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