



Empirical research

Experiential avoidance and interpersonal problems: A moderated mediation model



James I. Gerhart^{a,*}, Courtney N. Baker^b, Michael Hoerger^c, George F. Ronan^d

^a Department of Behavioral Sciences, Rush University Medical Center, 1725W. Harrison, St. 950, Chicago, IL 60612, USA

^b Department of Psychology, Tulane University, Stern Hall 3039, New Orleans, LA 70118, USA

^c Department of Psychology, Tulane University, Stern Hall 3042, New Orleans, LA 70118, USA

^d Department of Psychology, Central Michigan University, Sloan Hall 202, Mount Pleasant, MI 48859, USA

ARTICLE INFO

Article history:

Received 24 January 2014

Received in revised form

29 June 2014

Accepted 19 August 2014

Keywords:

Experiential avoidance

Hostility

Interpersonal problems

Psychological flexibility

ABSTRACT

This pilot study employed a moderated mediation framework to examine whether negative expectations of interpersonal relationships explained the relationship between experiential avoidance and interpersonal problems. University students ($N=159$) completed measures of experiential avoidance, negative perceptions and expectations of interpersonal relationships (e.g., hostility, attachment anxiety), and interpersonal problems (e.g., coldness, social avoidance, dominating tendencies, and vindictiveness). Attachment anxiety explained the relationship between experiential avoidance and interpersonal problems involving coldness and social avoidance, with a stronger relationship at high levels of experiential avoidance. In addition, hostility explained the relationship between experiential avoidance and interpersonal problems involving dominant and vindictive tendencies. Moreover, experiential avoidance interacted with attachment anxiety and hostility to predict higher levels of interpersonal problems as evidenced by stronger indirect associations among participants reporting higher levels of experiential avoidance. Results of this pilot study provide a preliminary empirical model that integrates the literatures on experiential avoidance and interpersonal problems.

© 2014 Association for Contextual Behavioral Science. Published by Elsevier Inc. All rights reserved.

1. Introduction

Interpersonal problems are frequently reported by individuals seeking psychotherapy and often become the focus of intervention, suggesting the need for more basic research evaluating cognitive processes that may underlie interpersonal problems. Behavior analytic, psychodynamic and other developmental theories acknowledge that interpersonal problems are multiply determined and that early attachments play a role in shaping the interpersonal repertoire and a host of other social, emotional, behavioral, physiological, and academic outcomes (Aviezer, Sagi, Resnick, & Gini, 2002; Belsky & Fearon, 2002; Bowlby, 1969; Frigerio et al., 2009; Horowitz, Rosenberg, & Bartholomew, 1993; O'Connor, 2011; Prather & Golden, 2009). Psychological flexibility theory implicates experiential avoidance, the tendency to negatively evaluate and limit contact with distressing subjective experiences, as a vulnerability for a range of impairments (Bond et al., 2011; Herbert, Gaudiano, & Forman, 2013; Levin, Hildebrandt, Lillis, & Hayes, 2012). Similarly, interpersonal theory

has identified that rigid attempts to avoid distress in social situations may contribute to interpersonal problems (Grosse Holtforth, Bents, Mauler, & Grawe, 2006; Sullivan, 1953; Thompson, 1999). The current study interprets interpersonal theory within a broader framework of psychological flexibility theory and tests the hypothesis that experiential avoidance may explain negative perceptions and expectations of interpersonal relationships that in turn contribute to common interpersonal problems (Grosse Holtforth, Bents, Mauler, & Grawe, 2006; Levin et al., 2012; Sullivan, 1953; Thompson, 1999).

1.1. Experiential avoidance as a generalized vulnerability for distress

Interpersonal theories of psychopathology can be interpreted within a broader framework of psychological flexibility theory (Levin et al., 2012) ... a translational theory that bridges basic research and intervention (for a full description of psychological flexibility theory, see Hayes, Strosahl, & Wilson, 2012; Herbert, Gaudiano, & Forman, 2013; Levin et al., 2012). Within psychological flexibility theory, experiential avoidance is conceptualized to disrupt the pursuit of personally held values and contributes to psychosocial distress (Bond et al., 2011). Experiential avoidance is defined as the tendency to negatively evaluate, escape and avoid aversive private experiences. Experiential avoidance may provide

* Corresponding author. Tel.: +1 312942 8709; fax: +1 312563 6071.

E-mail addresses: james_gerhart@rush.edu (J.I. Gerhart), cnbaker@tulane.edu (C.N. Baker), mhoerger@tulane.edu (M. Hoerger), ronan1gf@cmich.edu (G.F. Ronan).

a broad umbrella for conceptualizing the avoidant functions of problematic interpersonal behaviors [and] interfere with the pursuit of meaningful, intimate and caring relationships (Grosse Holtforth et al., 2006). Experiential avoidance may be particularly problematic in interpersonal life when individuals avoid acknowledging the objective nature of maladaptive relationships and begin to view cognitive and emotional responses to those relationships as the problem (Kashdan, Morina, & Priebe, 2009). For example, individuals who deem their attachment anxiety as threatening may attempt to avoid such feelings by withdrawing from social situations and behaving in cold, impersonal ways. Similarly, individuals prone to hostile expectations regarding the intentions of others may behave in aggressive and dominating ways in an attempt to regulate feelings of vulnerability and reduce uncomfortable physiological arousal (Gardner & Moore, 2008).

Individuals prone to managing difficult emotions with experiential avoidance also report reduced ability to delay gratification, and this relationship is explained in part by heightened levels of depression and anger (Gerhart, Heath, Fitzgerald, & Hoerger, 2013). In the moment-to-moment progression of interpersonal interactions, individuals may behave impulsively to the extent that their choices are governed by short-term escape contingencies and are inconsistent with broader values of interpersonal intimacy, altruism, and cooperation. Thus, these individuals may desire and value interpersonal connection, but fail to interact effectively in the presence of difficult subjective experiences reducing their ability to engage in committed action (Hayes, Strosahl, & Wilson, 2012). As experiential avoidance increases, behavioral flexibility decreases; thus the chain of avoidant coping, negative expectations and interpersonal problems may become more rigidly linked. Understanding the pathways by which experiential avoidance fosters interpersonal problems could, ultimately, inform studies in clinical settings aimed at ameliorating interpersonal deficits.

1.2. The Interpersonal Circumplex and the persistence of interpersonal problems

Interpersonal theory and the Interpersonal Circumplex can be a useful guide for parsimoniously summarizing interpersonal behaviors or response sets that tend to co-occur (Barkham, Hardy, & Startup, 1996) and are thought to result from experiential avoidance. Interpersonal theories conceptualize interpersonal problems as learned behaviors that fall along two intersecting dimensions of coldness versus warmth, and dominance versus submission (see Fig. 1; Barkham et al., 1996; Bowlby, 1969). On the first dimension, individuals prone to coldness tend to be disengaged from others, asocial, unfriendly and disagreeable, whereas individuals prone to warmth are more engaged, prosocial, and friendly. On the second dimension, individuals prone to dominance tend to be controlling and aggressive, whereas individuals prone to submissiveness tend to be meek and passive.

Excesses in dimensions of coldness vs. warmth and dominance vs. submission may interact to produce interpersonal behavioral problems such as coldness, social avoidance, vindictiveness, and dominating behavior (Barkham et al., 1996). Difficulties such as coldness and social avoidance may be accompanied by significant levels of withdrawal and avoidance of intimacy (Wright et al., 2012). Difficulties with vindictiveness and dominating behavior are associated with significant levels of impulsivity, hostility and grandiosity (Wright et al., 2012). These clusters of interpersonal problems can also be persistent, with evidence suggesting that vindictive, cold, and dominating behaviors may be particularly resistant to intervention (Horowitz et al., 1993).

There are several plausible explanations for the persistence of interpersonal problems as these behaviors may serve a variety of functions (Farmer & Nelson-Gray, 1999). Interpersonal problems

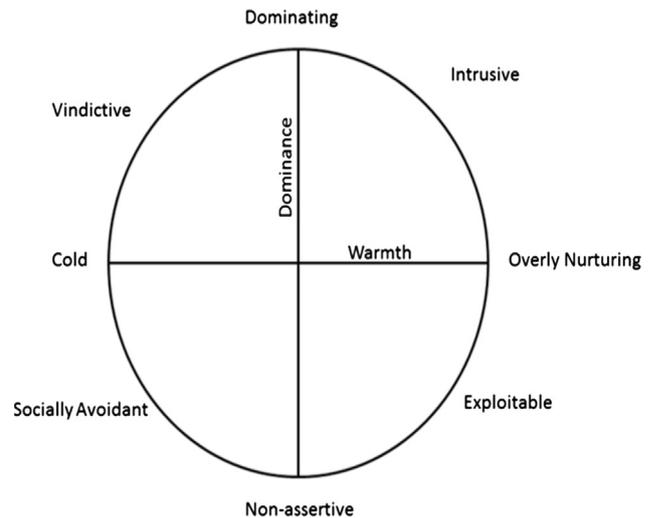


Fig. 1. The Interpersonal Circumplex.

are often intermingled with varied forms of subjective distress and the experiential avoidance of these varied forms of distress provide important hypotheses for understanding the functions that maintain these interpersonal behaviors (Farmer & Nelson-Gray, 1999). Social avoidance and withdrawal are linked to social anxiety, and aggressive behaviors tend to co-occur with angry emotions (Alden, Wiggins, & Pincus, 1990; Carver & Harmon-Jones, 2009). Ineffective attachments may contribute to a sense of mistrust, attachment anxieties, and diminished perception of control (Bowlby, 1969; Chorpita & Barlow, 1998; Mikulincer, 1998). These anxieties and expectations shaped in past relationships can be carried forward in the form of generalized anxiety regarding attachments or may be elicited by specific features of new relationships such as physical and behavioral similarities between past and present relationships (Brumbaugh & Fraley, 2006; Zebrowitz & Montepare, 2008). Individuals may view others as threatening, misinterpret vague, neutral and benign social cues as indications of a threat and acquire a repertoire of defensive or aggressive interpersonal behavior (Huessman, 1998). These expectancies may contribute to rule-governed behaviors that guide attention away from the moment-to-moment changes in relationship quality and seemingly reconfirm previously held beliefs about the self and others (Downey, Freitas, Michaelis, & Khouri, 1998; Wulfert, Greenway, Farkas, Hayes, & Dougher, 1994).

Interpersonal theory also maintains that behavioral problems may be directly maintained by the reactions of others (Horowitz et al., 1993). For instance, cold, withdrawn, and unfriendly reactions tend to evoke similar responses in others. These tit-for-tat interchanges can create positive feedback loops in which interpersonal coldness leads to longstanding detachment. Dominance and submission tend to evoke opposing reactions from others. Dominant behaviors may be reinforced by increased control, influence, and getting one's way. In contrast, submissive behaviors tend to invite additional domination from others. Although the loss of interpersonal connection and domination from others could be punishing in the long-term, problematic behaviors could be reinforced through escape and avoidance of short-term subjective distress (Grosse Holtforth et al., 2006).

1.3. Current study

The current pilot study interprets interpersonal theory of distress within psychological flexibility theory and evaluates the relationship between experiential avoidance, attachment anxiety, hostility, and interpersonal problems in a non-clinical sample.

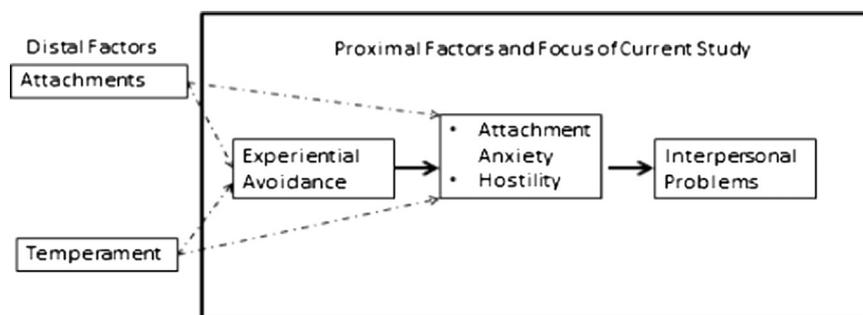


Fig. 2. Conceptual model of interpersonal problems. Distal factors including early attachments and temperament are assumed to impact focal variables in the current study including experiential avoidance, attachment anxiety, hostility, and interpersonal problems.

Fig. 2 provides an overarching conceptual model for how interpersonal problems are thought to develop over time. Based on prior research (Berking, Neacsiu, Comtois, and Linehan, 2009; Stevens et al., 2013) and theory (Bowlby, 1969; Grosse Holtforth et al., 2006; Levin et al., 2012), it is assumed that distal factors including prior attachments and temperamental characteristics likely play a role in shaping and reinforcing experiential avoidance, attachment anxiety, and hostility over the course of development.

The foci of the current study include experiential avoidance, attachment anxiety, hostility and interpersonal problems as these factors can be directly targeted in contextual behavioral treatments. A moderated-mediation model was proposed to explain the links between experiential avoidance and interpersonal problems. It was expected that experiential avoidance would be associated with subsequent attachment anxiety and hostility, as experiential avoidance has shown temporal precedence in predicting emotional distress in the form of depression (Berking et al., 2009). In turn, it was hypothesized that negative expectations of relationships in the form of attachment anxiety and hostility would be subsequently associated with interpersonal problems (Beck, Freeman & Davis, 2004; Safran, 1990; Wright et al., 2012).

Thus, the first hypothesis was that experiential avoidance will be indirectly associated with interpersonal problems, with the relationship explained by attachment anxiety and hostility. The second study hypothesis was that experiential avoidance would interact with attachment anxiety and hostility to predict interpersonal problems. These hypotheses were tested simultaneously using a moderated-mediation or conditional indirect effects framework (Preacher, Rucker, & Hayes, 2007). The moderated mediation/conditional indirect effects framework posits that the association between the mediator and dependent variable may depend on the level of independent variable (Hayes, 2013; Preacher et al., 2007). In the current analysis, an interaction of the independent and mediator variable would account for a significant portion of the total variance of the dependent variable. In addition, because of the significant interaction, the full indirect associations between experiential avoidance and interpersonal problems would be significantly stronger among individuals reporting high levels of experiential avoidance (Hayes, 2013).

2. Materials and method

2.1. Participants and procedure

Participants were recruited from the psychology subject pool at a Midwestern public university. Students were invited to participate in the study and were informed of risks and benefits of participation, including course credit. One hundred fifty-nine individuals provided informed consent and completed the study by completing psychometric assessments via SurveyMonkey.com.

The sample was primarily female (87%). The mean age was 24 years ($SD=6$). Forty-three percent were single, 11% were in relationships for less than six months, 38% were in relationships for six months or more, and 8% were married. Eighty-six percent were Caucasian, 6% were African-American or Black, 4% were Asian American, 1% was Native Hawaiian or Pacific Islander, and 1% was American Indian/Alaska Native. Ethnicity was evaluated separately; 4% identified as Hispanic/Latino.

2.2. Measures

2.2.1. Experiential avoidance

The Acceptance and Action Questionnaire Version II (AAQ-II; Bond et al., 2011) is a 10-item scale measured experiential avoidance. Sample items include “I worry about not being able to control my worries and feelings” and “It’s OK if I remember something unpleasant” (reverse coded). Respondents rate items on a scale from 1 (not at all true) to 10 (completely true). The AAQ-II possesses adequate validity, test–retest reliability, and internal consistency in clinical and community samples (Bond et al., 2011; Fledderus, Oude Voshaar, ten Klooster, & Bohlmeijer, 2012). Items were averaged, and higher scores indicated higher experiential avoidance. The measure did not specify a specific time-frame, but rather assessed experiential avoidance in general. In the current sample internal consistency was high, $\alpha=.87$.

2.2.2. Attachment anxiety

The Relationship Awareness Scale (RAS; Snell, 1998) is a 30-item measure that evaluates individuals’ experiences and behaviors in intimate relationships. The 9-item relational anxiety scale, which assesses the extent to which the reporter experiences anxiety and discomfort in close relationships, was used in the current study. Participants rated their agreement with items on a 0 (not at all characteristic of me) to 10 (very characteristic of me) scale. Example items include “I usually feel quite anxious about my close relationships” and “I am somewhat awkward and tense in close relationships.” Items were averaged, with higher scores indicating greater relational anxiety. The RAS relational anxiety scale is associated with adequate internal reliability (Riggio, 2004). Similarly, internal consistency for the relational anxiety scale was good in the current sample, $\alpha=.88$.

2.2.3. Hostility

The Aggression-Questionnaire (AQ; Buss & Perry, 1992) conceptualizes aggression as a multi-faceted construct comprised of anger, verbal aggression, physical aggression, and hostility (Buss & Perry, 1992). The eight-item hostility scale was used in the current study. The measure includes items such as “I sometimes feel that people are laughing at me behind me back” and “When people are especially nice, I wonder what they want.” Items are rated from 0

(not at all true) to 10 (completely true), and responses were averaged with higher values indicating more hostility. The AQ is associated with adequate reliability and validity (Bernstein & Gesn, 1997; Harris, 1997). Additionally, the questionnaire has demonstrated construct validity by converging with related constructs such as anger, impulsivity, and alcohol use (Buss & Perry, 1992; Tremblay & Ewart, 2005). Internal consistency for the hostility scale in the current sample was high, $\alpha = .89$.

2.2.4. Interpersonal problems

The short form of the Inventory of Interpersonal Problems (IIP-32; Barkham et al., 1996; Horowitz, Rosenberg, Baer, Ureño, & Villaseñor, 1988) is a 32-item measure producing subscales that map onto octants of the Interpersonal Circumplex. The IIP has been associated with high internal and test–retest reliability and convergent and criterion validity (Alden et al., 1990; Barkham et al., 1996; Horowitz, Rosenberg, Baer, Ureño, & Villaseñor, 1988). For the current study we focused on the cold, socially avoidant, dominating, and vindictive subscales. Example items include “It is hard for me to show affection to people” for the cold subscale, “It is hard for me to introduce myself to new people” for the socially avoidant subscale, “I want to get revenge against people too much” for the vindictive subscale, and “I try to control other people too much” for the dominating subscale. Items were rated from 0 (not at all true) to 10 (completely true), and responses were summed such that higher values are associated with more interpersonal problems. Internal consistencies for subscales were good, $\alpha = .73$ –.86.

2.3. Calculation

All analyses were conducted in SPSS Version 19. Primary study hypotheses were tested using the moderated mediation package developed by Hayes (2013). The program estimates indirect associations (mediation) with a bootstrapping procedure to account for non-normal distributions in indirect effects. The program simultaneously tests whether indirect associations vary in strength based on the value of a moderating variable (moderation). This would then imply that general proclivity to negatively evaluate and avoid difficult subjective experiences would be associated with additional attachment anxiety and hostility. In turn, attempts to escape or suppress attachment anxiety and hostility as it arises could lead to more rigid interpersonal problems as demonstrated by stronger associations among attachment anxiety and hostility with interpersonal problems in individuals with higher levels of experiential avoidance.

In this study, experiential avoidance was modeled simultaneously as the independent variable and moderating variable, such that experiential avoidance could contribute to attachment anxiety and hostility, and also modify the relationships between these variables and interpersonal problems (Hayes, 2013; Preacher et al., 2007). Attachment anxiety and hostility were modeled as

mediators. Interpersonal problems including social avoidance, coldness, dominating, and vindictiveness, were modeled as dependent variables. The moderated-mediation models were recomputed controlling for depressed mood, as associations could be confounded by the presence of negative affect; however, interaction effects remained significant after accounting for depressed mood, so they are not described further.

3. Results

3.1. Descriptive overview

Descriptive statistics are reported in Table 1. Mean levels of experiential avoidance were similar to those reported in similar university student samples (Gerhart, Seymour, Maurelli, Holman, & Ronan, 2013). Experiential avoidance was significantly associated with the mediating variables, including attachment anxiety and hostility, and with all dependent variables including coldness, social avoidance, dominating, and vindictiveness.

3.2. Hypothesis testing

Four separate moderated mediation models were computed to simultaneously test the first hypothesis that attachment anxiety and hostility would explain the relationship between experiential avoidance and interpersonal problems, and the second hypothesis that the indirect associations between experiential avoidance and interpersonal problems would be significantly stronger among individuals reporting higher levels of experiential avoidance. Table 2 reports model summaries for coldness, social avoidance, dominating and vindictiveness, respectively. Overall, the full moderated mediation models accounted for significant variance in coldness ($R^2 = .45$), social avoidance ($R^2 = .31$), dominating ($R^2 = .35$) and vindictiveness ($R^2 = .50$). As predicted, significant interaction terms revealed that experiential avoidance interacted with attachment anxiety to predict higher levels of coldness ($B = .0037$, $SE = .0013$, $t = 2.7346$, $p < .01$), and social avoidance ($B = .0030$, $SE = .0014$, $t = 2.1699$, $p < .05$). Experiential avoidance interacted with hostility to predict higher levels of dominating ($B = .0037$, $SE = .0011$, $t = 3.2337$, $p < .01$), and vindictiveness ($B = .0025$, $SE = .0009$, $t = 2.6247$, $p < .01$). Fig. 3 presents 95% bootstrapped confidence intervals of indirect effects at low ($-1SD$), mean, and high ($+1SD$) levels of experiential avoidance. All indirect effects were statistically significant as the confidence intervals did not include zero. Together these findings provided support for moderated mediation. Specifically, the indirect associations between experiential avoidance and interpersonal problems were stronger or more closely linked among individuals reporting higher levels of experiential avoidance.

Table 1

Means, standard deviations, ranges, and correlations between study variables.

	Mean	SD	Range	2	3	4	5	6	7
1 Experiential avoidance	3.0	1.8	.0–7.7	.54***	.59***	.50***	.53***	.42***	.51***
2 Attachment anxiety	2.9	2.2	.0–8.8		.52***	.63***	.66***	.35***	.40***
3 Hostility	3.1	2.4	.0–9.8			.45***	.51***	.55***	.68***
4 IIP coldness	1.8	2.1	.0–9.0				.82***	.35***	.46***
5 IIP socially avoidant	2.1	2.3	.0–9.8					.35***	.41***
6 IIP dominating	1.4	1.6	.0–9.3						.69***
7 IIP vindictive	1.4	1.6	.0–9.0						

Note. All measures used 0–10 rating scales.

*** $p < .001$.

Table 2
Regression model summaries.

Model 1: Coldness model summary					
R	R ²	F	df1	df2	p
.67	.45	42.39	3.00	155.00	< .001
Coeff					
	SE	t	p	95%	CI
Constant	1.52	1.54	.99	.324	–1.5222 4.5667
Attachment anxiety	.09	.06	1.50	.135	–.0270 .1991
Experiential avoidance	–.01	.05	–.26	.797	–.1170 .0900
Experiential avoidance × attachment anxiety	.00	.00	2.73	.007	.0010 .0063
Model 2: Social avoidance model summary					
R	R ²	F	df1	df2	p
.70	.49	49.31	3.00	155.00	< .001
Coeff					
	SE	t	p	95%	CI
Constant	1.12	1.60	.70	.486	–2.0506 4.2888
Attachment anxiety	.13	.06	2.24	.026	.0160 .2515
Experiential avoidance	.04	.05	.49	.622	–.0808 .1347
Experiential avoidance × attachment anxiety	.00	.00	2.17	.032	.0003 .0058
Model 3: Dominating model summary					
R	R ²	F	df1	df2	p
.60	.36	28.89	3.00	155.00	< .001
Coeff					
	SE	t	p	95%	CI
Constant	3.40	1.27	2.69	.008	.8990 5.9041
Hostility	.04	.05	.78	.440	–.0573 .1312
Experiential avoidance	–.07	.05	–1.47	.143	–.1571 .0229
Experiential avoidance × hostility	.00	.00	3.23	.002	.0014 .0059
Model 4: Vindictiveness model summary					
R	R ²	F	df1	df2	p
.71	.50	51.56	3.00	155.00	< .001
Coeff					
	SE	t	p	95%	CI
Constant	1.08	1.06	1.02	.311	–1.0187 3.1806
Hostility	.10	.04	2.57	.011	.0238 .1819
Experiential avoidance	–.02	.04	–.52	.603	–.0954 .0556
Experiential avoidance × hostility	.00	.00	2.62	.010	.0006 .0044

3.3. Sensitivity analyses

An additional four alternative moderated mediation models were computed with the attachment anxiety and hostility reversed in order to assess the specificity of their interactions with experiential avoidance. Thus, models remained the same except that attachment anxiety was entered as a mediator in the prediction of dominating and vindictiveness, and hostility was entered as a mediator in the prediction of coldness and social avoidance. Experiential avoidance did not significantly interact with attachment anxiety to predict dominating ($B = -.0010$, $SE = .0011$, $t = -.9120$, $p = .36$) or vindictiveness ($B = -.0003$, $SE = .0013$, $t = -.2412$, $p = .81$). Similarly, experiential avoidance failed to significantly interact with hostility to predict coldness ($B = .0028$, $SE = .0015$, $t = 1.8517$, $p = .07$) or social avoidance ($B = .0018$, $SE = .0016$, $t = 1.1528$, $p = .25$), indicating that moderating impacts of experiential avoidance were specific to attachment anxiety associations with coldness and social avoidance, while hostility associations were specific to dominating and vindictiveness. Thus, the sensitivity analyses ruled out alternative explanations for our hypothesized findings.

4. Discussion

Findings from this pilot study build upon the psychological flexibility literature and offer a preliminary framework for

conceptualizing interpersonal problems as a function of the experiential avoidance of subjective distress. Attachment anxiety explained the relationship between experiential avoidance and coldness and social avoidance. Hostility explained the relationship between experiential avoidance and dominating and vindictiveness. Moreover, these indirect associations were moderated by experiential avoidance such that they were strongest among individuals reporting high levels of experiential avoidance. This suggests that higher levels of experiential avoidance may engender more rigid and inflexible patterns of subjective distress and interpersonal problems. Additionally, these patterns are specific to subtypes of negative perceptions and expectations of interpersonal relationships, such that attachment anxiety is more closely tied to social withdrawal while hostility is more closely tied to aggressive behavior.

The finding on attachment anxiety, coldness and social avoidance are in accord with previous research on experiential avoidance and social anxiety. Individuals prone to suppressing and avoiding anxiety experience paradoxically higher levels of social anxiety, and this anxiety is more disruptive to quality of life (Kashdan et al., 2009). In an effort to control these feelings, individuals may behave in cold and impersonal ways to hide overt expression of anxiety and attempt to leave or avoid social interactions all together. The relationships this study found between hostility, dominating and vindictiveness are in accord with previous research on experiential avoidance and anger. Anger and

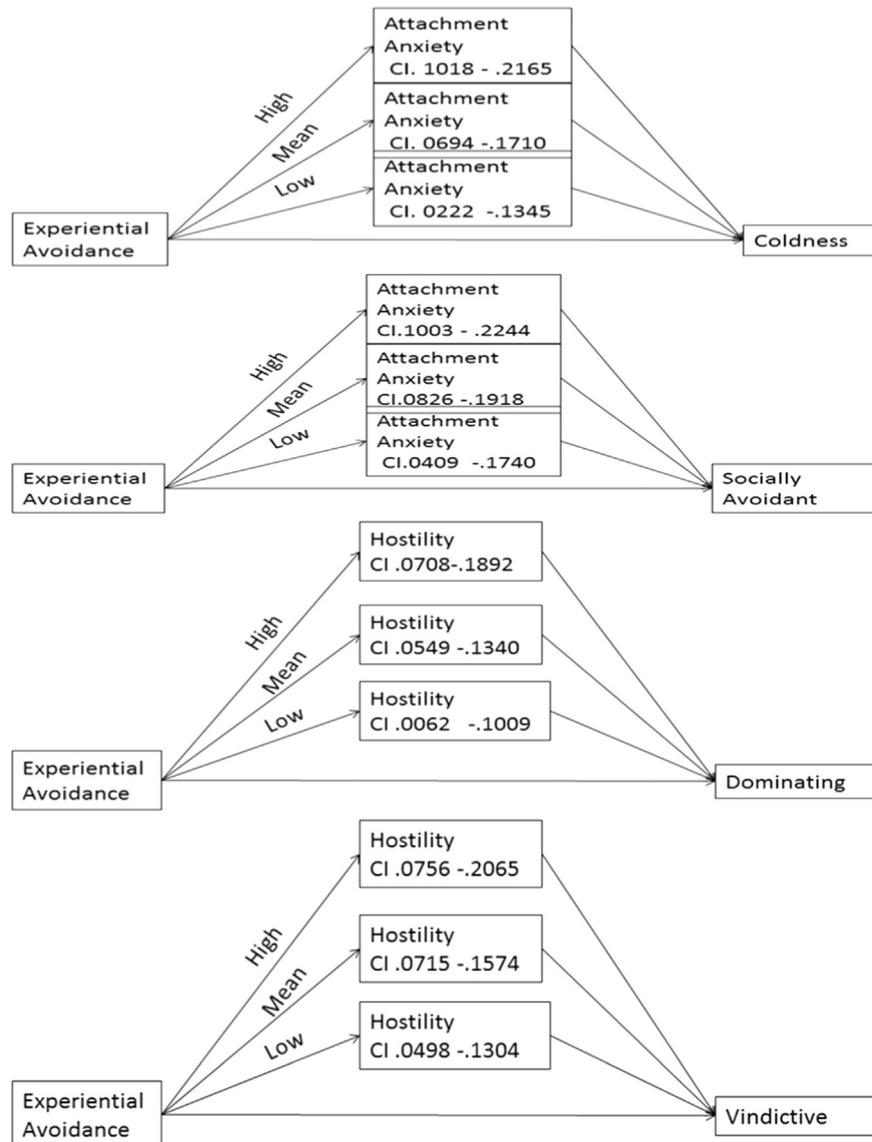


Fig. 3. Moderated mediation models. Low=1 standard deviation below the mean of experiential avoidance. Mean=Mean of experiential avoidance. High=1 standard deviation above the mean of experiential avoidance. CI=95% confidence interval.

related hostility tend to be subjectively aversive, and individuals may engage in aggressive behaviors and harbor vindictive attitudes that help them to regulate feelings of vulnerability (Gardner & Moore, 2008). Although the behavioral expression of anger was once thought to be cathartic, short-term emotional relief from tension and anger tends to increase the frequency of aggressive responding in the long-term (Lewis & Bucher, 1992).

The moderating effects of experiential avoidance lend support to the notion that attempts to avoid subjective distress in the form of attachment anxiety and hostility tend to narrow the range of interpersonal responding. As attention and energy are directed to the ongoing monitoring and suppression of subjective experience, individuals may ignore important information distress signals about maladaptive relationships. Anxious individuals may rigidly avoid closeness and engagement with others, and therefore they may fail to recognize opportunities to build positive relationships and challenge over-generalized rules derived from past relationships. The results also offer a more refined view of the role of avoidance in the more aggressive interpersonal problems of dominating behaviors and vindictiveness. Hostile individuals may avoid or terminate relationships through aggressive dominating

behaviors and lack the insight or motivation needed to appreciate the harm done to other individuals. Whereas Grosse Holtforth and colleagues (2006) did not document significant relationships between avoidance and dominating behaviors and vindictiveness, the current study found that experiential avoidance predicted these interpersonal problems through the mediational pathway of hostility, with this link being strongest for those highest in experiential avoidance. Thus, laboratory research and ecological momentary assessments are needed to determine how experiential avoidance may interact with hostility-related tension to motivate dominating and vindictive behavior in social situations.

4.1. Limitations

Results of the current study are interpreted within the context of study strengths and weaknesses. Strengths of the study include well-validated measures of study constructs, and a novel moderated mediation analytic approach. Limitations of the study include a university sample composed primarily of young, white female students, and the use of cross-sectional data. Given the reliance on a university sample, we caution against automatically inferring

that the relationships among variables will remain identical in clinical samples. More work is needed to determine how these exciting preliminary findings fit among samples with histories of victimization and trauma, and also to samples prone to engaging in interpersonal violence (Gerhart et al., 2013; Stevens et al., 2013). Although prior theory supports the temporal precedence of the models, this study was cross-sectional and causality cannot be inferred from the current data. Prior research suggests that experiential avoidance is predictive of later emotional distress (Berking et al., 2009), but the possibility of a reciprocal relationship remains that distress in the form of attachment anxiety and hostility may elicit further experiential avoidance. In particular, intensive longitudinal or ecological moment assessment designs are needed to capture the cross-lagged relationship of the study variables as they continually unfold in the context of daily life.

5. Conclusions

The results of this pilot study call for more research on interpersonal problems, particularly complex interpersonal problems observed in the context of treatment. Psychological distress, interpersonal problems, and ineffective emotion regulation strategies are highly intermingled, and evident in many comorbid DSM-5 disorders. Viewing interpersonal problems within the framework of psychological flexibility theory may help applied researchers conceptualize the common functions (i.e. avoidance of distress) of topographically dissimilar clusters of interpersonal problems. Given that experiential avoidance is conceptualized as a modifiable vulnerability to a range of psychopathology and has been shown to function as a potential mechanism of change in contemporary behavioral therapies (Berking et al., 2009), future research should examine whether targeting experiential avoidance in treatment may help individuals overcome previously treatment resistant interpersonal problems such as dominating, vindictive, and cold traits. Moreover, this study involving a non-clinical sample showed that experiential avoidance interacts with at least two classes of negative perceptions and expectations of interpersonal relationships. Intervening to reduce experiential avoidance could have a generalized effect of increasing behavioral flexibility and reducing an array of ineffective interpersonal behaviors, though more research in clinical samples is fundamentally warranted.

Finally, the study has important implications for further integration of the psychotherapy literature. In recent years, meta-analytic work on treatment outcomes has pointed to the comparable treatment outcomes across disparate theoretical approaches to psychotherapy (Wampold et al., 1997). Several treatment refractory interpersonal problems investigated in the current study have been the target of brief dynamic therapy (Horowitz et al., 1993). The current study provides a preliminary but parsimonious framework for understanding how acceptance-based techniques could augment interpersonally-focused treatments. Although trait-level interpersonal problems may be overlearned through rigid avoidance of emotional distress, emerging research on sociogenomic models of personality suggest that state-level changes in mood and emotion can potentially accumulate to trait-level change when repeatedly reinforced over time (Roberts, 2009). From this perspective, patients may benefit from therapeutic encounters that enable them to acknowledge and accept the occurrence of negative perceptions and expectations of interpersonal relationships while pursuing commonly held values such as friendship, altruism and emotional intimacy. Over time, individuals could learn to respond more flexibly in the presence of negative expectations about relationships. This approach is consistent with contemporary contextual behavioral treatments including Acceptance and Commitment Therapy and Functional Analytic Psychotherapy that seek to reinforce psychological flexibility and adaptive interpersonal

function in the context of supportive therapeutic relationships (Hayes, Strosal, & Wilson, 2012; Tsai et al., 2009).

In conclusion, using a moderated mediation framework, the present investigation showed that attachment anxiety and hostility explained the relationship between experiential avoidance and interpersonal problems in a sample of young adults, and that these explanatory relationships were strongest for those individuals who were most avoidant of uncomfortable affect and other internal experiences. More research is needed to evaluate the pathways by which experiential avoidance drives interpersonal problems in clinical populations.

References

- Alden, L. E., Wiggins, J. S., & Pincus, A. L. (1990). Construction of circumplex scales for the Inventory of Interpersonal Problems. *Journal of Personality Assessment*, 55(3–4), 521–536.
- Aviezer, O., Sagi, A., Resnick, G., & Gini, M. (2002). School competence in young adolescence: Links to early attachment relationships beyond concurrent self-perceived competence and representations of relationships. *International Journal of Behavioral Development*, 26(5), 397–409. <http://dx.doi.org/10.1080/01650250143000328>.
- Barkham, M., Hardy, G. E., & Startup, M. (1996). The IIP-32: A short version of the inventory of interpersonal problems. *British Journal of Clinical Psychology*, 35(1), 21–35.
- Beck, A., Freeman, A., & Davis, D. (2004). *Cognitive Therapy of Personality Disorders*. New York: Guilford.
- Belsky, J., & Fearon, R. (2002). Early attachment security, subsequent maternal sensitivity, and later child development: Does continuity in development depend upon continuity of caregiving? *Attachment & Human Development*, 4, 361–387. <http://dx.doi.org/10.1080/14616730210167267>.
- Berking, M., Neacsiu, A., Comtois, K. A., & Linehan, M. M. (2009). The impact of experiential avoidance on the reduction of depression in treatment for borderline personality disorder. *Behaviour Research and Therapy*, 47(8), 663–670.
- Bernstein, I. H., & Gesn, P. R. (1997). On the dimensionality of the Buss/Perry aggression questionnaire. *Behaviour Research and Therapy*, 35(6), 563–568.
- Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., & Zettle, R. D. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire-II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy*, 42(4), 676–688.
- Bowlby, J. (1969). *Attachment: Volume 1 of attachment and loss*. London: The Tavistock Institute of Human Relations.
- Brumbaugh, C. C., & Fraley, R. C. (2006). Transference and attachment: How do attachment patterns get carried forward from one relationship to the next? *Personality and Social Psychology Bulletin*, 32, 552–560.
- Buss, A. H., & Perry, M. (1992). The aggression questionnaire. *Journal of personality and social psychology*, 63(3), 452–459. <http://dx.doi.org/10.1037/0022-3514.63.3.452>.
- Carver, C. S., & Harmon-Jones, E. (2009). Anger is an approach-related affect: Evidence and implications. *Psychological Bulletin*, 135, 183–204. <http://dx.doi.org/10.1037/a0013965>.
- Chorpita, B. F., & Barlow, D. H. (1998). The development of anxiety: The role of control in the early environment. *Psychological Bulletin*, 124, 3–21.
- Downey, G., Freitas, A. L., Michaelis, B., & Khouri, H. (1998). The self-fulfilling prophecy in close relationships: Rejection sensitivity and rejection by romantic partners. *Journal of Personality and Social Psychology*, 75(2), 545. <http://dx.doi.org/10.1037/0022-3514.75.2.545>.
- Farmer, R. F., & Nelson-Gray, R. O. (1999). Functional analysis and response covariation in the assessment of personality disorders: A reply to Staats and to Bissett and Hayes. *Behaviour Research and Therapy*, 37(4), 385–394.
- Fledderus, M., Oude Voshaar, M. A., ten Klooster, P. M., & Bohlmeijer, E. T. (2012). Further evaluation of the psychometric properties of the Acceptance and Action Questionnaire-II. *Psychological Assessment*, 24(4), 925.
- Frigerio, A., Ceppi, E., Rusconi, M., Giorda, R., Raggi, M., & Fearon, P. (2009). The role played by the interaction between genetic factors and attachment in the stress response in infancy. *Journal of Child Psychology and Psychiatry*, 50, 1513–1522. <http://dx.doi.org/10.1111/j.1469-7610.2009.02126.x>.
- Gardner, F. L., & Moore, Z. (2008). Understanding clinical anger and violence: The anger avoidance model. *Behavior modification*, 32, 897–912. <http://dx.doi.org/10.1177/0145445508319282>.
- Gerhart, J., Heath, N. M., Fitzgerald, C., & Hoerger, M. (2013). Direct and Indirect Associations between experiential avoidance and reduced delay of gratification. *Journal of Contextual Behavioral Science*, 2, 9–14. <http://dx.doi.org/10.1016/j.jcbs.2013.02.001>.
- Gerhart, J. I., Seymour, B., Maurelli, K., Holman, K., & Ronan, G. (2013). Health and relationships in violence reduction participants: Indirect effects of angry temperament. *The Journal of Forensic Psychiatry & Psychology*, 24(2), 179–191.
- Grosse Holtforth, M. G., Bents, H., Mauler, B., & Grawe, K. (2006). Interpersonal distress as a mediator between avoidance goals and goal satisfaction in psychotherapy inpatients. *Clinical Psychology & Psychotherapy*, 13(3), 172–182.

- Harris, J. A. (1997). A further evaluation of the aggression questionnaire: Issues of validity and reliability. *Behaviour Research and Therapy*, 35(11), 1047–1053.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford.
- Hayes, S.C., Strosahl, K. D., & Wilson, K. G. (2012). *Acceptance and commitment therapy: The process and practice of mindful change (2nd edition)*. New York, NY: The Guilford Press.
- Herbert, J. D., Gaudiano, B. A., & Forman, E. M. (2013). The importance of theory in cognitive behavior therapy: A perspective of contextual behavioral science. *Behavior Therapy*, 44(4), 580–591.
- Horowitz, L. M., Rosenberg, S. E., Baer, B. A., Ureño, G., & Villaseñor, V. S. (1988). Inventory of interpersonal problems: Psychometric properties and clinical applications. *Journal of Consulting and Clinical Psychology*, 56(6), 885.
- Horowitz, L. M., Rosenberg, S. E., & Bartholomew, K. (1993). Interpersonal problems, attachment styles, and outcome in brief dynamic psychotherapy. *Journal of Consulting and Clinical Psychology*, 61(4), 549.
- Huesmann, L. R. (1998). The role of social information processing and cognitive schema in the acquisition and maintenance of habitual aggressive behavior. In: R. G. Geen, & E. Donnerstein (Eds.), *Human aggression: Theories, research, and implications for social policy* (pp. 73–109). San Diego, CA, US: Academic Press.
- Kashdan, T. B., Morina, N., & Priebe, S. (2009). Post-traumatic stress disorder, social anxiety disorder, and depression in survivors of the Kosovo War: Experiential avoidance as a contributor to distress and quality of life. *Journal of Anxiety Disorders*, 23(2), 185–196. <http://dx.doi.org/10.1016/j.janxdis.2008.06.006>.
- Levin, M. E., Hildebrandt, M. J., Lillis, J., & Hayes, S. C. (2012). The impact of treatment components suggested by the psychological flexibility model: A meta-analysis of laboratory-based component studies. *Behavior Therapy*, 43(4), 741–756.
- Lewis, W. A., & Bucher, A. M. (1992). Anger, catharsis, the reformulated frustration-aggression hypothesis, and health consequences. *Psychotherapy: Theory, Research, Practice, Training*, 29, 385.
- Mikulincer, M. (1998). Attachment working models and the sense of trust: An exploration of interaction goals and affect regulation. *Journal of Personality and Social Psychology*, 74(5), 1209. <http://dx.doi.org/10.1037/0022-3514.74.5.1209>.
- O'Connor, E. (2011). Risks and outcomes associated with disorganized/controlling patterns of attachment at age three years in the National Institute of Child Health & Human Development Study of Early Child Care and Youth Development. *Infant Mental Health Journal*, 32(4), 450–472.
- Prather, W., & Golden, J. A. (2009). A behavioral perspective of childhood trauma and attachment issues: Toward alternative treatment approaches for children with a history of abuse. *International Journal of Behavioral Consultation and Therapy*, 5(1), 56–74.
- Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, 42(1), 185–227.
- Riggio, H. R. (2004). Parental marital conflict and divorce, parent-child relationships, social support, and relationship anxiety in young adulthood. *Personal Relationships*, 11(1), 99–114.
- Roberts, B. W. (2009). Back to the future: Personality and assessment and personality development. *Journal of Research in Personality*, 43(2), 137–145.
- Safran, J. D. (1990). Towards a refinement of cognitive therapy in light of interpersonal theory: II. Practice. *Clinical Psychology Review*, 10(1), 107–121.
- Snell, W. E., Jr. (1998). The Relationship Awareness Scale: Measuring relational-consciousness, relational-monitoring, and relational-anxiety. *Contemporary Social Psychology*, 18, 23–49.
- Stevens, N. R., Gerhart, J., Goldsmith, R. E., Heath, N. M., Chesney, S. A., & Hobfoll, S. E. (2013). Emotion regulation difficulties, low social support, and interpersonal violence mediate the link between childhood abuse and posttraumatic stress symptoms. *Behavior Therapy*, 44(1), 152–161.
- Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. New York, NY, US: W W Norton & Co.
- Thompson, R. A. (1999). Early attachment and later development. In: J. Cassidy, & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 265–286). New York, NY US: Guilford Press.
- Tremblay, P. F., & Ewart, L. A. (2005). The Buss and Perry Aggression Questionnaire and its relations to values, the Big Five, provoking hypothetical situations, alcohol consumption patterns, and alcohol expectancies. *Personality and Individual Differences*, 38(2), 337–346.
- Tsai, M., Kohlenberg, R. J., Kanter, J. W., Kohlenberg, B., Follette, W. C., & Callaghan, G. M. (2009). *A guide to functional analytic psychotherapy. Awareness, Courage, Love and Behaviorism*. New York: Springer.
- Wampold, B. E., Mondin, G. W., Moody, M., Stich, F., Benson, K., & Ahn, H. N. (1997). A meta-analysis of outcome studies comparing bona fide psychotherapies: "Empirically, all must have prizes.". *Psychological Bulletin*, 122, 203.
- Wright, A. G., Pincus, A. L., Hopwood, C. J., Thomas, K. M., Markon, K. E., & Krueger, R. F. (2012). An interpersonal analysis of pathological personality traits in DSM-5. *Assessment*, 19(3), 263–275.
- Wulfert, E., Greenway, D. E., Farkas, P., Hayes, S. C., & Dougher, M. J. (1994). Correlation between self-reported rigidity and rule-governed insensitivity to operant contingencies. *Journal of Applied Behavior Analysis*, 27(4), 659–671. <http://dx.doi.org/10.1901/jaba.1994.27-659>.
- Zebrowitz, L. A., & Montepare, J. M. (2008). Social psychological face perception: Why appearance matters. *Social and Personality Psychology Compass*, 2(3), 1497–1517.