



Daily stressor, daily resilience, and daily somatization: The role of trait aggression

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ABSTRACT

The current study adopted a daily diary design to examine the impact of exposure to daily stressors, daily resilience, and trait aggression on somatic symptoms, and the moderation of aggression on the associations of exposure to daily stressors and resilience on somatic symptoms. College students completed baseline and seven-day daily assessments. The results indicated that a greater exposure to daily stressors and high levels of trait aggression predicted more daily somatic symptoms. Trait aggression moderated the influence of daily resilience on somatic symptoms, in which higher levels of resilience was associated with fewer somatic symptoms only for those with high levels of aggression but not for those with medium or low levels of aggression. The findings suggest the importance of considering daily stressor and trait aggression in screening for clinic visits for somatic symptoms. The findings also underscore the importance of aggression being a marker in prevention programs and enhancing resilience, particularly for aggressive individuals in preventing somatic symptoms.

1. Introduction

Somatic symptoms or somatization are medically unexplained symptoms including unpleasant bodily sensations (e.g., nausea) or physical dysfunctions (e.g., pains in heart/chest) in certain body parts or organs (Garralda, 2010). Somatic symptoms have been reported to be highly prevalent among clinical populations, such as individuals with post-traumatic stress disorder (Gupta, 2013), or those with chronic life stress (Gouin, Glaser, Malarkey, Beversdorf, & Kiecolt-Glaser, 2012). However, the association between stress and somatic symptoms has been less studied in the context of daily life.

Daily stressors and relevant emotional reactions (i.e., stress) are associated with a temporary increase in physical arousal and psychological distress (Almeida, Neupert, Banks, & Serido, 2005). Aggregated effects of daily stress over several days may have a lasting impact on health (Leger, Charles, Turiano, & Almeida, 2016). Research with cross-sectional and longitudinal designs have consistently shown that stress is related to mental and physical health (O'Connor, Walker, Hendrickx, Talbot, & Schaefer, 2013; Schat, Kelloway, & Desmarais, 2005) and these associations also depend on individual differences (e.g., Zunhammer, Eberle, Eichhammer, & Busch, 2013). Recently, an increasing amount of research has adopted diary methods to delineate the association of daily stressors to health and well-being. For example, a study involving clinical and college samples revealed that affective

reactivity to daily stressors prospectively predicted depressive symptoms (Cohen, Gunthert, Butler, O'Neill, & Tolpin, 2005). Another study found that increased affective reactivity to daily stressors predicted greater general affective distress and increased likelihood of reporting an affective disorder in 10 years later (Charles, Piazza, Mogle, Sliwinski, & Almeida, 2013) and heightened long-term risk of reporting a chronic physical health condition (Piazza, Charles, Sliwinski, Mogle, & Almeida, 2013). By assessing individuals' experiences in a daily setting, these findings enhanced ecological validity, reduced memory distortion, and allowed for testing within-person variations. The current study capitalized on the aforementioned benefits of a diary method and examined the influence of within- (i.e., exposure to daily stressor, daily resilience) and between-person (i.e., aggression) variables on somatic symptoms.

1.1. Resilience

Resilience captures the ability to assess a stressful situation, re-appraise negative emotions with positive ones, bounce back from stress, and promote adaptation in the midst of challenges (McRae, Ciesielski, & Gross, 2012). Research has identified the protective role of resilience on mental and physical health (De Robert, Barontini, Forcada, Carrizo, & Almada, 2010; Schure, Odden, & Goins, 2013). Individuals with higher resilience tend to exhibit greater stress resistance and more quickly turn

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to normal emotional states (Montpetit, Bergeman, Deboeck, Tiberio, & Boker, 2010). Resilience also buffers the association of childhood adversity to distress and somatic symptoms (Beutel et al., 2017). A study using mature college students (25 years or older) found that cognitive hardiness, a concept pertaining to the personality trait type of resilience, predicted less somatic symptoms among male participants after controlling for stressful life events (Beasley, Thompson, & Davidson, 2003).

The majority of research speaking to the link between resilience and health focuses on a general state of resilience. However, resilience is also referred to as the capacity of a dynamic system and regulatory flexibility that allow people adapt successfully to disturbances threatening people's ecological systems (Southwick, Bonanno, Masten, Panter-Brick, & Yehuda, 2014). This definition has a great relevance to everyday life wherein successful adaptation depends on contextual characteristics. In this area, to the author's best knowledge, only one research has examined the role of resilience in a daily context in relation to general well-being. In this study using 113 employees, it was found that daily resilience buffered the spillover effect of daily work stress from work to nonwork domains and resulted in less daily strain-based work-nonwork conflict (Martinez-Corts, Demerouti, Bakker, & Boz, 2015). Another study looked at perception of control (a resilience factor) in daily settings within a broad age range of individuals (range 18–89) and revealed that daily perception of control buffered the association of stress to negative affect (Diehl & Hay, 2010). Given the episodic nature of daily stressors, more research is needed to examine the role of resilience on somatic symptoms in a daily context.

In addition to time-varying factors, dispositional characteristics may also affect health (Hampson & Friedman, 2008) in ways that these characteristics influence the appraisal and coping of the stressors, which in turn exacerbate or alleviate distress (Leger et al., 2016; Smith, 2006). The existing research has primarily focused on personality traits such as neuroticism and extraversion (Leger et al., 2016; Mroczek & Almeida, 2004), more studies are needed to examine the role of other dispositional characteristics, such as aggression, in the association between exposure to daily stressors, resilience, and somatization.

1.2. Aggression

Trait aggression refers to an individual's predisposition to engage in verbal and physical aggression, hostile cognitions, and expression of anger (Buss & Perry, 1992). Relatedly, aggression can be perceived as a mechanism to cope with stress or serve as a defense mechanism to instigation factors (such as a threat or provocation resulted from stressors) and often involves negative emotions such as anger, hostility, and frustration (C. A. Anderson, Deuser, & DeNeve, 1995; Kruk, Halász, Meelis, & Haller, 2004; Shorey et al., 2012; Ursin & Olff, 1995; Wyckoff, 2016). These resultant emotional reactions often induce physiological arousals, such as enhanced sympathetic nervous system activation (Christie & Friedman, 2004) and increased heart rate, breathing rate, and blood pressure (Mendes, Major, McCoy, & Blascovich, 2008). These physiological reactions can have a deleterious effect on health (American Psychological Association, 2019). Although enhanced physiological responses may be transient after a stressful episode, aggressive individuals may be more prone to experiencing physical arousals and the aggregation of these negative effects may have an enduring effect on health.

People with dispositional aggression are more susceptible to negative social stimuli (Smith & Waterman, 2004; Wilkowski, Robinson, Gordon, & Troop-Gordon, 2007). The General Aggression Model (Anderson & Bushman, 2002) posits that people with a predisposition to the perception of aggression may be more likely to respond with aggression even to neutral or ambiguous events. With high levels of stress, aggressive people are more prone to negative emotional states (e.g., anger) and adopt emotion-focused coping (e.g., emotional responses to stress) strategies. In addition, emotion-focused coping may lead to

psychological dysfunction and somatic symptoms (e.g., Beasley et al., 2003; Higgins & Endler, 1995). Stress moderation models (Smith, 2006) posit that personality moderates the appraisal and coping in response to stressful events, which in turn influence physiological responses contributing to illness. In the same vein, the cognitive-affective stress response model (Wofford & Daly, 1997) states that an individual's stress propensity (an individual cognitive trait factor; such as aggression) moderates the relationships of stressors to cognitive-affective processes and experienced affective reactions. In response to stressor stimuli, individuals who possess traits indicating a strong cognitive-affective stress propensity experienced more negative cognitive-affective processes than those who do not (Wofford & Goodwin, 2002). Another study found that cognitive-affect stress propensity exacerbated the relation between experienced affective reactions and strain (Wofford, Goodwin, & Daly, 1999). Thus, people with aggressive tendency may experience pronounced negative affective reactions, which would in turn heighten the risk of somatic symptoms.

Given aggressive people prone to a stressful stimulus, the protective role of resilience is important, particularly for those with high aggression tendency. Previous studies have shown that resilience is negatively associated with anger expression in adolescents (Anderson, 2006), aggression and hostility among college students (Mojrian, Homayouni, Rahmedani, & Alizadeh, 2017), anger in military personnel (Maddi, Brow, Khoshaba, & Vaitkus, 2006), and aggression in adults being abused in childhood (Cirillo, 2000). A study found that a mindfulness-based resilience intervention reduced stress reactivity and aggression and enhanced sleep quality in law enforcement officers (Christopher et al., 2018). Therefore, it is crucial to examine the protective role of resilience in somatic symptoms in aggressive individuals who are more susceptible to stressful stimulus and thus developing somatization.

1.3. Current study

The literature has revealed (1) the association of stressors and resilience to somatic symptoms, and (2) the association between aggression and health. However, the majority of the literature focuses on life events or chronic stressors. Also, most of the studies are based on the cross-sectional or longitudinal studies (e.g., Beutel et al., 2017) in which either resilience served as a general state or proxy factors of resilience in daily settings (e.g., daily control; Diehl & Hay, 2010) were used. Also, despite a great implication of personality traits on the appraisal of stressors and relevance to health, less research has been conducted to delineate how dispositional aggression plays a role in the association between risk and protective factors and somatic symptoms in a daily setting. Building upon the literature, the current study adopted a diary method to assess daily functioning over seven consecutive days and examined (1) the association of daily stressors and resilience to somatic symptoms, and (2) the moderation of trait aggression on these associations. It was hypothesized that more daily stressors and lower resilience were associated with more somatic symptoms. It was also hypothesized that trait aggression exacerbated the negative impact of daily stressors on somatic symptoms in which the association between daily stressors and somatic symptoms was stronger among individuals with high aggression than their counterparts. Given aggressive individuals being prone to stressors and developing somatization, it was hypothesized that trait aggression attenuated the protective impact of resilience on somatic symptoms, wherein more resilience was associated with fewer somatic symptoms only for individuals with less aggression but not for those with high aggression.

Neuroticism is a personality trait often marked by increased susceptibility and emotional reaction to daily stressors (Suls & Martin, 2005). Daily diary studies have revealed its association with stress-related health concerns (Leger et al., 2016; Smith, 2006). Negative affect may impact the interpretation of health-related symptoms, which in turn affect symptom reporting (Cohen & Rodriguez, 1995; Mayne, 1999). Thus, these two variables were included to account for negative

response bias, a strategy of which was used in the literature with similar methods and research topics (e.g., [Piazza et al., 2013](#)).

2. Methods

2.1. Participants

A total of 248 ($M_{age} = 19.65$, $SD = 3.53$) college students were recruited from intro-level psychology classes in a public university at a southern state. Seventy-two percent of the participants were female. Self-reported race of the sample was 67% Caucasian, 24% African American, 9% others. The majority of the participants were freshmen (56%) or sophomore (21%). The data were collected during the spring and fall semesters of 2019. As for the family socioeconomic status, 26% of the participants reported annual family income < 30,000, 15% between 30,000 and 49,999, 22% between 50,000 and 74,999, and 37% > 75,000. All participants provided informed consent and were granted course credits for participation. The study was approved by the university institutional review board.

2.2. Procedure

Participants completed a baseline assessment, which included demographic and dispositional characteristics at a study lab. After the baseline assessment, participants also responded to the first daily assessment (see [Table 1](#) in the supplementary file). During days two to seven, participants received an email with the survey link at 6 p.m. and were asked to complete the survey by midnight. Participants were instructed to complete the survey each day between 6 p.m. and 12 a.m. to control for any potential time of day effects. The baseline assessment and the first daily assessment took approximately 30 min on site. Daily assessments took 5 min per day for six successive days after baseline via online survey administration. Participants received course credits for participation. Participants were recruited throughout the weekdays to reduce the potential influence of the day of the week.

2.3. Measures

2.3.1. Between-person independent variables

2.3.1.1. Trait aggression. Aggression was measured using the Buss-Perry Aggression Questionnaire (BPAQ; [Buss & Perry, 1992](#)), which contains 29-items comprised of four subscales: physical aggression (nine items), verbal aggression (five items), anger (seven items) and hostility (eight items). The questionnaire uses a 5-point scale (1 = *not at all like me*; 5 = *very much like me*). The BPAQ has shown good internal consistency for the total BPAQ score ($\alpha = 0.89$, [Buss & Perry, 1992](#); $\alpha = 0.87$ in the current sample). The mean score of the entire scale was used in data analysis.

2.3.1.2. Neuroticism. Neuroticism was assessed by the Neuroticism

Table 1
Correlations between the average of within-person variables across seven days and between-person variables.

	Mean (SD)	Stress	Resilience	Neg affect	SOMA	Aggression
Stress	0.72 (0.94)					
Resilience	3.75 (0.92)	0.08*				
Neg affect	1.83 (0.84)	0.16**	-0.12			
SOMA	1.23 (0.47)	0.04	-0.19**	0.34***		
Aggression	2.47 (0.61)	0.19**	-0.12	0.32***	0.19**	
Neuroticism	2.48 (0.73)	0.19**	-0.17**	0.38***	0.27***	0.24***

Note. Neg = negative; SOMA = somatic symptoms.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

scale form the Midlife Developmental Inventory Personality Scales ([Lachman & Weaver, 1997](#)). Participants responded to the stem question "Please indicate how well each of the following describes you" for the four items "moody," "worrying," "nervous," and "calm" (reversed) using a 0 (*not at all*) – 3 (*a lot*) response scale ($\alpha = 0.72$ in the current sample). The mean of the scale was used in data analysis.

2.3.2. Within-person variables

2.3.2.1. Daily stressor. Daily stressors were assessed through a semi-structured Daily Inventory of Stressful Events (DISE) ([Almeida, Wethington, & Kessler, 2002](#)). The DISE assesses the occurrence of daily stressors in various life domains (arguments or disagreements, avoided arguments and tensions, home events, work events, events occurring to the respondent's close other, and discrimination). Each day participants indicated whether they experienced each of these stressor types by answering yes (1) or no (0) to a series of forced-choice questions (e.g., Did you have an argument or disagreement with anyone today?) in the past 24 h for the first daily assessment and since the previous assessment for the rest of daily assessments. The total number of stressors was computed and used in data analysis.

2.3.2.2. Daily resilience. Daily resilience was assessed by a short version of the resilience scale to capture individuals' capacity to bounce back from difficulties and disturbances in daily life ([Martinez-Corts et al., 2015](#)). Three items of the scale were rated on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is: "Today, I got through difficult times because I've experienced difficulty before." The three-item scale demonstrates good reliability in daily surveys ([Martinez-Corts et al., 2015](#); α for the seven consecutive days ranging from 0.66 to 0.82 in the current sample). The mean score was used in data analysis.

2.3.2.3. Daily somatic symptoms. Each day participants completed the 7-item Somatization subscale of the Brief Symptom Checklist ([Derogatis, 1993](#)). Participants were asked to report how often symptoms (i.e., "faintness," "pains in heart/chest," "nausea," "trouble getting breath," "hot/cold spells," "numbness," "weakness of body") have been experienced since the previous day on a five-point Likert scale ranging from 0 (*not at all*) to 4 (*extremely*). The scale has good reliability (α ranging from 0.79 to 0.87 for seven daily assessments in the current study). The mean score was used in data analysis.

2.3.2.4. Daily negative affect. Each day, participants were asked to rate how much felt each affective state (e.g., distressed, sad) on a scale ranging from 1 (*not at all*) to 5 (*extremely*) by the Positive and Negative Affect Schedule scale ([Mackinnon et al., 1999](#)), which demonstrates good reliability in the current sample (Cronbach's α ranging from 0.77 to 0.85 over seven consecutive days). The mean score was used in data analysis.

Two time-varying variables were included. *Weekend status* was defined as 6 pm on Friday through 6 pm on Sunday and dichotomized into the weekend (1) and weekday (0). *Days* was defined as which day during the 7-day period (Day 1 = 0) ([Miranda et al., 2019](#)). In addition to neuroticism and negative affect, age, gender (men = -1, women = 1), race (minority = -1, Caucasian = 1), weekend status, and days of daily assessments were included in the data analysis as covariates.

2.4. Statistical analyses

Multilevel modeling ([Raudenbush & Bryk, 2002](#)) was used to test the relations of within-person and between-person variables and daily somatic symptoms. Within-person variables were centered on group mean, and between-person variables were centered on the grand mean ([Singer & Willett, 2003](#)). The data analyses were performed in two steps. First, unconditional models were run to examine the within- and

Table 2

Multilevel model of daily somatic symptoms from concurrent variables, aggression, and covariates.

Variables	<i>b</i>	<i>LL</i>	<i>UL</i>	<i>p</i>
Intercept	1.25	1.19	1.32	< 0.001
Time varying (within person)				
Stressor ^a	0.04	0.02	0.06	< 0.001
Resilience ^a	-0.02	-0.06	0.02	0.33
Negative affect ^a	0.09	0.05	0.14	< 0.001
Weekend	0.01	-0.03	0.05	0.58
Days	-0.01	-0.02	0.01	0.32
Time invariant (between person)				
Aggression ^b	0.07	0.00	0.14	0.05
Gender	-0.03	-0.09	0.04	0.40
Age ^b	0.00	-0.01	0.01	0.77
White	-0.01	-0.06	0.03	0.56
Neuroticism ^b	0.14	0.06	0.22	0.001
Cross-level (within × between)				
Stressor × aggression	0.03	0.00	0.06	0.02
Resilience × aggression	-0.07	-0.13	0.00	0.04

Note. *b* = unstandardized coefficients; LL = lower limit of 95% Confidence Interval; UL = upper limit of 95% Confidence Interval. Intercept r_0 : Variance = 0.10, $\chi^2 = 792.25$, $p < .001$. Slope for Days: Variance = 0.002, $\chi^2 = 386.09$, $p < .001$.

^a Person centered.

^b Grand-mean centered.

between-person variability. Second, multilevel modeling was tested on the influence of daily variables, between-person variables, and cross-level interactions on daily somatization. Third, an additional set of multilevel models with lagged predictors for somatization was conducted in order to examine whether exposure to daily stressors and resilience at the previous day (i.e., lagged) was associated with the next day's somatization. In the lagged model, concurrent predictors (i.e., predictors at the present day) were interpreted as change in that predictor relative to the previous day. However, preliminary analyses revealed that the main effect of lagged predictors or the interactions between lagged predictors and aggression were not significant (see Table 2 in the supplementary file). Thus, the results of step 3 were dropped in the further data analysis. In addition, random slopes were included in the model to account for random variation across participants in the associations between daily variables and the dependent variable, but the random slopes were not significant except the slope of *days* in all analyses and the slope of *negative affect* in the models with lagged predictors. Therefore, random slopes were not included, with the aforementioned exceptions.

Participants completed 1355 assessments over the course of the seven-day period. Overall assessment compliance was defined by the total assessments completed by all participants divided by total random assessments plus missed random assessments, and thus the overall compliance was 78%, ranging from 76% to 85% across six days (except the first day). The missingness of daily assessments was not correlated to gender ($ps > 0.25$), age ($ps > 0.18$), race ($ps > 0.06$), aggression ($ps > 0.33$), or neuroticism ($ps > 0.20$).

3. Results

Unconditional models revealed that 57% of the variance in daily somatization was between-person ($\tau_{00} = 0.12$), and 43% of the variance was within-person ($\sigma^2 = 0.09$). Thus, there was sufficient variability to justify multilevel analyses. Correlations between the mean of within-person variables across seven days, aggression, and neuroticism were explored to reveal preliminary results of the correlations between key variables and the covariates (see Table 1). The results indicated that the average level of somatic symptoms across seven days was correlated with all key ($p < .01$ for daily resilience; $p < .001$ for other) but stress ($p = .54$) predictors.

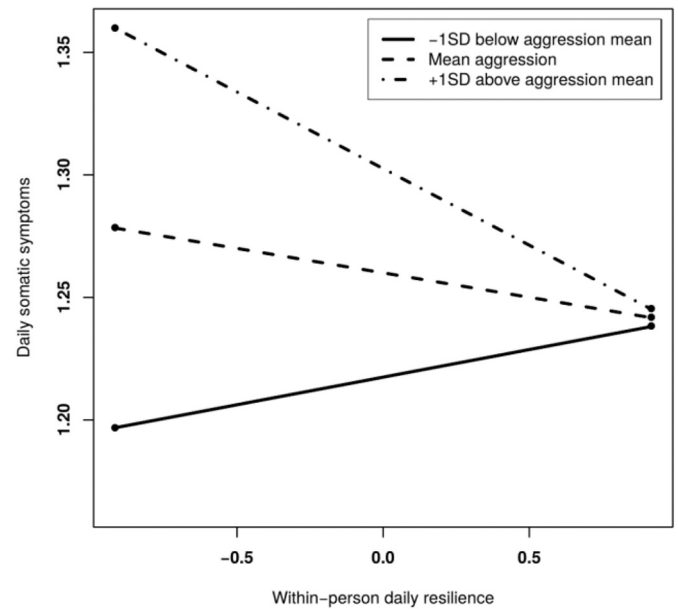


Fig. 1. Association of within-person concurrent resilience and daily somatic symptoms, moderated by between-person trait aggression. The solid line represents mean level aggression and dotted lines present 1 SD below and above the mean for aggression.

Multilevel modeling on moderation effects (see Table 2) revealed that exposure to daily stressors ($b = 0.04$, 95%CI: [0.02, 0.06], $p < 0.001$) and trait aggression ($b = 0.07$, 95%CI: [0.00, 0.014], $p = 0.05$) significantly predicted daily somatic symptoms. In addition, the interaction between daily stressor exposure and aggression ($b = 0.03$, 95% CI: [0.00, 0.06], $p = 0.02$) and the interaction between resilience and aggression were significantly associated with daily somatic symptoms ($b = -0.07$, 95% CI: [-0.13, 0.00], $p = 0.04$). Both within- and between-person covariates (i.e., negative affect and neuroticism) were significant as well.

Simple effects were examined to unpack the influence of daily resilience on somatic symptoms for low (-1SD), medium (mean) and high (+1SD) aggressive individuals (Preacher, Curran, & Bauer, 2006). The results (see Fig. 1) indicated that daily resilience was not associated with somatic symptoms for those with low ($b = 0.02$, S.E. = 0.02, $p = .30$) or medium ($b = -0.02$, S.E. = 0.02, $p = .19$) levels of trait aggression. However, for those with high trait aggression, more resilience was associated with fewer somatic symptoms, $b = -0.06$, S.E. = 0.02, $p = .002$.

4. Discussion

Using a daily diary design, the current study examined the impact of exposure to daily stressors, daily resilience, and trait aggression on daily somatic symptoms, and the moderation of aggression on the influence of daily stressor exposure and resilience on somatic symptoms. Exposure to daily stressors and trait aggression were associated with daily somatic symptoms. Trait aggression moderated the influence of resilience on somatic symptoms. Contrary to the expectation, high resilience was associated with fewer somatic symptoms only for those with high levels of aggression, whereas resilience was not related to somatic symptoms for those with medium or low levels of aggression.

The positive association between daily stressor exposure and somatic symptoms was aligned with the literature that emotional reaction to daily stressors was a risk factor to health (e.g., Piazza et al., 2013). Most of the literature focused on life events (e.g., Gouin et al., 2012; Greene & Cooke, 1980) or aggregated stressors over a specific event (e.g., academic stress; Zunhammer et al., 2013). The current findings

amounted to the limited research focusing on daily stressors and suggested that exposure to daily stressors (not necessarily reactions to daily stressors as suggested by Piazza et al., 2013) may have a negative impact on body functioning, embodied as somatic symptoms. It is also important to note that while daily stressors being a risk factor to somatization, other psychological functioning (such as, resilience) and personality traits (e.g., aggression) also play an important role in determining the risk of somatic symptoms.

The previous studies have revealed the deleterious role of trait aggression on health (Lahad, Heckbert, Koepsell, Psaty, & Patrick, 1997; Tilov, Semerdzhieva, Bakova, Tornyova, & Stoyanov, 2016) as well as somatization in specific (Smith, 2006). The current findings on the positive association between trait aggression and daily somatic symptoms indicated that trait aggression also had a significant impact on somatic symptoms in daily life. Trait aggression moderated the influence of resilience on somatic symptoms, in which high resilience was associated with fewer somatic symptoms only for those with high levels of aggression, but not for those with medium or low levels of aggression. Resilience could be deemed as a process in which adaptive systems and processes are being nurtured in the midst of challenges (Masten, 2001). Individuals with high trait aggression are more susceptible to daily stressors and, thus, have more opportunities to make an effort to adapt. Thus, aggressive individuals with high levels of resilience may be more skilled at adopting active coping strategies in response to daily stressors, which serves as a protective factor to experiencing somatic symptoms. This finding is aligned with the literature indicating that resilience helps people who are in adversity adapt more adequately (e.g., Ng, Ang, & Ho, 2012; Sirois & Hirsch, 2013). For those without high aggressive tendencies, they may not have sufficient exposure to adversity and, thus, are not inoculated from stressors. It is also possible that, for individuals with less aggressive tendencies, resilience is not a significant protector to preventing from somatic symptoms; rather other factors, such as family cohesion (Liu, Liu, & Zhao, 2017), may serve as a protective factor to somatic symptoms. Therefore, the protective role of resilience is more pronounced among aggressive individuals than non-aggressive individuals.

The findings have implications for how health practitioners could treat individuals with somatic complaints and promote health in general. Clinicians may consider including daily stressors and aggression in screening for risk factors to health. It is also vital to include coping skills for daily stressors in prevention and treatment programs to reduce problems associated with body functioning. The current study also highlights the importance of aggression being an intervention marker. Interventions (e.g., anger management therapy, cognitive-behavioral therapy) designed to address the susceptibility of negative stressors may help reduce the risk of developing somatic symptoms. In addition to programs reducing aggression, interventions that enhance resilience may be also beneficial for people with high aggression.

4.1. Limitation and future directions

There were several limitations to the current findings. Notably, the sample for this study was not representative of diverse populations. Participants were college students, primarily women in emerging adulthood in a southern state. The results may not be generalized to other populations, including members of other age groups or socioeconomic backgrounds, or those in different geographic areas. Additionally, while the daily diaries provide valuable insight into the thoughts and feelings of the individuals in a daily context, the self-reported measures of the variables bear some limitations, such as report bias and social desirability. Although seven-day assessments are sufficient for examining within-person variability, daily assessments across a longer period of time may allow for an opportunity to capture a greater within-person variability and, thus, provide more information on the role of each predictor on somatization. Even though resilience and aggression are pertaining to the appraisal of stressors, the current

study did not address the impact of stressor appraisal on somatic symptoms per se. The current study examined the composite impact of a variety of daily stressors; however, each daily stressor may have a unique yet different influence on somatic symptoms among different individuals. For example, the influence of discrimination stressors may be more pronounced among members of gender or racial minority compared to their counterparts. Such research has implications for reducing health disparities. Relatedly, although gender and race were included as covariates, the current study did not examine gender and racial differences in the hypothesized associations. Given the importance of addressing health disparities, future research may consider examining the moderation of gender and race in the association between stress, resilience, aggression, and somatic symptoms in a daily setting.

CRedit authorship contribution statement

Yang Yang: Conceptualization, Methodology, Formal analysis, Writing - original draft.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.paid.2020.110141>.

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