

Trait displaced aggression, physical health, & life satisfaction: A process model

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Abstract

Aggressive individuals are at increased risk of poor health, early mortality, mental health problems, and decreased life satisfaction. However, recent research suggests that trait aggression is not a unitary phenomenon. To date, most personality research on the topic has focused on direct aggression. Individuals high in trait direct aggression tend to respond to provocation with immediate anger and retaliation. By contrast, those high in trait displaced aggression tend to respond to provocations with initial restraint, yet eventually “take out” their anger on innocent individuals. Trait displaced aggression is a multifaceted personality dimension consisting of angry rumination, revenge planning, and aggression against undeserving targets. The present research was the first to investigate the effects of trait displaced aggression on physical and mental health-related variables. Specifically, more than 800 Internet respondents completed measures of direct and displaced aggression, physical health, life satisfaction, stress, and risky behaviour. Trait displaced aggression predicted negative physical and mental health outcomes as well as decreased life satisfaction. Structural equation modeling tested a process model whereby these effects occur. Results showed that perceived stress and avoidant provocation-related coping strategies mediated the relationship between trait displaced

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aggression and self-reported physical health symptoms while perceived stress mediated the effect of trait displaced aggression on life satisfaction.

Keywords: Aggressive personality, Life satisfaction, Physical health, Trait displaced aggression

Introduction

When provoked, some individuals tend to respond with intense anger and immediate retaliation. Such individuals are high in *trait direct aggression* (Buss & Perry, 1992). Others tend to respond to provocations with initial inhibition, subsequent rumination, and eventually “taking out” their aggressive impulses on innocent others. These individuals are high in *trait displaced aggression* (Denson et al., 2006; Denson, in press). Trait direct aggression has long been considered a risk factor for poor health, especially cardiovascular disease and mortality (e.g., Booth-Kewley & Friedman, 1987). The novel contribution of the current research was to establish that trait displaced aggression may influence self-reported physical and mental health. Furthermore, we have identified two key pathways that contribute to these effects: *stress* and *avoidant coping strategies*.

The first pathway whereby trait displaced aggression might influence physical health is via the subjective experience of stress. In the current study, we examined self-reported physical symptoms, which are bodily complaints, and are influenced by both actual physiological conditions as well as psychological factors (Pennebaker, 1982). Although they do not perfectly correspond to physical condition, they are important because they provide insight into perceptions of health—an essential aspect of illness behaviour. As such, there are multiple pathways whereby aggressive personality may influence self-rated health. For instance, although the hostile reactivity and angry rumination associated with trait displaced aggression may directly disrupt physiological functioning, this reactive affective style is also likely to exacerbate perceptions of stress resulting from life’s routine provocations. Stress is important because it can lead to immune system dysregulation (Segerstrom & Miller, 2004). Consistent with this notion, recent work has linked rumination with exacerbated cardiovascular, endocrine, and immune responses to naturally occurring and laboratory stressors (Brosschot, Gerin, & Thayer, 2006; Thomsen et al., 2004).

There is a second pathway that is directly relevant to individuals high in trait displaced aggression. These individuals may engage in health-compromising behaviours as a means of reducing angry rumination. Because rumination is a heightened state of self-awareness that often intensifies negative feelings including anger (Duval & Wicklund, 1972; Rusting & Nolen-Hoeksema, 1998), individuals are presumably motivated to down-regulate this self-awareness and angry affect. This uncomfortable emotional state may lead those high in trait displaced aggression to engage in *avoidant coping strategies* such as unhealthy behaviours intended to provide relief from angry rumination (e.g., substance abuse, binging on junk food, risky sexual behaviour; see Baumeister, 1991). In light of these two possible pathways, the current study examined the first pathway by assessing perceived stress and the second pathway by assessing how individuals cope with provocations. We expected that perceived stress and an avoidant coping style in response to provocations would mediate the effects of trait displaced aggression on physical symptoms. Because engaging in support-seeking coping behaviours and acts of

physical aggression have been linked to better and worse outcomes respectively, we controlled for these variables as well in our analyses.

We also suspected that those high in trait displaced aggression might be less satisfied with their lives than individuals low on the dimension. This is because individuals high in trait displaced aggression report harming their romantic partners to a greater extent than those high in trait direct aggression (Denson et al., 2006). Because they drive away these important people, those high in trait displaced aggression alienate important sources of social support (Pedersen, Denson, & Walti, 2008), thereby increasing their risk for mental health problems. Indeed, close, supportive relationships are an important buffer to life stress (Uchino, 2006). Thus, those high in trait displaced aggression should perceive high levels of stress due to lack of social support. They should also feel less satisfied with their lives because close personal relationships are an important contributor to life satisfaction (Diener & Seligman, 2002). Thus, perceived stress resulting from decreased social support should mediate the effect of trait displaced aggression on decreased life satisfaction.

Method

Participants

A total of 827 participants (83% female, $M = 34.8$ years) completed the study via the Internet. Participants responded to an advertisement on a general use website (www.about.com) and were entered in a lottery for a \$300 prize.

Materials

Trait displaced aggression. The *Displaced Aggression Questionnaire* (DAQ) is a 31-item self-report measure of trait displaced aggression (Denson et al., 2006). The scale consists of three subscales: *angry rumination* (e.g., “I keep thinking about events that angered me for a long time”; $\alpha = .95$, $M = 3.64$, $SD = 1.54$), *revenge planning* (e.g., “When someone makes me angry, I can’t stop thinking about how to get back at this person”; $\alpha = .93$, $M = 2.35$, $SD = 1.15$) and *behavioural displaced aggression* (e.g., “I take my anger out on innocent others”; $\alpha = .94$, $M = 2.75$, $SD = 1.27$; 1 = *extremely uncharacteristic of me*, 7 = *extremely characteristic of me*).

Somatic symptoms. Participants endorsed whether or not they had experienced 54 common symptoms (e.g., running nose, chest pains, swollen joints, sore throat) taken from the *Pennebaker Inventory of Limbic Languidness* in the past 7 days (Pennebaker, 1982). The number of symptoms was summed for analysis ($M = 13.43$, $SD = 8.46$).

Life satisfaction. The 5-item *Satisfaction With Life Scale* (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) was used to assess participants’ subjective global judgment of life satisfaction (e.g., “I am satisfied with my life”; $\alpha = .89$, $M = 4.37$, $SD = 1.38$; 1 = *extremely uncharacteristic of me*, 7 = *extremely characteristic of me*).

Perceived stress. Four items from the *Perceived Stress Scale* (Cohen, Karmack, & Mermelstein, 1983; $\alpha = .84$, $M = 2.66$, $SD = 0.87$) were used to assess current perceptions of life stress (e.g., “In the last month, how often have you felt that you were unable to control the important things in your life?”; 1 = *never*, 5 = *very often*).

Strategies for coping with provocations. A modified version of the *Coping Strategies Indicator* (Amirkhan, 1990) was used to assess three common types of coping strategies in response to provoking events. Specifically, participants were asked to recall an event that had angered them in the past 6 months, and subsequently answered 15 items designed to assess how they coped with that provoking incident. The items assessed the three orthogonal coping strategies of *problem solving coping* (e.g., “You set some goals for yourself to deal with the situation” ; $\alpha = .83$, $M = 2.23$, $SD = 0.57$), *support seeking* (e.g., “You sought reassurance from those who know you best” ; $\alpha = .88$, $M = 2.27$, $SD = 0.63$), and *avoidant coping* (e.g., “You avoided being with people in direct” ; $\alpha = .69$, $M = 1.53$, $SD = 0.47$; 1 = *not at all*, 2 = *a little*, or 3 = *a lot*).

Health-relevant and risky behaviours. We also included an item asking how many days participants *exercised during the past week* ($M = 3.06$, $SD = 2.85$) as well as 4 items assessing eating a *healthy diet* in the past 7 days ($\alpha = .71$; $M = 3.06$, $SD = 2.85$). *Risky behaviours* related to negative health outcomes were assessed with 21 dichotomous (yes/no) items. These were behaviours commonly assessed in the health psychological literature such as smoking, number of alcoholic drinks in the past week, having been tested for AIDS or sexually transmitted diseases (STDs), and illicit drug use. Additional items were taken from the *Cognitive Appraisal of Risky Events* scale (CARE; Fromme, Katz, & Rivet, 1997) to assess *physical aggression* (4 items; e.g., “In the past 30 days, have you hit someone with a fist, weapon or object?”; $M = 0.61$, $SD = 0.84$) and *risky sexual behaviors* (5 items; e.g., “In the past 30 days, have you had sex without protection against sexually transmitted disease?”; $M = 0.45$, $SD = 0.85$). The dichotomous (yes/no) 10-item form of the Michigan Alcohol Screening Test (MAST; Pokorny, Miller, & Kaplan, 1972) was administered to assess symptoms of *alcohol dependence* ($M = 0.96$, $SD = 1.40$).

Domestic abuse and legal problems. These dichotomous items included having ever been arrested, being convicted of driving while intoxicated, and two items assessing police visits for domestic disturbance (i.e., “Have police ever visited your house for domestic disturbance?” and “Has your spouse or partner ever called the police on you?”). Because we have previously found trait displaced aggression to be related to a measure of self-reported domestic abuse (Denson et al., 2006), we attempted to conceptually replicate this finding with new items as well as investigate other potential areas of legal difficulties.

Participants also indicated their age, education, income, ethnicity, and gender.

Results

Table 1 reports the as partial regression coefficients and odds-ratios for the relationships between trait displaced aggression and the outcome variables controlling for age, gender, and income. Trait displaced aggression was significantly related to a variety of health outcomes and potential health-compromising behaviours. Specifically, we found that trait displaced aggression was associated with increased use of avoidant coping strategies, increased perceptions of stress, an increased number of self-reported physical symptoms, decreased life satisfaction, and a number of other

negative behavioural outcomes (e.g., risky sexual behaviours, physical aggression, symptoms of alcohol dependence, illegal drug use, arrests, and domestic abuse).

Table 1: The relationship between trait displaced aggression and the outcome variables controlling for age, gender, and income.

	Standardized regression coefficients (β)		Odds Ratios
Ordinal Measures	Trait displaced aggression	Dichotomous Measures	Trait displaced aggression
Total Number of Symptoms	.24*	Smoking	1.00
Cardiovascular Symptoms	.23*	Marijuana in past 30 days	1.20
Respiratory Symptoms	.13*	Other illegal drugs in past week	1.85*
Gastrointestinal Symptoms	.19*	Driving while intoxicated	0.84
Satisfaction with Life	-.32*	Ever been arrested?	1.43*
Coping: Problem Solving	-.14*	Police came for domestic disturbance	1.31*
Coping: Support Seeking	.02	Spouse ever called police on you?	1.81*
Coping: Avoidant	.35*	Tested for AIDS	1.01
Perceived Stress	.41*	Tested for STDs	1.09
Risky Sexual Behaviors	.13*		
Physical Aggression	.10*		
Alcohol Dependence	.10*		
Number of Alcoholic Drinks in Past Week	-.07		
Exercise	-.07		
Healthy Diet	-.17*		

* $p < .05$.

Testing the Process Model

Our hypothesis was that trait displaced aggression would predict perceived stress, avoidant coping, problem-solving coping, and physical aggression. Although, we

controlled for the latter two variables, in light of the pathways previously mentioned, we expected that perceived stress and avoidant coping would mediate the number of self-reported symptoms and life satisfaction. We therefore conducted SEM analyses with EQS 6.1 using robust covariance estimation and testing of parameter estimates with robust standard errors (Bentler, 2005). Fifty-five of the 827 cases contained missing data (5.9%). These cases were excluded from analysis. Prior to conducting structural analyses, we tested the measurement model to select the most reliable indicators for each latent variable (e.g., Keith, 2006). Our analytic strategy consisted of first testing our hypothesized process model and subsequently ruling out possible alternative explanations by specifying two alternative models and testing for improvement in model fit via chi-square difference tests.

Our hypothesized model was a good fit to the data (Figure 1). As is common with large samples, the overall chi-square goodness-of-fit test (Yuan & Bentler, 1998) was significant, $\chi^2(264) = 390.42, p < .001$. However, the chi-square to degrees of freedom ratio indicated good model fit, $\chi^2/df = 1.36$. Values less than 2.00 are indicative of good model fit (Ullman, 2001). In addition, fit indices revealed a good model fit, $CFI = .946, RMSEA = .038$ (95% CI = .033 to .042). CFI values in the mid .90's represent good model fit as do RMSEA values less than .06 (Ullman, 2001).

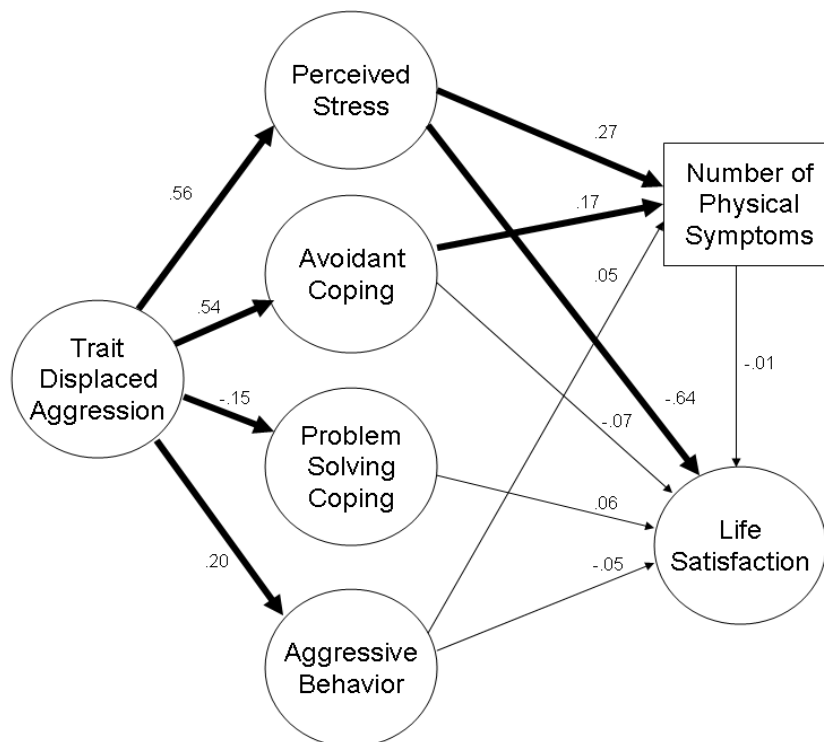


Figure 1. Model showing the mediating roles of perceived stress and avoidant coping strategies on trait displaced aggression, somatic symptoms, and life satisfaction. Latent constructs are represented by ovals while the observed variable (number of physical symptoms) is represented by a rectangle. For clarity of presentation, the measurement portion of the latent constructs has been omitted. Coefficients are standardized maximum-likelihood estimates. Bolded paths are significant ($p < .05$).

Alternative models

For the first alternative model, we tested a model in which trait displaced aggression predicted (decreased) life satisfaction, which in turn predicted the four maladaptive behaviours of interest (perceived stress, avoidant coping, less problem-solving coping, and aggressive behaviour). Although this model was an acceptable fit to the data in absolute terms, $\chi^2(267) = 409.83, p < .001, \chi^2/df = 1.53, CFI = .929, RMSEA = .043$ (95% CI = .039 to .047), a chi-square difference test revealed that our initial model was a better fit, $\Delta\chi^2(3) = 19.41, p < .001$, as did the fit indices.

A second alternative model specified that the main outcome variable was trait displaced aggression and our main independent variables were physical symptoms and life satisfaction. If our process model were shown to be a better fit to the data than such a “reversed” model, this would be indicative of strong evidence of discriminant validity in favour of our hypothesized model. As was the case with the previous model, this model demonstrated an acceptable fit in absolute terms, but a relatively poor fit compared to our original model, $\chi^2(265) = 420.73, p < .001, \chi^2/df = 1.59, CFI = .941, RMSEA = .040$ (95% CI = .035 to .044), $\Delta\chi^2(1) = 30.30, p < .001$.

Discussion

The present research was the first to demonstrate that trait displaced aggression is associated with a wide range of negative physical and mental health-relevant outcomes. Specifically, we found that trait displaced aggression was associated with increased use of avoidant coping strategies, increased perceptions of stress, an increased number of self-reported physical symptoms, decreased life satisfaction, and a number of other negative behavioural outcomes (e.g., risky sexual behaviours, physical aggression, symptoms of alcohol dependence, illegal drug use, arrests, and domestic abuse). Moreover, by comparatively testing alternative models relative to our hypothesized model, we found that avoidant coping and perceived stress mediated the links between trait displaced aggression and somatic symptoms while perceived stress mediated the link between trait displaced aggression and life satisfaction.

The role of avoidant coping is entirely consistent with our previous finding that trait displaced aggression is related to behavioural inhibition (Denson et al., 2006). The emergent picture of someone high in trait displaced aggression is an individual who does not deal effectively and immediately with a provocation. Rather, these individuals experience angry rumination and hostile thoughts of revenge. Simultaneously, they feel more stressed and engage in maladaptive coping, processes which eventually impact their health status.

Implications & conclusion

One important implication of our findings concerns domestic abuse. Given that the current data and previous research (Denson et al., 2006) implicate the role of trait displaced aggression in domestic abuse, police visits for domestic disturbance, and arrests, it is highly likely that those high on this personality dimension do indeed take their anger out on close others and therefore drive away potential supporters.

The primary limitation of our research was its reliance on correlational self-report measures. As a result, we were only able to investigate perceived physical and mental health. Although these are informative variables in their own right, the present results should not be generalized to objective physical and mental conditions. Further longitudinal research is needed to determine causal effects of trait displaced aggression on health outcomes such as premature mortality.

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