



## Bored stiff: The relationship between meaninglessness, sexual sensation seeking, and promiscuous attitudes via boredom susceptibility



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### ABSTRACT

We investigated the relationships between boredom susceptibility, perceived meaninglessness, and attitudes to sex among heterosexual and bisexual men. We propose that meaninglessness is associated with men's increased endorsement of sensational and uncommitted sex via boredom susceptibility. In Study 1, we found a significant indirect relationship consistent with our hypothesis. In Study 2, we replicated this finding in a larger sample. Further, we showed that using sex as a coping mechanism to deal with unpleasant affective states explained the relationship between boredom susceptibility and our sex composite. Specifically, meaninglessness in life was associated with increased boredom susceptibility. In turn, boredom susceptibility was associated with the use of sex as a coping mechanism, which ultimately was associated with increased endorsement of sexual sensation seeking and promiscuous attitudes. We discuss these findings in light of research on sexuality, boredom, and meaninglessness.

Different frameworks outline how people are pre-disposed towards particular sexual strategies and attitudes (Buss, 1989; Buss et al., 1990; Buss & Schmitt, 1993; Goldenberg, Cox, Pyszczynski, Greenberg, & Solomon, 2002). Across these frameworks, there are reports of gender differences in sexual desires and interest in sex (Bártová, Štěrbová, Correa Varella, & Varella Valentova, 2020; Vance, Shackelford, Weekes-Shackelford, & Abed, 2020). In large-scale and cross-cultural samples (Li, Valentine, & Patel, 2011), men, compared to women, express more emphasis on the *physical* aspects of sex, sexual pleasure, show greater willingness to engage in *short-term* sexual relationships (Shackelford, Schmitt, & Buss, 2005), and have a larger number of sexual partners (Schmitt, Shackelford, & Buss, 2001). Women generally report a greater value on giving and receiving affection (Hill & Preston, 1996), express lower motivations for sex (Davis, Shaver, & Vernon, 2004), and report more interest in investing in longer-term relationships (Buss & Schmitt, 1993). Indeed, many approaches to sexuality (Buss, 1989; Li & Kenrick, 2006) posit that among men, intercourse is typically and more strongly guided by desire and the pursuit of pleasure than among women.

### 1. Existential concerns, sexual attitudes, and behaviour

Existential insecurities about the meaning of life can also impact on people's sexual attitudes and behaviours (Freud, 1961; Goldenberg,

2005). Some researchers suggested that a range of psychological responses to existential threats are expressions of a singular impulse to address a lack of meaning in life (Heine, Proulx, & Vohs, 2006). Frankl (1978) argued that the conditions of modern society can leave people feeling meaningless. In response, people have basic urges to seek pleasure in activities such as sex to defend against meaninglessness.

Our research is informed by the existential escape hypothesis (Wisman, 2006). According to this hypothesis, sex can be used as a defence in response to meaning-threats. When people are confronted with their own meaningless situation (Skowronski & Sedikides, 2017), perceived discrepancies between one's current self (i.e., meaningless) and ideal self (i.e., meaningful) are noted (Phillips & Silvia, 2005; Silvia & Duval, 2001; Taubman Ben-Ari & Noy, 2010). These discrepancies encourage people to escape from the perceived meaninglessness of existential threats. An effective means to achieve this goal is by yielding to hedonic impulses (Moynihan et al., 2015; Moynihan, Igou, & Van Tilburg, 2017; Moynihan, Igou, & Van Tilburg, 2020; Wisman, Heflick, & Goldenberg, 2015), including sex (Taubman Ben-Ari, 2004; Wisman, 2006). Therefore, we reason that heterosexual and bisexual men may seek to escape the perceived meaninglessness carried by boredom by increasing their interest in hedonic forms of sex because of its propensity for distraction and pleasure (Chaney & Bialock, 2006; Chaney & Chang, 2005; Gana, Trouillet, Martin, & Toffart, 2001; Reid, Garos, & Carpenter, 2011).

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Previous research using terror management theory (Greenberg, Pyszczynski, & Solomon, 1997), a perspective that investigates the impact of humans' ability to ponder their own mortality (i.e., an existential threat) on attitudes and behaviours, argues that people experience uneasiness about the physical aspects of sex when death is salient. Sex highlights the physical aspects of one's existence and inevitable mortality (Landau et al., 2006). Goldenberg, Pyszczynski, McCoy, Greenberg, and Solomon (1999) found that mortality salience led participants to contemplate the physically appealing aspects of sex to a lesser extent, while maintaining an interest in the romantic aspects of sex. These actions are understood as attempts to obscure the links between sex, corporeality, and death (Goldenberg, McCoy, Pyszczynski, Greenberg, & Solomon, 2000; Goldenberg et al., 2001; Goldenberg et al., 2002; Goldenberg et al., 2006). Similarly, Mikulincer and Florian (2000) showed that mortality salience led to a higher desire for intimacy in romantic relationships among people with secure attachment styles. Moreover, death reminders led to higher perceptions of commitment in romantic relationships (Florian, Mikulincer, & Hirschberger, 2002).

Like mortality salience, boredom is also an existential threat, characterised by a sense of meaninglessness (Van Tilburg & Igou, 2017). Indeed, Frankl (1978) argued that "the existential vacuum manifests itself mainly in a state of boredom" (p. 129). Similarly, Maddi (1970) argued that boredom arises from a psychopathology of meaning, that is, a continuous sense of meaninglessness. More recently, researchers suggest that the loss or failure of developing meaningful life goals is a critical factor in the development of boredom (Van Tilburg, Igou, Maher, Moynihan, & Martin, 2018). Accordingly, our current research focuses on boredom as a carrier of meaninglessness (Van Tilburg & Igou, 2012, 2017).

### 1.1. Boredom

A central feature of boredom is a lack of perceived meaning, manifesting as the perception that one lacks purposeful activity (Fahlman, Mercer, Gaskovski, Eastwood, & Eastwood, 2009; Van Tilburg & Igou, 2012). Boredom is an emotional state with a set of cognitions, feelings, and motivations distinct from other negative emotions (Goldberg, Eastwood, LaGuardia, & Danckert, 2011; Van Tilburg & Igou, 2017). Bored people experience restlessness and are disinterested in their current activities. As compensation, bored people may engage in stimulating, impulsive, or risky activities (Eastwood, Frischen, Fenske, & Smilek, 2012; Elpidorou, 2018; Kiliç, Van Tilburg, & Igou, 2019; Merrifield & Danckert, 2014; Van Tilburg & Igou, 2019).

By registering a lack of meaning, boredom specifically triggers the pursuit of activities that addresses this sense of meaninglessness (Van Tilburg & Igou, 2012, 2017). Recent research shows that engaging in stimulating, hedonic activities can also be enacted as an attempt to escape from the meaninglessness associated with boredom (Moynihan et al., 2017). Several studies indicate that meaning threats in general promote exciting, stimulating behaviours to escape from meaninglessness (Baumeister, DeWall, Ciarocco, & Twenge, 2005). The sensations involved in these hedonic acts may help to distract people from the meaninglessness signalled by these threats (Hirschberger & Ein-Dor, 2005; Moynihan et al., 2015; Wisman et al., 2015). Since boredom is also a carrier of meaninglessness (Van Tilburg & Igou, 2017), we predict that boredom and meaninglessness may also relate to hedonic, exciting forms of sex, consistent with previous literature and the tenets of the existential escape hypothesis (Wisman, 2006).

### 1.2. Using sex to cope with boredom

Fromm (1973) reasoned that consumption, including sexual activities, is one way of dealing with boredom as it reduces the salience of that unpleasant experience. Concurrently, research indicates that casual sex may be used as a stimulating and distracting activity in response to

boredom (Miller et al., 2014). Sex enables people to dissociate from uncomfortable and unpleasant emotions (Chaney & Chang, 2005; Reid, Harper, & Anderson, 2009; Taubman Ben-Ari, 2004); sexual arousal is capable of creating intense focus on pleasure, sexual excitement, and the release of tension (Kor et al., 2015; Reid, Carpenter, Spackman, & Willes, 2008). Boredom has been associated with excessive engagement in hypersexual activities and sexual compulsivity among men in particular (Chaney & Bialock, 2006; Klein, Jurin, Briken, & Štulhofer, 2015). Men also report using sexual activities for distraction from unpleasant affective states, including from boredom (Gana et al., 2001), to a greater extent than women (Cooper, Morahan-Martin, Mathy, & Maheu, 2002). Accordingly, interest in hedonic forms of sex (e.g., sensation-seeking) may be one accessible solution to cope with boredom (Kass & Vodanovich, 1990), particularly among men. As sexual sensation seeking and promiscuous attitudes are significantly related to boredom (Gaither & Sellbom, 2003; Hoyle, Fejfar, & Miller, 2000; Simpson & Gangestad, 1991), we focus on men's interest in these forms of sex in our research.

Consistent with the self-regulatory goals prompted by boredom (Mikulas & Vodanovich, 1993; Van Tilburg & Igou, 2012, 2017, 2019), we propose that boredom increases men's interest in hedonic forms sex, at least in part, and that this process is initiated by meaninglessness. Our hypothesis is based on earlier research regarding the relationship between meaninglessness and indulging in hedonic behaviours (including sex; Landau et al., 2006), the link between meaninglessness and boredom (Van Tilburg & Igou, 2017, 2019), and the existential escape hypothesis (Wisman, 2006). From our literature review, the crucial assumed process of boredom and hedonic forms of sex is more consistent with research on men's interest in sex than women's (Bleske-Rechek & Buss, 2006; Schmitt et al., 2001). An unrestricted socio-sexual attitude (i.e., more open to casual sexual relations), more prevalent in men, might in part be an evolved feature of biological sex (Schmitt, 2006). People's willingness to engage in uncommitted sex is systematically higher in men than in women (Bártová et al., 2020). Women's sexual attitudes and behaviours might be more multifaceted (Buss, 1989; Buss & Schmitt, 1993; Li & Kenrick, 2006; Shackelford et al., 2005) and women enact more complex responses to existential threats (Wisman & Goldenberg, 2005). We thus tested the predicted relationships between meaninglessness, boredom, and interest in hedonic sex on heterosexual and bisexual men in this research.

### 1.3. The present research

Although previous research identified that boredom can promote men's interest in sex as a coping mechanism for pleasure, arousal, or to escape from uncomfortable emotions (Chaney & Chang, 2005; Cooper et al., 2002; Reid, Garos, & Carpenter, 2011; Reid, Li, Gilliland, Stein, & Fong, 2011), the relationship between boredom and men's interest in hedonic forms of sex has not yet been investigated in the context of meaninglessness. Earlier research on existential concerns, sexual attitudes, and behaviour dealt primarily with mortality salience (Goldenberg et al., 1999; Goldenberg et al., 2002; Landau et al., 2006), a perspective according to which people downplay desire in the physical nature of sex. Instead, our hypothesis makes the proposition that boredom increases heterosexual and bisexual men's interest in sensational and uncommitted forms of sex as a means to escape from the meaninglessness that boredom conveys. We propose an indirect relationship between meaninglessness, boredom, and sex. We limit our sample to men in this initial research since men express more emphasis on the physical aspects of sex, sexual pleasure, and show greater willingness to engage in short-term sexual relationships than women (Shackelford et al., 2005). Further, men report using sex for distraction from unpleasant affective states, including from boredom (Gana et al., 2001), as well as hypersexual behaviours and sexual compulsivity to a greater extent than women (Chaney & Bialock, 2006; Cooper et al., 2002; Klein et al., 2015). Since some variables in our research also did

not relate to high risk sexual behaviour in gay men previously (McCoul & Haslam, 2001), we decided to limit our sample to heterosexual and bisexual men.

We predict that a sense of meaninglessness is associated with men's interest in sensational and uncommitted forms of sex via boredom susceptibility. We conducted two studies to test our hypothesis. In Study 1, we examined the relationships between meaninglessness, boredom susceptibility, and a composite variable consisting of sexual sensation-seeking and having an open, unrestricted socio-sexual orientation (i.e., more favourable attitudes to casual, uncommitted sexual relations). We predicted that there is an indirect relationship between meaninglessness and these attitudes to sex via increased boredom susceptibility. In Study 2, we aimed to replicate our findings and investigated if using sex as a coping mechanism could further explain the observed boredom-sex relationship. In Study 2, we also considered the role that the Big-5 personality traits may play regarding the meaninglessness-boredom-sex association to explore whether the relationships that we propose withheld controlling for these factors.

## 2. Study 1

In Study 1, we investigated the relationships between perceived meaninglessness, boredom susceptibility, and a composite of sexual sensation-seeking and participants' favourability to an unrestricted socio-sexual orientation (Simpson & Gangestad, 1991). We investigated these relationships in a sample of heterosexual and bisexual men. We predicted positive relationships between these constructs and that the relationships between meaninglessness and attitudes to these types of sex would be statistically 'transmitted' via boredom susceptibility.

### 2.1. Method

#### 2.1.1. Participants and design

Three hundred and two men were recruited via *Prolific Academic*. *Prolific Academic* is a data collection website, founded by academic researchers, where participants can complete surveys for payment. Heterosexual and bisexual men in the Republic of Ireland and the United Kingdom were recruited ( $M_{age} = 34.65$ ,  $SD = 11.58$ ,  $age\ range = 18-72$ ; 285 = heterosexual, 17 = bisexual). Seventy-seven participants were single, 98 were married, and 127 were in a committed, non-married relationship. For all indirect relationships reported in this paper, post-hoc power analyses were conducted using a tool developed by Schoemann, Boulton, and Short (2017) (10,000 replications with 20,000 Monte-Carlo draws, assuming a type-I error of  $\alpha = 0.05$ , two-tailed). Participants were remunerated with €0.48.

#### 2.1.2. Materials and procedure

Participants gave their informed consent and reported demographics. Next, measures of meaninglessness, boredom susceptibility, and sexual sensation-seeking with socio-sexual orientation, presented as one scale, were distributed in random order. Items for the two sex scales were not interspersed. Perceived meaninglessness was assessed using Steger, Frazier, Oishi, and Kaler's (2006) presence of meaning

subscale (reverse-scored) from the meaning in life questionnaire, consisting of five items ("My life has no clear sense of purpose"; 1 = *absolutely untrue*, 7 = *absolutely true*;  $M = 3.42$ ,  $SD = 1.45$ ;  $\alpha = 0.93$ ). Boredom susceptibility was assessed using the boredom susceptibility scale, consisting of ten items in a forced-choice format ( $Min = 0$ ,  $Max = 8$ ;  $M = 2.64$ ,  $SD = 1.86$ ;  $\alpha = 0.55$ ; Zuckerman, Eysenck, & Eysenck, 1978). Participants were asked to choose between two options that most described the way they feel ("I get bored seeing the same old faces" vs. "I like the comfortable familiarity of everyday friends"). Typical internal reliability of the boredom susceptibility scale ranges from  $\alpha = 0.56-0.65$  and has a three-week test-retest reliability of  $\alpha = 0.70$  (Zuckerman, 1979).

We presented two sex scales as an outcome measure for our analysis ( $M = 2.43$ ,  $SD = 0.58$ ,  $\alpha = 0.86$ ). As part of this composite, Gaither and Sellbom's (2003) sexual sensation-seeking scale was presented, consisting of eleven items ("I like wild 'uninhibited' sexual encounters"; 1 = *not at all like me*, 4 = *very much like me*;  $M = 2.45$ ,  $SD = 0.57$ ;  $\alpha = 0.83$ ). Scores on this scale are positively correlated with engaging in risky and sexually permissive behaviours and men tend to score higher on this scale than women (Gaither & Sellbom, 2003). Sexual sensation seeking is associated with having a greater number of sexual partners among heterosexual men (McCoul & Haslam, 2001). Participants also completed the three attitudinal items from Simpson and Gangestad's (1991) socio-sexual orientation inventory. These items assessed participants' attitudes to engaging in casual, uncommitted sexual relations ("I can imagine myself being comfortable and enjoying casual sex with different partners"; 1 = *not at all like me*, 4 = *very much like me*;  $M = 2.36$ ,  $SD = 0.91$ ;  $\alpha = 0.81$ ). People with an unrestricted socio-sexual orientation, as measured by these items, tend to have more than one partner at a time and be involved in relationships characterised by less investment and commitment (Simpson & Gangestad, 1991). There was a significant, positive correlation between sexual sensation seeking and an unrestricted socio-sexual orientation,  $r(300) = 0.54$ ,  $p < 0.001$ , consistent with previous literature (Gaither & Sellbom, 2003).

Three items served as attention checks throughout the procedure; one was embedded in each scale. Afterwards, participants were debriefed, thanked, and rewarded.

### 2.2. Results and discussion

#### 2.2.1. Zero-order correlations

As expected, meaninglessness correlated positively and significantly with boredom susceptibility,  $r(299) = 0.13$ ,  $p = 0.02$ , consistent with previous research (Van Tilburg & Igou, 2012, 2017, 2019). Boredom susceptibility also correlated positively and significantly with the sex composite,  $r(299) = 0.32$ ,  $p < 0.001$ . These findings were consistent with our predictions and constituted small and medium effect sizes respectively (Cohen, 1988). The correlation between meaninglessness and the sex scales' composite was marginally significant,  $r(300) = 0.10$ ,  $p = 0.08$  (Table 1).

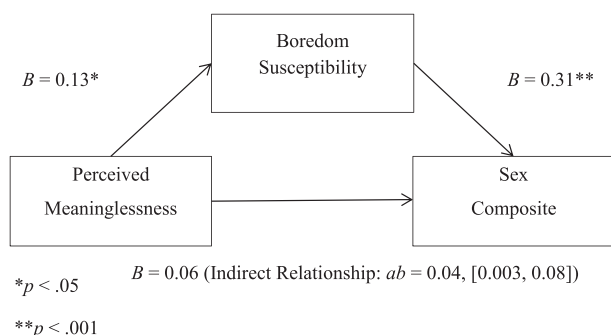
**Table 1**

Zero-order correlations between perceived meaninglessness, boredom susceptibility, the sex composite, sexual sensation-seeking, and socio-sexual orientation (Study 1).

	Perceived meaninglessness	Boredom susceptibility	Sex composite	Socio-sexual orientation	Sexual sensation-seeking
Perceived meaninglessness	–	0.13*	0.10	0.20**	0.04
Boredom susceptibility	–	–	0.32**	0.25**	0.30**
Sex composite	–	–	–	–	–
Socio-sexual orientation	–	–	–	–	0.54**
Sexual sensation-seeking	–	–	–	–	–

\*  $p \leq 0.05$ .

\*\*  $p \leq 0.001$ .



**Fig. 1.** An outline of the relationship between perceived meaningfulness and the sex composite significantly mediated by boredom susceptibility.

### 2.2.2. Indirect relationship

Next, we examined if there was a significant indirect relationship between perceived meaningfulness and the sex composite via boredom susceptibility. We conducted a mediation analysis using Hayes's (2018, Model 4) PROCESS macro. Scores for each construct were standardised. Meaninglessness was entered as the predictor variable, boredom susceptibility as the mediator, and the sex composite as the outcome variable. The indirect relationship reported in Study 1 was estimated using 10,000 bias-corrected bootstraps. As expected, we found a significant indirect relationship between meaningfulness and the sex composite via boredom susceptibility,  $ab = 0.04$ ,  $SE = 0.02$ , 95% CI [0.003, 0.08],  $1 - \beta = 0.62$ . The direct association was not significant in the model,  $B = 0.06$ ,  $SE = 0.06$ ,  $p = 0.273$  (Fig. 1). Analyses using the two sex scales as separate outcome variables can be seen in our Supplementary Materials.

## 3. Study 2

Study 1's results suggest that meaningfulness is associated with more sexual sensation seeking and unrestricted socio-sexual attitudes among heterosexual and bisexual men via boredom susceptibility. In Study 2, we extended on these findings by assessing if using sex as a coping mechanism plays a part in this relationship. Previous research outlined that sexual behaviours are often used to cope with unpleasant affective states (Reid, Garos, & Carpenter, 2011; Reid, Li, et al., 2011). In this regard, sex may be used as a stimulating and distracting coping strategy in response to boredom (Gana et al., 2001; Miller et al., 2014), such that coping using sex would be associated with increased favourability towards sexual sensation seeking and promiscuous sexual attitudes (Reid et al., 2008; Reid, Garos, & Carpenter, 2011).

In Study 2, we also explored if the indirect relationships we proposed maintained significance controlling for the Big-5 personality traits. Other researchers (Hoyle et al., 2000; Miller et al., 2004; Schmitt, 2006) noted that these personality traits play important roles in driving sexual behaviours. In Study 2, participants completed measures of meaningfulness, boredom susceptibility, using sex as a coping mechanism, sexual sensation-seeking, attitudes towards an unrestricted socio-sexual orientation, and the Big-5 personality traits. Again, our sample consisted of heterosexual and bisexual men. We expected to replicate the indirect relationship from Study 1. Furthermore, we predicted that the relationships between meaningfulness and attitudes to sex would be statistically transmitted via boredom susceptibility and using sex as a coping mechanism. Finally, we explored whether the indirect relationships we predicted would be maintained controlling for the Big-5 traits.

## 3.1. Method

### 3.1.1. Participants and design

Five hundred and eighty-eight men were recruited via Prolific

Academic. Heterosexual and bisexual men in the Republic of Ireland and the United Kingdom were recruited ( $M_{age} = 36.08$ ,  $SD = 13.22$ ,  $age\ range = 18-76$ ; 546 = heterosexual, 42 = bisexual). Recruitment in Study 2 was programmed such that participants in Study 1 could not participate. Two hundred and seven participants were single, 195 were in a committed, non-married relationship, and 183 participants were married. Three participants selected "Other" when reporting their relationship status. Participants were remunerated with €0.47.

### 3.1.2. Materials and procedure

Participants gave their informed consent and reported demographics. Next, measures of meaningfulness, boredom susceptibility, use of sex as a coping mechanism, sexual sensation-seeking and socio-sexual orientation (as one scale) were presented in a random order. Items for the sexual sensation seeking and socio-sexual orientation scales were not interspersed.

Perceived meaningfulness was measured using Steger et al.'s (2006) presence of meaning subscale (reverse-scored) from the meaning in life questionnaire ("I understand my life's meaning — reverse-scored"; 1 = *absolutely untrue*, 7 = *absolutely true*;  $M = 3.69$ ,  $SD = 1.46$ ,  $\alpha = 0.91$ ). Boredom susceptibility was measured using the boredom susceptibility scale ("I have no patience with dull or boring persons" vs. "I find something interesting in almost every person I talk with";  $Min = 0$ ,  $Max = 9$ ;  $M = 2.79$ ,  $SD = 1.91$ ;  $\alpha = 0.57$ , Zuckerman, 1979; Zuckerman et al., 1978).

The use of sex as a coping mechanism was measured by the coping subscale of the hypersexual behaviour inventory (Reid, Garos, & Carpenter, 2011). This scale consists of 7 items and was developed using mostly male participants ("I use sex to forget about the worries of daily life"; 1 = *never*, 5 = *very often*;  $M = 2.47$ ,  $SD = 0.88$ ;  $\alpha = 0.90$ ). The subscale has been found to correlate positively and significantly with boredom, emotional dysregulation, and facets of the Big-5 (self-consciousness, impulsiveness; Reid, Garos, & Carpenter, 2011).

We combined the sexual sensation seeking scale (Gaither & Sellbom, 2003) and the attitudinal items from the socio-sexual inventory (Simpson & Gangestad, 1991) as a composite outcome measure ( $M = 2.42$ ,  $SD = 0.58$ ;  $\alpha = 0.82$ ). There was a significant, positive correlation between sexual sensation-seeking and an unrestricted socio-sexual orientation in Study 2,  $r(584) = 0.67$ ,  $p < 0.001$ . The sexual sensation-seeking scale (Gaither & Sellbom, 2003) consisted of eleven items ("I like to have new and exciting sexual experiences and encounters"; 1 = *not at all like me*, 4 = *very much like me*;  $M = 2.40$ ,  $SD = 0.56$ ;  $\alpha = 0.76$ ) and two attitudinal items from Simpson and Gangestad's (1991) socio-sexual orientation inventory were also presented ("Sex without love is OK"; 1 = *not at all like me*, 4 = *very much like me*;  $M = 2.52$ ,  $SD = 0.93$ ;  $\alpha = 0.71$ ).

Afterwards, participants completed a 44-item measure of the Big-5 (John & Srivastava, 1999). This shortened measure was designed to allow for efficient assessment of the five dimensions when measurement of the individual facets are not of primary concern (John, Donahue, & Kentle, 1991). The measure has served as a reliable, efficient, and factorially valid instrument across cultures in previous research (Benet-Martinez & John, 1998). Participants answered the items on a scale from 1 = *Disagree Strongly* to 5 = *Agree Strongly*: extraversion ("I see myself as someone who is outgoing, sociable";  $M = 2.81$ ,  $SD = 0.87$ ,  $\alpha = 0.87$ ), agreeableness ("... as someone who is considerate and kind to almost everyone";  $M = 3.69$ ,  $SD = 0.65$ ;  $\alpha = 0.77$ ), conscientiousness ("... as someone who does things efficiently";  $M = 3.60$ ,  $SD = 0.70$ ;  $\alpha = 0.82$ ), neuroticism ("... as someone who worries a lot";  $M = 2.97$ ,  $SD = 0.89$ ;  $\alpha = 0.86$ ), openness to experience ("... as someone who is original, comes up with new ideas";  $M = 3.55$ ,  $SD = 0.62$ ;  $\alpha = 0.77$ ). Two items served as attention checks throughout the procedure, embedded in the meaningfulness and sex as coping scales. Afterwards, participants were debriefed, thanked, and rewarded.

**Table 2**  
Zero-order correlations (Study 2).

	Perceived meaninglessness	Boredom susceptibility	Sex as coping mechanism	Sex composite	Socio-sexual orientation	Sexual sensation- seeking	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness to experience
Perceived meaninglessness	-										
Boredom susceptibility	0.14**	-									
Sex as coping mechanism	0.13**	0.12*	-								
Sex composite	0.06	0.24**	0.51**	-							
Socio-sexual orientation	0.16**	0.20**	0.35**	-	-						
Sexual sensation-seeking	0.02	0.23**	0.52**	-	-	-					
Extraversion	-0.34**	0.14**	-0.03	0.17**	0.07	0.19**	-				
Agreeableness	-0.25**	-0.33**	-0.08	-0.19**	-0.19**	-0.18**	0.11*	-			
Conscientiousness	-0.31**	-0.19**	-0.20**	-0.10**	-0.07	-0.10**	0.21**	0.28**	-		
Neuroticism	0.45**	0.05	0.29**	0.09	0.07	0.09	-0.35**	-0.31**	-0.36**	-	
	-0.11*	0.10*	0.07	0.09	0.09	0.08	0.29**	0.12*	0.11*	-0.04	-

\*  $p \leq 0.05$ .  
\*\*  $p \leq 0.001$ .

3.2. Results and discussion

3.2.1. Zero-order correlations

Boredom susceptibility correlated positively and significantly with meaninglessness,  $r(583) = 0.14, p < 0.001$ , consistent with previous research (Van Tilburg & Igou, 2012, 2017) and Study 1. Boredom susceptibility correlated positively and significantly with using sex as a coping mechanism,  $r(583) = 0.12, p = 0.004$ , and the sex composite,  $r(583) = 0.24, p < 0.001$ .

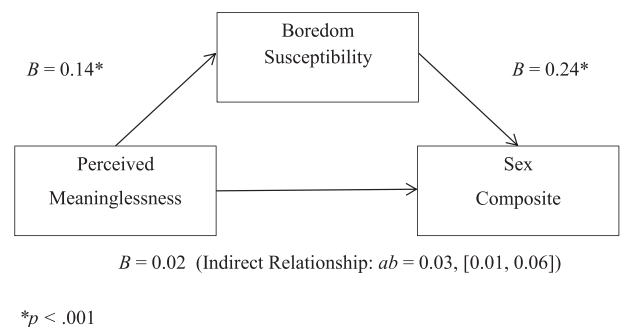
Meaninglessness also correlated positively and significantly with using sex as a coping mechanism,  $r(583) = 0.13, p = 0.001$ . The correlation between meaninglessness and the sex composite was not significant, similar to Study 1,  $r(584) = 0.06, p = 0.16$ . Using sex as a coping mechanism correlated positively and significantly with the sex composite,  $r(583) = 0.51, p < 0.001$  (Table 2). The effect sizes were small and large respectively (Cohen, 1988).

3.2.2. Indirect relationships

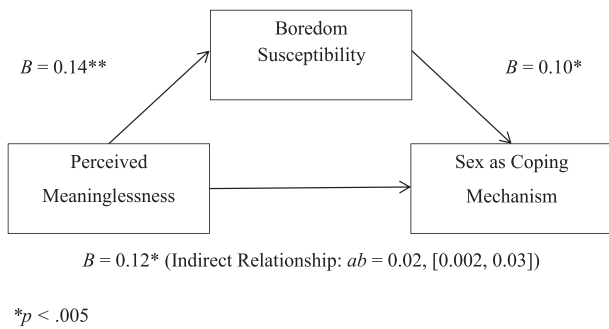
We aimed to replicate the indirect association we found in Study 1 between meaninglessness and the sex composite via boredom susceptibility. We conducted a mediation analysis using Hayes's (2018, Model 4) PROCESS macro. Scores for each construct were standardised. Meaninglessness was entered as the predictor variable, boredom susceptibility as the mediator, and the sex composite as the outcome variable. All models reported for Study 2 were estimated using 10,000 bias-corrected bootstraps.

We found a significant indirect association between meaninglessness and the sex scores' composite via boredom susceptibility,  $ab = 0.03, SE = 0.01, 95\% CI [0.01, 0.06], 1 - \beta = 0.94$ . The direct relationship between meaninglessness and the sex score was not significant,  $B = 0.02, SE = 0.04, p = 0.55$  (Fig. 2). Furthermore, the indirect relationship maintained significance controlling for the Big-5 factors,  $ab = 0.02, SE = 0.01, 95\% CI [0.01, 0.04], 1 - \beta = 0.80$ . These findings were in accordance with our hypothesis, replicated Study 1's findings in a higher-powered study, and also showed that our proposed indirect relationship maintained significance controlling for the Big-5 factors.

Next, we incorporated using sex as a coping mechanism as an additional mediating variable. Scores for this construct were also standardised. Initially, we conducted a simple mediation analysis to confirm if meaninglessness was associated with increased use of sex as a coping mechanism via boredom susceptibility (Hayes, 2018, Model 4). We found a significant indirect relationship between meaninglessness and using sex as a coping mechanism via boredom susceptibility,  $ab = 0.02, SE = 0.01, 95\% CI [0.002, 0.03], 1 - \beta = 0.62$ . The direct relationship was  $B = 0.12, SE = 0.04, p = 0.004$  (Fig. 3). That is, perceived meaninglessness was associated with men's increased use of sex as a coping mechanism via increased boredom susceptibility. When controlling for the Big-5 factors, the indirect relationship became marginally significant,  $ab = 0.01, SE = 0.01, 95\% CI [-0.0002, 0.03]$ ,



**Fig. 2.** An outline of the relationship between perceived meaninglessness and the sex scores' composite significantly mediated by boredom susceptibility.



**Fig. 3.** An outline of the relationship between perceived meaninglessness and using sex as a coping mechanism significantly mediated by boredom susceptibility.

$1 - \beta = 0.40.$

**3.2.3. Serial mediation analysis**

Next, we investigated if meaninglessness was associated with the sex composite via boredom susceptibility and the use of sex as a coping mechanism in a serial mediation model (Hayes, 2018; Model 6). We found a significant serial indirect relationship between meaninglessness and increased scores on the sex composite via boredom susceptibility and use of sex as a coping mechanism,  $a_1db_2 = 0.01$ ,  $SE = 0.004$ , 95% CI [0.001, 0.02],  $1 - \beta = 0.63$ , Direct Relationship:  $B = -0.03$ ,  $SE = 0.04$ ,  $p = 0.34$  (Fig. 4). These findings were consistent with our hypothesis. The serial indirect relationship became marginally significant when controlling for the Big-5 factors,  $a_1db_2 = 0.01$ ,  $SE = 0.004$ , 95% CI [-0.0003, 0.01],  $1 - \beta = 0.39$ . Analyses using the two sex scales as separate outcome variables can be seen in our Supplementary Materials. We report exploratory analyses between the main constructs with the Big-5 factors there also.

**4. General discussion**

In Study 1, we found positive and significant relationships between perceived meaninglessness, boredom susceptibility, and a composite variable of sexual sensation seeking and having an open socio-sexual orientation. Indeed, we found a significant indirect association between meaninglessness and endorsing this sex composite via boredom susceptibility. Meaninglessness was associated with increased sexual

sensation seeking and more favourable attitudes to casual, uncommitted types of sex among heterosexual and bisexual men via increased boredom susceptibility.

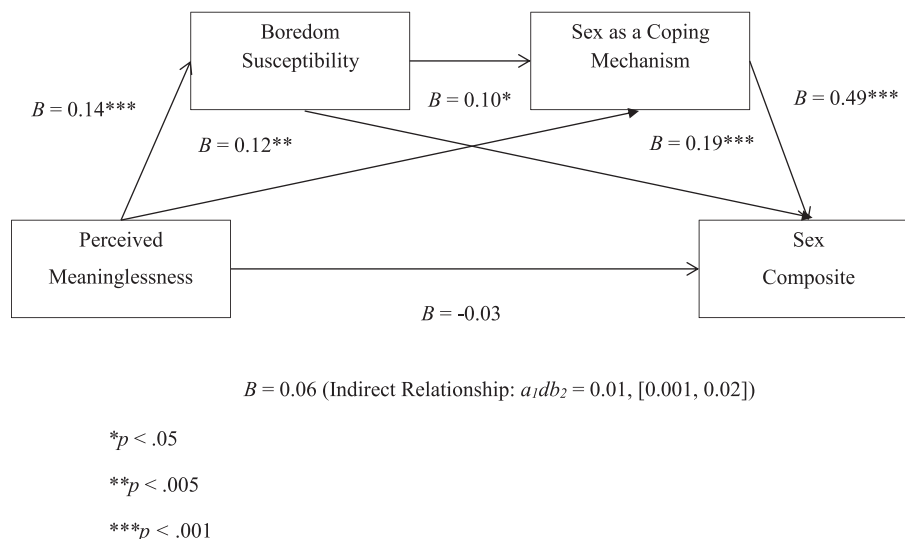
In Study 2, we replicated these findings in a higher powered sample. Further, this indirect association maintained significance controlling for the Big-5 factors. Also, we incorporated the use of sex as a coping mechanism as an additional mediator. We found a significant serial indirect association, consistent with our predictions and chosen theoretical framework (Wisman, 2006). Meaninglessness was associated with increased sexual sensation seeking and favourable attitudes to casual sex via increased boredom susceptibility and the use of sex as a coping strategy.

These data are consistent with our model that boredom is associated with an increase in hedonic forms sex as a coping mechanism among heterosexual and bisexual men. For those heterosexual and bisexual men high in boredom susceptibility, rooted in feelings of meaninglessness, they are also likely to report using sex as a coping mechanism and have more favourable attitudes to sexual sensation seeking and promiscuous sexual attitudes. These findings support our overall reasoning that boredom susceptibility is associated with these attitudes to hedonic forms of sex as a form of coping, most likely representing withdrawals from the meaninglessness carried by boredom and consistent with the existential escape hypothesis (Wisman, 2006).

**4.1. Emerging existential literature on sex**

Our research extends on existential psychological approaches to sex by focusing on boredom as a key emotion that links feelings of meaninglessness to sex. Our research replicates and extends previous research that outlined a relationship between boredom and increased interest in hedonic sex (Chaney & Bialock, 2006; Chaney & Chang, 2005; Gana et al., 2001; Miller et al., 2014). We made the novel proposition that boredom is associated with increased interest in certain types of sex as a means to address meaninglessness, at least among heterosexual and bisexual men. In this regard, we integrate meaninglessness perceptions into this model.

Our findings suggest that sex may be used as a means to address the perceived meaninglessness carried by boredom. This insight casts boredom as an emotion that stimulates certain types of sex (hedonic, sensational, casual, uncommitted) with the potential to reduce awareness of the existential conflict. This is in contrast to earlier mortality salience research (Goldenberg et al., 2008; Goldenberg et al., 1999; Landau et al., 2006), showing that thinking about one's eventual death



**Fig. 4.** An outline of the relationship between perceived meaninglessness and the sex composite, significantly mediated by boredom susceptibility and using sex as a coping mechanism.

leads to *decreased* interest in the physical aspects of sex. Previous research using our chosen theoretical framework (Wisman, 2006) outlined that impulsiveness (Moynihan et al., 2017), food (Moynihan et al., 2015) and alcohol consumption (Wisman et al., 2015) are used to address meaning threats. Now, we provide empirical support that sexual activities are another way of dealing with boredom. It appears to be enacted to try and reduce the salience of the unpleasant boredom experience. Our research, therefore, incorporates sex as a possible means of existential escape to cope with the meaninglessness associated with boredom.

#### 4.2. Limitations and future directions

##### 4.2.1. Participant sample

A limitation of our research is that we did not recruit gay men. Prior existential psychological research also did not include gay participants (Landau et al., 2006). Previous sexuality research also largely consisted of only small samples of gay people (Reid, Garos, & Carpenter, 2011). In previous research, there have been conflicting findings about the sexual behaviours of gay men. McCoul and Haslam (2001) found that among heterosexual men, sexual sensation seeking and impulsivity were associated with increased frequency of unprotected sex and an increased number of sexual partners. Yet, neither of these personality variables predicted high risk sexual behaviour in gay men. Other research, however, highlights that gay men report more non-committal sexual behaviour than heterosexual or bisexual men considering their wider pool of unrestricted potential partners (Schmitt, 2006). According to parental investment theory (Trivers, 1972), women are assumed to have evolved to be more selective when choosing a mate given their time and investment in reproduction compared to men. As heterosexual men would have more discerning potential partners that limits their ability to have short-term relationships, gay men would likely have more access to potential short-term partners. We were concerned that including gay men may inflate the effects sizes in our results or alternatively report sexual behaviours that are not largely related to variables such as sexual sensation-seeking (McCoul & Haslam, 2001). Nevertheless, we acknowledge that testing the relationships between meaninglessness, boredom, and sex on gay men is an important extension for future research.

Likewise, an interesting area for future research is women's sexual responses to meaninglessness and boredom. A limitation of this and previous sexuality research (Reid et al., 2008; Reid, Garos, & Carpenter, 2011; Reid, Li, et al., 2011) is that samples often consist of heterosexual males. Schmitt (2006) argues that an unrestricted socio-sexual attitude appears in part to be an evolved feature of biological sex and is reported less by women in cross-cultural research. Women generally express more stringent standards to selecting short-term sexual partners (Li & Kenrick, 2006; Vance et al., 2020). Lesbians also report restricted, committed sexual attitudes whereas bisexual women display higher levels of non-committal sexual attitudes (Schmitt, 2006). Some researchers speculate that generally women's use of sex as a defence against meaning threats may be more nuanced (Landau et al., 2006).

It is also possible that there is bias in recording women's sexual attitudes and behaviours due to societal gender norms and social desirability (Wiederman, 1999). Previous research highlighted that women show some consistent attitudes with men regarding sex in response to existential threats (Goldenberg et al., 1999; Goldenberg et al., 2000; Goldenberg et al., 2002; Paul & Shim, 2008). Thus, it would be interesting to assess if women similarly increase their interest in hedonic forms of sex to defend against meaning threats such as boredom as a means of existential escape.

##### 4.2.2. Effect sizes

In our research, the relationships between meaninglessness and boredom susceptibility with the sex composite and using sex as a coping mechanism constituted small and medium effect sizes. Perhaps other

constructs may be stronger motivators of using sex as a coping mechanism, sexual sensation seeking, and having an open socio-sexual orientation. Other affective states such as anxiety, depression (Reid et al., 2008; Reid, Bramen, Anderson, & Cohen, 2014; Reid, Carpenter, & Lloyd, 2009; Reid, Garos, & Carpenter, 2011; Reid, Li, et al., 2011), and shame (Reid, Harper, & Anderson, 2009) may also predict those sex indicators.

Psychodynamic theories argue that boredom is caused by an inability to consciously determine what is desired because the desire is threatening and is repressed (Fahlman, Mercer-Lynn, Flora, & Eastwood, 2011). As a result, the bored individual is unable to articulate what one desires. The bored individual feels deprived and frustrated as one is unaware of what one desires. As a result, existential escape may perhaps be motivated more strongly by feelings of shame or inadequacy. Therefore, other affective states, such as anxiety, depression, or shame, may be stronger predictors of sexual sensation seeking and promiscuity (Reid, Harper, & Anderson, 2009; Reid, Li, et al., 2011).

On this, Van Tilburg and Igou (2017) found that boredom was characterised as having the least negative affective valence compared to other emotions such as depression, guilt, shame, and frustration. Accordingly, other constructs with stronger affective valences might be stronger predictors of hedonic forms of sex as an escapist solution. Simultaneously, boredom significantly predicts increased hypersexual behaviours, controlling for anxiety, depression, and other relevant factors (stress; Reid, Garos, & Carpenter, 2011). Furthermore, the effect sizes between boredom and hypersexuality in previous research were comparable to those between anxiety and depression with hypersexual behaviours. Therefore, although other affective states may be stronger predictors of sexual sensation seeking, using sex as a coping mechanism, and promiscuity, it is likely that boredom also is a valid predictor, albeit a potentially weaker one.

##### 4.2.3. Age

Another important factor to consider regarding the effect sizes is age. In our research, there were substantial age ranges among the participants. Barelids, Dijkstra, Groothof, and Pastoor (2017) note that generally younger people tend to engage in short-term relationships whereas people in their thirties upwards may be in more established sexual relationships. In Study 1, we found significant negative correlations between age, meaninglessness, and boredom susceptibility. A negative correlation between age and an open sociosexual orientation with marginal significance was also found. In Study 2, there were significant, negative correlations between age and using sex as a coping mechanism and the sex composite.<sup>1</sup> Older participants may be less likely to report meaninglessness and boredom and subsequently do not engage in promiscuous or sensational sexual acts as a means of escape. Similar age effects have been found in earlier existential psychological research (Maxfield et al., 2007). As such, age is an important factor to consider in future boredom and sex research.

##### 4.2.4. Attachment

Another likely moderator of meaninglessness and boredom's relationship to sex is attachment. In previous research, secure attachment styles were found to buffer against existential threats. People with secure attachments develop a 'secure base', which acts as an inner resource in dealing with life's adversities. People who experience insecure

<sup>1</sup> In Study 1, we found significant negative correlations between age and meaninglessness ( $r(300) = -0.16, p = 0.01$ ), boredom susceptibility ( $r(299) = -0.11, p = 0.05$ ), and an open sociosexual orientation with marginal significance ( $r(300) = -0.10, p = 0.08$ ). In Study 2, there were significant, negative correlations between age and using sex as a coping mechanism ( $r(584) = -0.16, p < 0.001$ ) and the sex composite variable ( $r(584) = -0.12, p = 0.004$ ).

early attachments develop maladaptive working models, either avoidant or anxious-ambivalent, which impairs their ability to manage distress. Mikulincer and Florian (2000) found that people with secure attachments reacted to mortality salience with a higher desire for intimacy in romantic relationships but not among people with anxious or avoidant attachment styles (Taubman Ben-Ari, Findler, & Mikulincer, 2002). These findings imply that people with avoidant or anxious attachment styles may rely on other defences, perhaps including existential escape.

#### 4.2.5. Precarious masculinity

Another candidate moderator may be precarious masculinity. Precarious masculinity refers to beliefs that manhood is a precarious state requiring continual validation (Vandello, Bosson, Cohen, Burnaford, & Weaver, 2008). This concept is comparable to Adler's (1979) idea of 'masculine protest' to compensate for inferiority against shameful feelings or Freud's (1977) contention of how boys resolve the Oedipus complex. Among the arguments postulated for why manhood is seen as tenuous are that it is an evolved disposition from men's competitive acquisition of social status and resources to gain access to women (Buss & Schmitt, 1993). Men who successfully demonstrated their manhood stood a better chance of attracting potential mates. Vandello et al. (2008) argue that challenges to men's manhood will provoke men to demonstrate their manhood through action (in their sexual behaviours). As a result, precarious masculinity may moderate the relationship between boredom on men's attitudes to sex, if the latter is used as a form of existential escape. Alternatively, sexual sensation seeking and promiscuous attitudes may buttress precarious masculinity if used as a means of worldview defence (Heine et al., 2006).

#### 4.2.6. Self-esteem

Relating to precarious masculinity, Wisman et al. (2015) argue that people with low self-esteem should be especially prone to existential escape. Those with weaker, less coherent worldviews or who feel incompetent to adhere to the standards set by cultural norms may feel incapable of addressing meaninglessness by worldview defence (Hull & Young, 1983; Polivy, Heatherton, & Herman, 1988; Wisman et al., 2015). It seems likely, therefore, that bored heterosexual and bisexual men low in self-esteem may be particularly inclined to endorse hedonic and uncommitted sex for existential escape in response to meaninglessness.

#### 4.2.7. Self-awareness

Interestingly, our chosen theoretical framework (Wisman, 2006) also outlines that people try to reduce self-awareness to avoid challenges to perceived meaning. Self-awareness enhances perceptions of meaninglessness (Silvia, 2001; Skowronski & Sedikides, 2017; Taubman Ben-Ari & Noy, 2010) and is also related to boredom (Seib & Vodanovich, 1998). Minimising self-awareness to manage meaningless experiences has been identified previously as a motive for engaging in and maintaining exciting sexual activity (Chaney & Burns-Wortham, 2014; Chaney & Dew, 2003; Paul & Shim, 2008; Reid et al., 2008; Reid, Carpenter, Gilliland, & Karim, 2010; Reid, Harper, & Anderson, 2009). Integrating self-awareness more fully into our model deserves further investigation.

#### 4.2.8. Cross-sectional data

We collected cross-sectional data for our studies. More evidence is required to demonstrate casual relationships between the constructs. Experimental and longitudinal replications of these studies that examine (latent) cross-lagged mediation models will provide greater support for the indirect relationships reported. Indeed, previous longitudinal research demonstrated relationships between the constructs that compose our models (Fahlman et al., 2009; Miller et al., 2014; Reid, Garos, & Carpenter, 2011), suggesting a causal nature to these associations. Further, some indirect relationships we found were under-

powered and need to be replicated in higher-powered studies.

#### 4.2.9. Long-term effects

It is not yet known if hedonic behaviours such as sex are effective at mitigating meaninglessness long-term. Wisman et al. (2015) note that perceptions of meaninglessness may become conscious again after engaging in escape behaviours. Relating to our discussion on the effect sizes, other existential psychological researchers found that writing about hedonism compared to writing about one's ideology was less effective at mitigating anxiety (McGregor, Prentice, & Nash, 2012; McGregor, Prentice, & Nash, 2013). Engaging in hedonic behaviours such as sex to deal with meaning threats may be less effective than pursuing worldviews. Accordingly, future research should examine the long-term impact of engaging in sexual thoughts and behaviours as an escape from meaninglessness and boredom.

#### 4.3. Other personality factors

Future research could also investigate the relationships between other personality factors and boredom, meaninglessness, and sensation, uncommitted sexual behaviours. Previous research showed relationships between the Dark Triad traits (narcissism, sub-clinical psychopathy, Machiavellianism) and short-term mating preferences (Jonason, Li, & Buss, 2010; Jonason, Luevano, & Adams, 2012; Jonason, Lyons, & Blanchard, 2015). Indeed, Jonason et al. (2010) argue that the 'Dark Triad' traits may underlie some people's sexual behaviours and predispose people to promiscuity and mate poaching. Interestingly, people with high scores on psychopathy are prone to disinhibition and boredom susceptibility (Paulhus & Williams, 2002). As such, it may be insightful to investigate the relationships between other personality traits, such as the Dark Triad, with constructs in our research in future.

#### 4.4. Conclusion

Our studies are the first to suggest an association between meaninglessness, boredom susceptibility, coping using sex, and interest in sexual sensation seeking and promiscuity. Sexual interests and attitudes (sexual sensation seeking, promiscuity) can be linked with boredom, as a way to cope with, or specifically attempt to escape from, the meaninglessness that boredom poses. We build on previous existential literature on meaning threats and sex by outlining this process, informed by the existential escape hypothesis (Wisman, 2006). Our research contributes to the existential escape literature (Moynihan et al., 2015; Moynihan et al., 2017; Moynihan et al., 2020; Wisman et al., 2015) by incorporating the use of hedonic sex as a coping mechanism into the framework. We hope that these results will fuel further interest in this topic.

#### CRediT authorship contribution statement

**Andrew B. Moynihan:** Conceptualization, Methodology, Validation, Formal analysis, Investigation, Resources, Data curation, Writing - original draft, Writing - review & editing, Project administration. **Eric R. Igou:** Conceptualization, Methodology, Validation, Writing - original draft, Writing - review & editing, Supervision. **Wijnand A.P. van Tilburg:** Conceptualization, Methodology, Validation, Writing - original draft, Writing - review & editing, Supervision.

#### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.



## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jpaid.2020.110295>.

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