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THE ROLE OF HARDINESS IN THE RELATION BETWEEN PERCEIVED DAILY
DISCRIMINATION AND DEPRESSIVE SYMPTOMS IN COMMUNITY COLLEGE
STUDENTS

By

Rosamond J. Smith
B.A., North Park University, 2006
M.S., The University of Southern Mississippi, 2013

A Dissertation
Submitted to the Faculty of the
College of Education and Human Development of the University of Louisville
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for the Degree of

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A Dissertation Approved on

June 27, 2018

by the following Dissertation Committee:

Patrick Pössel, Dr. rer. soc.

Laurie “Lali” McCubbin, Ph.D.

Kate E. Snyder, Ph.D.

Theodore M. Shlechter, Ph.D.

DEDICATION

This dissertation is dedicated to my parents

Matthew Fields & Deanna Milanski

for always believing in me

to my husband

John-Pierce Smith

for always supporting me

and to my son

Grover Pierce Smith

for always inspiring me.

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ABSTRACT

THE ROLE OF HARDINESS IN THE RELATION BETWEEN PERCEIVED DAILY DISCRIMINATION AND DEPRESSIVE SYMPTOMS IN COMMUNITY COLLEGE STUDENTS

Rosamond J. Smith

June 27, 2018

In the current study, perceived daily discrimination (PDD) is conceptualized as a chronic stressor which repeatedly activates a stress response and results in depressive symptoms, per the theory of allostatic load. Psychological hardiness is explored as a potential moderator of the relation between PDD and depressive symptoms, because individuals who repeatedly demonstrate hardiness may be primed for making cognitive reappraisals of potential stressors and/or for mobilizing appropriate coping strategies, thus limiting the body's repeated stress responses and subsequent depressive symptoms. This cross-sectional survey of a diverse sample of 305 community college students included measures of hardiness (*Dispositional Resilience Scale*, DRS-15; Bartone, 1995), PDD (*Everyday Discrimination Scale*, EDS; Clark, Coleman, & Novak, 2004; Forman, Williams, & Jackson, 1997), and depressive symptoms (*Center for Epidemiological Studies Depression Scale*, CES-D; Radloff, 1977).

Per preliminary confirmatory factor analyses, two factors of PDD (i.e., overt and covert discrimination) and three factors of hardiness (i.e., commitment, control, and

challenge) were identified and used for subsequent analyses. A moderated hierarchical multiple regression model with hardiness moderating the relation between PDD and depressive symptoms was significant ($p < .01$) and accounted for 41.6% of the variance in depressive symptoms. Gender, overt PDD, and the commitment factor of hardiness were significant predictors of depressive symptoms ($p < .01$), and the interaction between overt PDD and commitment was significant as well ($p < .05$). Hypothesized polynomial relations between study variables were nonsignificant. Simple slopes analysis of the interaction effect revealed that individuals exhibiting high commitment had depressive symptoms approximately ten points lower than did individuals with low commitment when experiencing the same level of PDD.

Relations between study variables were largely as hypothesized and add to the existing literature by confirming the strengths of these associations across targeted identities for PDD. Although limitations of the study include the cross-sectional design and some potential threats to validity, the results provide initial support for building commitment (e.g., rallying social support, engaging in values-consistent behaviors) as a potential prevention and intervention strategy when working with individuals at risk of or currently experiencing PDD and associated depressive symptoms.

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INTRODUCTION

The relation between perceived daily discrimination (PDD) and negative mental health outcomes exists across groups of individuals with various target identities for discrimination (e.g., Pascoe & Smart Richman, 2009). However, research on the relation between PDD and depressive symptoms specifically occurs less frequently (e.g., Nadimpalli, James, Yu, Cothran, & Barnes, 2015), and is completely lacking for heterogeneous groups of individuals who may have experienced discrimination based on multiple target identities and their intersections. In this study, PDD is conceptualized as a chronic stressor, which is hypothesized to be a positive predictor of depressive symptoms after experiences of discrimination pile up over time (Grzywacz, Almeida, & McDonald, 2002; Hammen, 2005). The theory of allostatic load (McEwen, 1998; 2000) forms the theoretical foundation for this hypothesis. Although discrete stressors trigger physiological allostatic processes that help the body respond appropriately to perceived threats, daily stressors trigger repeated allostatic responses resulting in allostatic load, a dysregulation of physiological processes hypothesized to contribute to negative physical and mental health outcomes.

The hypothesis that PDD will predict depressive symptoms is tested in a sample of community college students, as this population is known for being more diverse (American Association of Community Colleges [AACCC], 2016; McIntosh & Rouse, 2009), and at heightened risk for depression over their university student peers (Eisenberg, Goldrick-Rab, Ketchen Lipson, & Broton, 2016). Hardiness is explored as a

potential moderator of the relation between PDD and depressive symptoms, as individuals demonstrating higher levels of hardiness tend to mobilize appropriate coping resources and/or to appraise stressors as less threatening (Kobasa, Maddi, & Kahn, 1982). Such individuals may thereby experience a stress-buffering effect (Cornum, Matthews, & Seligman, 2011), which could interrupt the pathway to depressive symptoms. As individual levels of demonstrated hardiness have already been demonstrated to be amenable to training (e.g., see Maddi, Harvey, Khoshaba, Fazel, & Resurreccion, 2009), if hardiness is found to moderate the relation between PDD and depressive symptoms, hardiness training may be considered as a potential prevention and intervention target. This study is therefore unique in that its results may be readily clinically relevant for mental health professionals and educators working with diverse groups of individuals who experience PDD and potentially associated depressive symptoms.

Discrimination

Discrimination takes place when differential treatment occurs in a manner that one or more groups experience some sort of disadvantage (Williams & Mohammed, 2013), or when behavior embodies a negative attitude, judgment, or prejudiced treatment toward a member of a certain group (Williams, Spencer, & Jackson, 1999). The groups targeted for discrimination are often perceived as an “out-group” minority (Carter, 2007), and are systemically stigmatized by majority populations (Schmitt, Branscombe, Postmes, & Garcia, 2014).

Discrimination research has commonly examined groups targeted due to their race/ethnicity, gender, age, religion, weight, ability status, sexual orientation, socioeconomic status, and more. In recent meta-analyses, Schmitt and colleagues (2014)

and Pascoe and Smart Richman (2009) found a consistent negative relation between discrimination and mental health across various target identities; effect sizes ranged from $r = -.16$ to $r = -.24$, with the largest effects appearing for minority and disadvantaged groups. Additionally, these relations remained consistent in 18 out of 19 studies which included some combination of covariates including age, gender, race, socioeconomic status (SES) or income level, educational attainment, or employment status (Pascoe & Smart Richman, 2009). Thus, it appears that the relation between discrimination and negative health outcomes is statistically significant across target identities and above and beyond the variance explained by demographic variables.

Beyond the wide range of target identities for discrimination, multiple forms of discrimination exist as well, such as acute discrimination, recent discrimination/life events, and perceived daily discrimination (PDD). Researchers have found all of these forms of discrimination to be associated with mental health concerns (see Pascoe & Smart Richman, 2009 for a review), with each form of discrimination associated with different symptom patterns. For example, acute discrimination has been linked to post-traumatic stress disorder (Williams & Williams-Morris, 2000), psychological distress, and traumatic injury, whereas recent discrimination or discrimination remembered as a life event is most commonly associated with short-term depression and anxiety (Carter, 2007). In their meta-analysis, Pascoe and Smart Richman (2009) found PDD to be negatively related to mental health outcomes, with an average point estimate of $r = -.19$. Additionally, they found no statistically significant differences in the relation between PDD and mental health due to ethnicity (comparing Asian, Black, Hispanic, Native American, and White groups) or gender. All nine of the studies in their meta-analysis

which more specifically examined the relation between PDD and depressive symptoms demonstrated a consistent positive relation (e.g., Nadimpalli et al., 2015).

Depression is one of the most prevalent mental health concerns in the United States, impacting over 16.2 million adults (i.e., 6.7% of all U.S. adults) in 2016 alone, with higher rates in females, young adults (18-25) and in people reporting two or more races (National Institute of Mental Health [NIMH], 2017). Undoubtedly, a greater understanding of a prospective predictor of this disorder may be beneficial to many. Thus, the current study will focus specifically on furthering the examination of PDD and potentially associated depressive symptoms, as assessed by a self-report measure for non-clinical samples.

In studies where the link between PDD and depressive symptoms was specifically explored, the relation has remained statistically significant across target identities, as in the larger studies on negative mental health outcomes (Pascoe & Smart Richman, 2009). For example, perceived gender-based PDD (Corning, 2002), race-related PDD against Asian Americans (Hahm, Ozonoff, Gaumont, & Sue, 2010) and Caribbean Black students (Seaton, Caldwell, Sellers, & Jackson, 2010), and religion-based PDD in the form of anti-Semitism (Gold, 2004) are all related to elevated depressive symptoms. However, the only known times that PDD has been examined as a general stressor considered across targeted identities has been in meta-analyses (e.g., Pascoe & Smart Richman, 2009; Schmitt et al., 2014). If individuals of varied and multiple target identities similarly experience the relation of PDD and depressive symptoms, this result would provide further support for the conceptualization of PDD as a stressor which may be responsive to well-known and established mental health prevention, intervention, and

treatment practices rooted in stress theory. Therefore, the present study will focus on examining whether PDD can be reliably measured in a group of individuals with heterogeneous target identities for discrimination, and exploring whether PDD is associated specifically with depressive symptoms in this heterogeneous group.

Perceived Daily Discrimination: A Stressor

Conceptualizing PDD as a stressor in the tradition of Lazarus' (1966, 1993) stress theory provides a potential framework for understanding how PDD may lead to similar stress reactions in individuals possessing a wide array of identities targeted for discrimination. In Lazarus' theory, the stress process is comprised of four main concepts: (a) a stressor, (b) a physical evaluation or cognitive appraisal of the stressor as a threat, potential harm, or challenge (Lazarus, 1966), (c) mental and/or physical coping processes to manage the demands of the stressor, and (d) a stress reaction comprised of multiple effects on the mind and body (Carter, 2007; Lazarus, 1993). PDD fits into this process as a stressor which may be appraised as a threat, harm, or challenge (Carter, 2007). Per Lazarus' theory, anyone making this cognitive appraisal would ultimately trigger a stress reaction that prepares the individual to respond to the perceived stressor of PDD.

Considering the following research on what makes a stressor particularly detrimental to mental health, PDD has the potential to affect well-being. Stressors are most influential on mental health when they are perceived to be uncontrollable (Dikerson & Kemeny, 2004), unpredictable (Williams & Mohammed, 2009), ambiguous, negative, (Taylor, 1999), inescapable, unresolvable, and humiliating (Kendler, Hettema, Butera, & Gardner, 2003), as is the experience of being discriminated against. The commonly ambiguous nature of PDD is especially problematic as it prevents the targeted individual

from being able to quickly appraise the threat level of the stressor to determine the best course of action for a coping response (Lazarus & Folkman, 1984; Williams, Neighbors, & Jackson, 2003). Additionally, encountering a stressor involving social rejection accounts for a 21.6% increase in risk of developing major depressive disorder (Kendler et al., 2003), and PDD is a chronic social rejection of a perceived outgroup.

This chronicity of PDD may also contribute to its potential as a stressor. PDD fits most closely into the “daily hassles” stressor subtype, which is defined as recurrent slights and insults directed toward someone based on their identity (Carter, 2007). For example, one daily hassle of PDD may be receiving poorer service than others at restaurants or stores. Daily hassles such as PDD are linked to higher numbers of depressive symptoms (Hammen, 2005) and poorer prognosis in treatment (Lethbridge & Allen, 2008) in comparison to acute stressors. When these daily hassle chronic stressors of PDD accumulate or “pile-up,” the consequences for mental health surpass those of more discrete stressors (Grzywacz, et al., 2002). Considering the chronic nature of this stressor, the following concept of allostatic load may help in explaining how PDD can impact depressive symptoms via repeated stress reactions on the mind and body.

Allostatic Load: A Model for Stress-Induced Depressive Symptoms

As Lazarus (1993) recognized, when the mind appraises something to be a stressor, the body responds with a stress response which prepares the body to adequately manage the threat. This stress response, called allostasis, would likely include an increase in glucocorticoids (e.g., cortisol) and catecholamines (e.g., dopamine, epinephrine, and norepinephrine); increased negative emotion; and increases in heart rate, breathing rate, and blood pressure, among other biological processes (McEwen, 1998); all of which have

a protective effect in the short term (McEwen, 2000). However, when someone is repeatedly exposed to stressors and is unable to adequately cope or habituate, the chronicity of exposure results in a perpetual overactivity and dysregulation of allostatic and related systems, causing allostatic load. Allostatic load is the wear and tear on the body and mind due to this chronic overactivity of allostatic systems, and it has been hypothesized to cause numerous negative physical and mental health outcomes (McEwen, 1998). The purpose of explaining allostatic load, although it is not measured in this study, is to demonstrate the potential biological effects triggered by a chronic stressor such as PDD.

Considering that this process of allostatic load forms the theoretical foundation for the present study's hypotheses regarding the relation between PDD and depressive symptoms, some of the biological pathways affected by allostatic load which are theorized to lead specifically to depressive symptoms follow. Allostatic load results in atrophy of the hippocampus (McEwen, 2000) and prefrontal cortex (Drevets et al., 1997), an overactive amygdala, and dysregulated glucocorticoids and catecholamines (McEwen, 2000). An atrophied hippocampus is associated with depressed moods and a tendency to experience learned helplessness in situations of repeated exposure to negative stimuli (Drevets et al., 1997), and an atrophied prefrontal cortex is associated with disturbances in emotional behavior and cognitive performance (Drevets, Price, & Furey, 2008). An overactive amygdala has been linked to pathological dysphoria, social withdrawal, decreased goal-directed behavior, and visceral reactions to emotional stimuli. Dysregulation and sustained increases of glucocorticoids such as cortisol affect brain systems involved in neurovegetative functions such as sleep, appetite, energy, and libido;

dysregulated catecholamines in dopaminergic and noradrenergic systems are also associated with loss of pleasure, amotivation, and psychomotor slowing (Drevets et al., 2008). Overall, stressor-induced allostatic load clearly affects multiple biological systems responsible for a wide range of depressive symptoms such as those measured in the current study (e.g., poor appetite, restless sleep, poor energy, amotivation), and provides evidence of the “pile-up” effect of stressors whereby repeated stressors have a greater impact on mental health than do more discrete stressors (Grzywacz, et al., 2002).

Some evidence already exists supporting the conceptualization of PDD as a stressor which could contribute to allostatic load. Researchers have found discrimination triggers stress responses as the body prepares to react to a stressful interpersonal situation (e.g., Clark, Anderson, Clark, & Williams, 1999; Guyll, Matthews, & Bromberger, 2001). Furthermore, Dickerson and Kemeny (2004) found in a meta-analysis of 208 laboratory studies that stressors like discrimination that are both relatively uncontrollable and have a strong threat to one’s social evaluation trigger the largest cortisol stress responses. Therefore, it seems plausible that for individuals of specific and intersecting identities targeted for discrimination, when such discrimination occurs on a chronic/daily basis (i.e., PDD), it may act as a chronic stressor on the body and produce allostatic load (Seeman, Singer, Rowe, Horwitz, & McEwen, 1997), eventually leading to depressive symptoms. Determining that this process is similar for individuals across multiple identities experiencing PDD would allow for broader prevention and intervention programs for depression that may efficiently treat a wide variety of diverse individuals.

Moderators of the Relation Between Perceived Discrimination and Mental Health

Researchers thus far have demonstrated a consistent relation between PDD and

negative mental health outcomes including depression. However, in considering Lazarus' (1993) stress theory and McEwen's (1998) allostatic load theory, it appears as though the relation could be altered between the presentation of the stressor and the initiation of the stress response. Theoretically, if an individual does not cognitively appraise PDD to be a particularly threatening stressor, or copes with PDD effectively, the stress response may be small in magnitude (Lazarus, 1993). In either case, smaller stress responses may trigger allostasis, but not allostatic load (McEwen, 1998); thus, few to no corresponding depressive symptoms would be expected.

In early years of stress theory, Robert Hooke used a metaphor regarding differences in the elasticity of metals in order to explain human differences in stress responses (Lazarus, 1993). As iron may be brittle and easily broken when cast, but malleable and bent without breaking when wrought, Hooke recognized that some resilience factor(s) must be moderating the relation between the stressor of forcibly bending the metal and the stress response of flexibly bending versus breaking. Likewise, individual differences in resilience can moderate the relation between the stressor and a human stress response. Common resilience factors in the research on stress processes focus on coping styles, individual personality variables, and social support; thus it is not surprising that these factors have also been studied as moderators of the relation between the stressor of PDD and negative mental health. As with the research on PDD in general, few researchers have examined moderators of the relation between PDD and depressive symptoms specifically; a brief review of such studies follows.

Research on coping style (e.g., Bianchi, Zea, Poppen, Reisen, & Echeverry, 2004) and strength of oppressed populations' ethnic identities (e.g., Mossakowski, 2003; Noh,

Beiser, Kaspar, Hou, & Rummens, 1999), as moderators of the relation between PDD and negative mental health have both had mixed results, in many instances showing null results (Pascoe & Smart Richman, 2009). An identity including a strong identification with one's stigmatized group (e.g., race, gender, sexual orientation) sometimes had a buffering effect on the impact of PDD on depressive symptoms (e.g., Mossakowski, 2003). Surprisingly, at other times the group identification exacerbated depressive symptoms instead, potentially due to the salience of the ethnic identification increasing the propensity for recalling or perceiving PDD (e.g., Noh et al., 1999). Multiple researchers have also examined social support as a moderator of PDD and mental health, again with mixed results leaning in favor of the conclusion that social support does not affect the relation (Pascoe & Smart Richman, 2009). In a meta-analysis of over 100 studies, none of these common moderators from the body of research on stress processes were found to consistently moderate the relation between PDD and mental health outcomes (Pascoe & Smart Richman, 2009).

The relation between PDD and poor mental health is pervasive across target identities, and eradicating PDD altogether is unfortunately a seemingly insurmountable goal. So, it is understandable why so many researchers have sought a moderator of the relation between PDD and mental health (e.g., Mossakowski, 2003; Noh et al., 1999; Noh & Kaspar, 2003). Finding a moderator amenable to intervention may be an efficient way for mental health providers to make a difference in the discrimination-related depressive symptoms of oppressed populations. Researchers of stress processes commonly look to variables affecting cognitive appraisal to moderate the relation between stressors and the person's stress response (Cohen, 2000). If a moderator could change the way the chronic

stressor of PDD is cognitively appraised such that the physical and psychological stress responses are interrupted or lessened, it may prevent the transition from allostasis to allostatic load, thus preventing or limiting the development of depressive symptoms (Carter, 2007). There is a large gap in the research on PDD and negative mental health outcomes as very few studies have been conducted on potential cognitive moderators. However, a few recent studies examining the relation between PDD and depressive symptoms in particular have explored hardiness as a potential moderator, and this individual resilience factor which affects both coping and cognitive appraisals has great promise in this role.

Hardiness

Hardiness has been identified as a pathway to resilience that buffers against extreme stress in a number of studies (e.g., Bartone, 1999; Bonanno, 2004). It can be thought of as a psychological style that is conducive to forming resilient responses to challenging situations (Bartone, 1999). Hardiness is operationally defined by the “three C’s”, important domains of the cognitive style repeatedly demonstrated by individuals: commitment, control, and challenge. Commitment is encompassed by one’s view of the world as interesting and meaningful, with persistent investment in daily tasks and relationships, as opposed to becoming isolated, alienated, or behaviorally stagnant. Control is defined by a belief in one’s own power to enact change and manage one’s own reactions and responses, rather than feeling that they are powerless in challenging situations. Challenge is the tendency to view life’s difficulties as opportunities for growth rather than threats (Kobasa, 1979; Maddi, 2004). An individual who regularly expresses a hardy style would be very involved with and dedicated to the people and activities in

their lives, believe in their power to affect change, and look forward to the personal growth that comes with facing new difficulties (Kobasa et al., 1982).

Hardiness and Other Resilience-Related Constructs

As the literature is littered with other constructs related to building resilience, what makes hardiness different? In an interview on the importance of grit, the construct's creator, Duckworth, describes the construct as a combination of responding to adversity with mental toughness and remaining loyal to passions (Perkins-Gough, 2013), thereby overlapping most with the hardiness domain of commitment. The difference lies in that a person demonstrating grit focuses on the behavior of persevering through adversity, while a person demonstrating hardiness focuses on assessing the adversity in order to muster the most helpful coping skills and social support (Maddi, 2005). Buoyancy is a construct defined as one's ability to manage failures and adversity with success (Martin & Marsh, 2008), which even has 'C's' of its own: confidence, coordination, commitment, composure, and control (Martin, Colmar, Davey, & Marsh, 2010). Although there is a great deal of overlap here with hardiness, buoyancy has been studied exclusively in the academic realm, and therefore does not have any research to show whether its impact may extend to non-academic stressors. Cognitive or psychological flexibility is widely researched under a multitude of different names and definitions. Across studies, this construct appears to be best demonstrated by individuals who repeatedly adapt to changes in their environments, differentially tap mental resources as needed, reappraise situations when warranted, and balance the competing values and needs in their lives (Kashdan, 2010). Hardiness is likely most similar to this construct within the wide resilience literature, but hardiness improves upon the flexibility construct by being consistently

defined and adding courage and commitment to act on the cognitive exercises of flexibility. Overall, hardiness is unique because of the three C's and how they all work together through hardy attitudes and actions to produce resilient outcomes for those individuals repeatedly exhibiting all domains (Maddi, 2005).

However, because each of the three C's can be measured and analyzed as independent constructs with more recent measures of hardiness (e.g., Bartone, 1995), some researchers have argued that the domains of hardiness are differentially predictive of positive outcomes, and that looking only at an overall assessment of hardiness results in missing out on potential pathways of resilience (Sinclair & Tetrick, 2000). Other researchers have argued that, per theory, the construct of hardiness is more than the sum of its parts and should not be broken apart for research (e.g., Ouellette, 1993). Indeed, someone who demonstrates high levels of hardiness does not express any one component alone, but rather the true benefits of the construct appear in individuals who repeatedly exhibit all three (Maddi, 2002; Orr & Westman, 1990). For example, Maddi (2002) describes individuals who are only high on the control domain; these people may feel driven to determine their own destinies, but they would want to do so the "easy way" without persevering through difficulties, focusing on small daily tasks, or cultivating relations with others. They may be easily frustrated, irritated, and isolated from others. In contrast, the amalgamation of all three components working in concert affects the way individuals demonstrating high hardiness levels think about the world while possibly providing them the motivation to meet challenging situations (Palyo, 2008). Even in highly stressful situations, individuals exhibiting high levels of hardiness think more positively about themselves and their ability to perform (Allred & Smith, 1989). Due to

the conflicting views over measuring hardiness as one unified measure or as its three components, the current study will use factor analyses of the hardiness measure (Dispositional Resilience Scale; DRS-15, Bartone, 1995) to determine which structure is the best fit with this study's sample, and will then use the resulting scale(s) for subsequent analyses.

Hardiness, Stress, and Mental Health

Individuals who express high levels of hardiness have been found to adapt well to challenging situations, while remaining resistant to the negative effects of stress (see Eschleman, Bowling, & Alarcon, 2010 for a review). Some of the first studies on hardiness were focused on exploring its utility in predicting resistance to physical and mental illness after exposure to stressors (Kobasa, 1979). Kobasa and her colleagues carried out a 12-year longitudinal study that found that people exhibiting high levels of hardiness were less likely to come down with an illness, including depressive symptoms, when exposed to extreme stressors. Additionally, this team of researchers found that hardiness was associated with a specific cognitive style, in which stressful situations are reappraised as meaningful events which are manageable and acceptable to the person (Kobasa et al., 1982). Multiple researchers since have found that individuals demonstrating high levels of hardiness better endure stressors due to the tendency toward cognitive positivity and confidence regarding their ability to cope with challenges (e.g., Allred & Smith, 1989; Delahajj, Gaillard, & van Dam, 2010; Orr & Westman, 1990). Hardiness often acts as a stress buffer against the development of mental illnesses (Cornum et al., 2011), even during intensely challenging life events, such as while serving in the United States military (Bartone, Ursano, Wright, & Ingraham, 1989; Britt,

Adler, & Bartone, 2001; Delahaij et al., 2010) or when providing disaster support (Hodgkinson & Shepherd, 1994).

In a meta-analysis of hardiness studies composed of 180 samples, Eschleman et al. (2010) found the global construct of hardiness to (a) positively predict mental health, and (b) moderate the relation between life stressors and mental health. In 187 non-traditionally aged university students, high expressions of cognitive hardiness were associated with better mental health ratings independent of reported levels of life stressors (Beasley, Thompson, & Davidson, 2003). Overall, research that has focused specifically on depression and depressive symptoms has demonstrated an inverse relation with hardiness (e.g., Gito, Ihara, & Ogata, 2013). Therefore, in the current study, hardiness will be examined as a moderator of the relation between PDD and depressive symptoms, and directly as a negative predictor of depressive symptoms independent of PDD.

Hardiness and Discrimination

Hardiness has been a buffer of multiple stressors for various populations (e.g., Beasley et al., 2002; Kobasa et al., 1982). As individuals exhibiting high hardiness view stressful circumstances as less threatening and manageable while viewing themselves as capable to cope (Bartone, 1999), it follows that someone demonstrating high levels of hardiness might be able to manage the stressful situation of PDD with little resulting depressive symptoms. The cognitive appraisal of a stressor as threatening triggers the stress process (Lazarus, 1993), and perceived control in situations of chronic stress modulates physiological stress responses (Dickerson & Kemeny, 2004). Thus a person who exhibits the control and challenge components of hardiness may be able to perceive

the stressor of PDD in a way that seems less uncontrollable or threatening, thereby preventing the stress responses that feed into allostatic load, and disrupting the pathway to depression before it begins. The commitment component of hardiness may further impact the pathway as a person demonstrating it is likely to build up social support and other coping resources through intentional and meaningful engagement in life. An individual exhibiting all three C's would benefit from the amalgamation of hardiness, positively impacting all aspects of the stress response.

As these cognitive, emotional, and behavioral qualities of hardiness are repeatedly demonstrated over time and across situations (Bartone, 2008), they give the appearance of trait hardiness. However, at its core, hardiness is a psychological style that can change with social and environmental factors (Maddi et al., 2009). Indeed, individuals can be trained to be hardy. Khoshaba and Maddi (1999) have already created a Hardi-Training program which focuses on teaching hardy ways of thinking, and Maddi et al. (2009) have found the training to have statistically significant and lasting impact in a large sample of undergraduate college students. As hardiness is amenable to such training, if it moderates the relation between PDD and depression, it would be a favorable target for intervention.

Altogether, the benefits of hardiness as a potential moderator of the relation between PDD and mental health appear likely. However, very few researchers have tested the hypothesis that hardiness may play a role in the relation between PDD and mental health in general, even fewer have looked at depressive symptoms or depression specifically (e.g., Nadimpalli et al., 2015), and none have examined this relation in a sample of heterogeneous identities that may be targets of discrimination.

Based on the conceptualization of PDD (Carter, 2007; Lazarus, 1993), and the

theory of allostatic load (McEwen, 1998), hardiness is a promising moderator that has yet to be studied in this manner in a heterogeneous population. In order to see whether PDD can be measured as a general stressor across various and multiple target identities, whether it predicts depressive symptoms in those individuals, and whether hardiness may moderate the relation, a diverse sample vulnerable to discrimination and depression is needed.

The negative relation between PDD and mental health has had significantly larger effect sizes for disadvantaged, oppressed, minority groups in comparison to advantaged majority groups in the United States (Schmitt et al., 2014). A statistically significant relation between PDD and depressive symptoms was significant only in minority ethnic groups in a recent European study (Ikram et al., 2014), and non-White/European American employees experienced more discrimination than did their White/European American counterparts in a similar American study (Bond, Punnett, Pyle, Cazeca, & Cooperman, 2004). Because disadvantaged minorities experience more PDD and associated depressive symptoms, research on potential moderators that may help prevent, intervene in, or alleviate depressive symptoms associated with heightened levels of PDD is needed. A diverse and heterogeneous sample of individuals with various and multiple minority identities will be used in the current study in order to better understand whether PDD acts as a general stressor across multiple identities, affecting their mental health in similar manners. Community college students were identified as an appropriate population from which to draw this sample due both to their diversity (McIntosh & Rouse, 2009) and their high rates of depression (Eisenberg et al., 2016). Not only were they an appropriate sample to answer study questions, but they were a group for whom

the research results may have important clinical implications.

Community College Students

The number of students enrolled in two-year community and technical colleges has consistently and quickly grown over the past decade. Most recently, total enrollment was estimated at 12.3 million, with almost half of all undergraduates in the United States attending community colleges (AACC, 2016). These community college students are very diverse. In comparison to their counterparts at four year colleges and universities, they are more likely to be in school part time, to have a lower socioeconomic status (SES), to be older, and to be of racial or ethnic minority descent (McIntosh & Rouse, 2009). Of all community college students enrolled for credit, 36% are in their family's first generation to attend college, 17% are single parents, 7% are non-U.S. citizens, 4% are Veterans, and 12% have reported disabilities (AACC, 2016).

Community college students are also at marked risk of depression. Eisenberg and colleagues (2016) conducted a nationwide online survey and found that 36% of the students from two-year colleges reported depression in comparison to only 24% of the four-year college students. Furthermore, 20% of the community college students reported severe depression, in comparison to only 10% of the four-year students. In a sample of post-secondary institutions including both two-year and four-year colleges, 31.3% of students reported feeling so depressed it was difficult to function sometime within the last twelve months, and 12.6% of participants noted that their depression interfered with their academics (American College Health Association [ACHA], 2013). In a similar sample, life stressors in general were positively correlated with drop-out rates (Cox, Reason, Nix, & Gillman, 2016). With the high rates of depression in the community college student

population, the current study is therefore very important for community college educators and mental health providers alike in order to better understand and potentially intervene in this group's mental health. Additionally, research on PDD and depressive symptoms has been conducted in samples with more homogenous minority identities, but has yet to be conducted with a heterogeneous sample of individuals with various and intersecting identities. Thus, the current study's diverse sample of community college students is ideal in terms of diversity and need.

Current Study

Community college students are extremely diverse (AACC, 2016; McIntosh & Rouse, 2009), and many likely experience PDD due to their multiple varied and intersecting stigmatized identities. These students are also at higher risk for depression in comparison to their peers at four-year universities (Eisenberg et al., 2016), but the potential connection between PDD and depressive symptoms in community college students has never been studied. Thus, the purpose of the current study is to focus solely on community college students as a diverse, heterogeneous sample, to examine PDD as a general stressor that affects individuals with various and multiple identities in a similar way, via a cross-sectional design. As PDD has been associated with similar outcomes across varied and multiple target identities (Schmitt et al., 2014) and could therefore be conceptualized as a stressor for any individual via stress theory (Lazarus, 1993) and allostatic load theory (McEwen, 1998), it is hypothesized that the Everyday Discrimination Scale (EDS; Clark, Coleman, & Novak, 2004; Forman, Williams, & Jackson, 1997) will assess PDD as a unitary type of stressor in this study's heterogeneous sample, across targeted identities.

This study will examine the relation between PDD and depressive symptoms to address the question of whether PDD may predict the levels of depressive symptoms in community college students. As previous research has found the relation between PDD and negative mental health outcomes to remain statistically significant above and beyond variance accounted for by demographic variables (Pascoe & Smart Richman, 2009), it is hypothesized that higher reported levels of PDD will account for additional variance in total depressive symptoms above and beyond that accounted for by demographic variables in this study's sample as well. As PDD is being conceptualized as a chronic daily stressor that may lead to depression after a pile up of these stressors triggers allostatic load (McEwen, 1998), it is hypothesized that a curvilinear relation exists between PDD and depressive symptoms, with depressive symptoms occurring and increasing after a chronic build-up of PDD. Other researchers have similarly hypothesized that the relation between PDD and mental health may increase exponentially as perceptions of discrimination increase or are compounded chronically over time (e.g., Gee, Spencer, Chen, Yip, & Takeuchi, 2007; Kessler et al., 1999). However, as all known previous literature has demonstrated a linear relation between PDD and mental health outcomes (for a review, see Schmitt et al., 2014), and the relation between PDD and depressive symptoms after allostatic load occurs may still be best modeled in a linear relation, a linear model will also be tested.

Based on stress theory (Lazarus, 1993) and allostatic load theory (McEwen, 1998), a moderator of the relation between the stressor of PDD and the repeated stress response that leads to depressive symptoms could include a cognitive reappraisal of the stressor with the goal of limiting the stress response (Carter, 2007; Cohen, 2000).

Individuals who demonstrate high levels of hardiness may have a cognitive style primed for such a cognitive reappraisal (Kobasa et al., 1982). Although hardiness researchers have argued over whether the overall construct should be studied as a whole (Ouellette, 1993) or broken apart into domains for research (Sinclair & Tetrick, 2000), hardiness theory supports the idea that the whole of hardiness is greater than the sum of its domains (Maddi, 2002). Therefore, it is hypothesized that the Dispositional Resilience Scale (DRS-15; Bartone, 1995) will assess a unitary construct of hardiness in this sample. Then, the potential role of hardiness as a moderator of the relation between PDD and depressive symptoms will be explored in order to determine whether hardiness training may be a conceivable tool for mental health professionals to prevent, intervene, or alleviate depressive symptoms associated with PDD and other stressors. Because researchers have previously found that hardiness can act as both a direct predictor of depressive symptoms (Gito et al., 2013) and as a moderator of the relation between stressors and depressive symptoms (Eschleman, et al., 2010), it is hypothesized that reported levels of hardiness will account for additional variance in total depressive symptoms above and beyond that accounted for by demographic variables, and that students' reported hardiness levels will moderate the relation between PDD and reported depressive symptoms.

As previously noted, since PDD is unlikely to be readily eliminated through mental health interventions, the potential of discovering a moderator of the relation between PDD and depressive symptoms that is amenable to intervention could be important. Mental health providers and educators working with large groups of diverse and oppressed groups vulnerable to depression may be able to efficiently offer training in

hardiness for both prevention and intervention efforts with the possibility of making a large impact on discrimination-related depressive symptoms.

METHOD

Participants

Participants were students at a Midwestern community and technical college. Twenty professors of the Introductory Psychology course across three campuses were invited to open their classes for their students to participate; six professors agreed, for a total of 15 out of 48 classes participating. Since the professors' response rates varied greatly between the fall (50%) and spring (12.5%) when data were collected, demographic variables were tallied separately for each semester to determine any statistically significant differences in study samples, of which there were none. Thus, the response rate did not appear to impact the outcome, and no apparent differences between participating professors or classes were noted; therefore, the entire sample was used for subsequent analyses.

As the Introductory Psychology course is a general education requirement at the community college where data was collected, this course was targeted for recruitment as the students enrolled would likely provide a representative sample of this college's population. Each class had between 25 and 35 students enrolled; professors told the students beforehand which day data collection would occur so students could choose whether to attend. Of the 327 students who attended, 326 provided consent and chose to continue on with the study. In order to determine the required sample size for the statistical analyses, recommendations made by Tabachnick and Fidell (2007) were followed. Using the equation $N > 50 + 8m$, where m is the number of predictors in a

multiple regression, the study would require a sample size of at least 242 if the potential maximum number of 24 predictors were used (2 subscales of PDD \times 3 subscales of hardiness \times 4 potential demographic variables of note). As confirmatory factor analyses (CFAs) would also be conducted, Stevens (2009) suggests at least 15 participants per indicator variable be recruited. As the largest number of indicator variables in any one CFA would be 15, 225 participants is the standard minimum. Therefore, the recruited sample met requirements for the proposed statistical analyses.

The initial sample included 326 students who completed study measures. After data cleaning, the final sample included 305 students between the ages of 18 and 63 ($M = 24.31$, $SD = 7.97$), with 41.3% self-identifying as male ($n = 126$), 58.7% as female ($n = 179$), and 0% as transgender or other. Regarding self-identification of race/ethnicity, the majority (50.8%) identified as White/European American; not Hispanic or Latinx ($n = 155$). The next largest group (29.8%) identified as Black/African American ($n = 91$), then (9.8%) identified as Hispanic or Latinx ($n = 30$), (3.3%) as Asian or Asian American ($n = 10$), (0.3%) as American Indian/Native American ($n = 1$), (2.0%) as “Other” ($n = 6$), and (3.9%) identified as two or more races/ethnicities ($n = 12$). Self-reported current annual household income ranged from: below \$10,000 (14.7%); \$10,000-\$19,999 (10.1%); \$20,000-\$29,999 (18.6%); \$30,000-\$39,999 (9.4%); \$40,000-49,999 (7.5%); \$50,000-\$64,999 (7.5%); \$65,000-\$79,999 (6.2%); \$80,000-\$99,999 (7.5%); over \$100,000 (10.4%); the remaining 8.1% reported their income as “Other” or chose not to report. Participants reported an average of 3.57 ($SD = 1.9$) individuals living in their home. Regarding employment status, 16.7% stated they were not currently employed, 54.1% were employed part-time, and 29.2% reported full-time employment. When asked about

their plans for remaining enrolled in community college, 90.0% planned to return to their current school in the next semester, with 5.5% stating they would not return, and 4.5% being unsure.

In comparing this sample to national statistics from community colleges collected just three years prior to the data collected for the current study (National Center for Educational Statistics [NCES], 2012), the samples appeared to be similar in terms of gender, age, and race, except that the study sample had larger Black/African American student representation and smaller Hispanic or Latinx representation. The study sample also had fewer students reporting being unemployed, and more students working part-time (national sample: 31% unemployed, 36% part-time, 33% full-time). As the current study's sample was primarily drawn from a downtown campus in a mid-sized city, it is possible that these variations from national demographic data are due to the mainly urban setting.

Measures

Participants completed a basic demographic form including their date of birth, race/ethnicity, native language, gender, employment status, number of people living in their household, household income, and plans to remain enrolled in college.

The *Everyday Discrimination Scale* (EDS; Clark et al., 2004; Forman et al., 1997) was used to measure PDD. The EDS is a 10-item self-report measure which assesses common perceptions of discriminatory experiences against the self on a daily basis (Williams, Yu, Jackson, & Anderson, 1997). Following the conceptualization of discrimination as a stressor, PDD fits within this view; it is commonly measured via assessments of discrimination experienced on an “everyday” basis, with participants

rating how frequently they experience common instances of PDD.

The EDS scale was designed to consistently measure experiences of PDD for multiple demographic characteristics (e.g., age, gender, race, etc.), without reference to racism, discrimination, ageism, or prejudice (Williams et al., 1997). Participants report how often the listed experiences of PDD happen to them in their day-to-day life. Sample items from this measure include “You received poorer service than other people at restaurants or stores,” and “You are treated with less respect than other people.”

Participants rated the frequency of nine perceived discriminatory experiences on a 6 point Likert-type scale: (1) *Almost Everyday*, (2) *At Least Once a Week*, (3) *A Few Times a Month*, (4) *A Few Times a Year*, (5) *Less Than Once a Year*, (6) *Never*. Total scores were calculated by reverse scoring and summing all scores, and could therefore range from 9-54. Higher scores are indicative of more frequently experienced PDD. Various methods of scoring have been used for the EDS, however the simple summing of all items was chosen for this study in order to allow for the greatest variation in responses. Missing items were addressed via a thorough data cleaning process and multiple imputation, detailed in analyses.

The EDS has been commonly used with a large variety of racial groups (e.g., Gee, Ro, Shariff-Marco, & Chae, 2009; Nadimpalli & Hutchinson, 2012; Paradies et al., 2015), offering further support for its use in a diverse and heterogeneous sample. The measure had a single-factor structure with a Black/African American sample (Krieger, Smith, Naishadham, Hartman, & Barbeau, 2005; Williams et al., 1997) which has held for other racial/ethnic groups in general (e.g., non-Hispanic White, Hispanic/Latino, Asian). The measure is generally considered a single-factor structure, although one item

(Item 7: “People act as if they’re better than you are”) has been a poorer fit for Hispanic or Latinx and Asian participants (Kim, Sellborn, & Ford, 2014). Some racial/ethnic groups also respond to items regarding discrimination in public settings in different ways (e.g., Janevic et al., 2015). Similarly, in studies done with Chinese Americans (Chan, Tran, & Nguyen, 2012), Native Hawaiians (McCubbin & Antonio, 2012), and Asian Americans living in Hawaii (McCubbin, Visalli, & Kuo, in preparation), the EDS’s factor structure has broken down into overt and covert discrimination; however, the EDS maintains a single factor structure with Vietnamese Americans (Chan et al., 2012).

As the racial/ethnic make-up of this study sample is heterogeneous unlike in most previous studies, it is unclear whether using the EDS as a unidimensional measure of PDD is appropriate; thus, a factor analysis will be run to determine whether the measure assesses PDD as a unitary construct in a heterogeneous sample prior to moving forward with other analyses. In a validation study (Clark et al., 2004) on a sample of 120 Black/African American adolescents, researchers reported sound reliability with a Cronbach’s $\alpha = .87$, and split-half reliability of 0.83. As Cronbach’s alphas of .70 to .90 are generally considered to be within acceptable ranges of reliability, with higher alphas denoting greater internal consistency of study items (Tavakol & Dennick, 2011), in the current study’s sample, Cronbach’s alpha was considered strong at $\alpha = .88$ for the total EDS. Cronbach’s α for the factor of covert PDD was .84, or $\alpha = .90$ when the Spearman-Brown calculation (Brown, 1910; Spearman, 1910) was used to statistically determine what the alpha level would be if the covert PDD factor had an equivalent number of study items to the overall EDS measure (9 items). Cronbach’s alpha for the factor of overt PDD was .78, or $\alpha = .89$ with the Spearman-Brown calculation.

The *Center for Epidemiological Studies Depression Scale* (CES-D; Radloff, 1977) is a 20-item self-report measure that assesses depressive symptoms experienced within the previous week for non-clinical populations. The CES-D is short and easy to read, with each item on the CES-D listing a depressive symptom to be rated on frequency of occurrence ranging from (0) *rarely or none of the time* to (3) *most or all of the time*. Example items include: “During the past week, there were things that upset me that usually do not upset me,” and “During the past week, I had crying spells.” The total score is calculated by reverse scoring positively worded items such as (Item 4: “During the past week, I felt that I was just as good as other people.”), then summing all item scores, and can range from 0 to 60. Higher scores indicate higher levels of depressive symptoms, with a score of 16 generally used as the cut-off; scores at or above 16 indicate endorsement of clinically significant depressive symptoms. The CES-D demonstrates strong reported internal consistency, with Cronbach’s alphas ranging from $\alpha = .88-.91$ (LaChapelle & Alfano, 2005). In the current study, Cronbach’s $\alpha = .90$.

The *Dispositional Resilience Scale – 15, Version 3* (DRS-15; Bartone, 1995) was used to assess levels of individual hardiness. The DRS-15 is a 15-item instrument that measures the components of an individual’s self-reported level of hardiness: commitment, control, and challenge (Britt et al., 2001). It contains three subscales of five items each, which are summed to create a total hardiness score. All items are rated on a 4-point Likert scale ranging from (0) *not at all true* to (3) *completely true*, with both positively and negatively scored items, such as “By working hard you can nearly always achieve your goals,” and “It bothers me when my daily routine gets interrupted” (Bartone, 1991). Total scores can range from 0 to 45 with higher scores indicating high

hardiness. Bartone (1995) reported the Cronbach's alpha for the total measure to be acceptable, at $\alpha = .83$ in a large sample of young men and women in the Army reserves.

Although the DRS-15 has undergone multiple revisions with the hopes of addressing issues of inconsistent measurement, it is still common to have variations in factor structure between the three subcomponents and one overarching construct based on the sample using the measures (e.g., Kardum, Hudek-Knezevic, & Krapic, 2012; Wong et al., 2014). Thus, in the current study, the factor structure of the DRS-15 will be assessed with the study sample prior to completing additional statistical analyses. In the current study's final sample after data cleaning, Cronbach's alpha was acceptable at .74 for the total DRS-15. Cronbach's α for the factor of control was .67, rising to $\alpha = .86$ when the Spearman-Brown calculation was used to determine a comparable alpha if the commitment factor had an equivalent number of study items to the overall DRS-15 measure (15 items). Cronbach's alpha for the factor of challenge was also .67, increasing to $\alpha = .86$ with the Spearman-Brown calculation. Lastly, the factor of commitment had a Cronbach's alpha of .73, which increased to $\alpha = .89$ with the Spearman-Brown calculation. Overall, the three factors' reliabilities were improvements over the reliability of the composite DRS-15 measure.

Procedure

In order to investigate the study's hypotheses, a non-experimental cross-sectional correlational survey was conducted to examine associations between study variables. Data were collected at a public Midwestern community and technical college at two campuses, one urban and one rural. The surveys were administered during normal class periods via pencil and paper as part of a larger study. The survey packet included an

informed consent form, demographic questionnaire, and the CES-D, EDS, and DRS-15. The order of the study measures was counterbalanced to minimize order effects, but the demographic questionnaire was always given first, as researchers recorded study variables on this page during survey administration; putting the demographic questionnaire first ensured quick and easy access, causing as little disruption to the study participants as possible. The total time needed to complete the measures was approximately 60 minutes.

As an incentive, those who completed the survey materials received extra credit in their Introductory Psychology course in order to increase motivation for participation. Those who chose not to complete the survey were allowed to miss the class session without penalty on attendance, thus, there was no unfair penalty for those choosing not to participate in the research (Shadish, Cook, & Campbell, 2002). Professors left the room during the survey, and students were reminded that there were no names or identifiers on survey materials, so their assessments were strictly confidential. This process was completed with the hopes of avoiding positive impression management, increasing motivation, allaying fears, and promoting honesty in study participants (Heppner, Wampold, & Kivlighan, 2008). Additionally, a standardized script was used to relay this information in order to make study implementation more reliable across participating classes while limiting extraneous variance, which would be threats to statistical conclusion validity (Shadish et al., 2002). Institutional review board approval was maintained throughout the study from both the researchers' institution and the community and technical college system.

Data Analysis

Data cleaning and testing of assumptions. First, all data were evaluated for missing data points. Different strategies were used to address missing data depending on the type of variable missing. For categorical variables that were to be used in the regression analyses (e.g., race/ethnicity), any cases with missing data points were removed from the study using listwise deletion. Three cases (i.e., 0.9% of the study sample) were therefore removed, two of which were missing three categorical data points, and one which was missing only the race/ethnicity data point. Next, descriptive statistics were run in R version 3.43.3 (R Core Team, 2013) in order to examine the percentage of missing values for each variable and each individual case, as well as to look for any noticeable systemic patterns of missing data.

For data evaluated as missing completely at random (MCAR; the reason the data is missing is unrelated to study variables) or missing at random (MAR; the reason the data is missing is related to a study variable other than the variable for which the data is missing, Buhi, Goodson, & Neilands, 2008), listwise deletion of any cases missing more than 5% of their total data is considered an acceptable practice. Thus, Little's MCAR test (Little, 1988) was performed to determine whether data was statistically likely to be missing completely at random. The test was significant, noting that the data was more likely missing at random or missing not at random as opposed to missing completely at random. The test's identified patterns of missing data included three survey items from the CES-D with missing data from three to four participants each. Given that the largest of the patterns accounted for only 1.3% of the total sample's responses, and that the CES-D was strongly correlated with other study measures so that missingness was likely able to be predicted by other measured study variables, there was little concern for the data to

be missing not at random (Garson, 2015). Thus, as the missing data could be assumed to be missing at random, individual cases were then examined for percent of missingness. Sixteen cases (i.e., 4.9% of the sample) had more than 5% of their responses missing, and were therefore removed from analyses (Buhi et al., 2008). Next, missing continuous data points were approximated using multiple imputation (MI; Sinharay, Stern, & Russell, 2001) from the mice version 2.46.0 (van Buuren & Groothuis-Oudshoorn, 2011) for R version 3.43.3 (R Core Team, 2013), as MI gives a complete data set that reflects the variability present within the data and therefore does not bias the mean, variances, or other parameter estimates (Streiner, 2002).

Next, the data set was examined for any multivariate or univariate outliers to address assumptions of normality. After composite scores for study measures were calculated, Mahalanobis distances for each participant were tabulated, to determine any full cases that may have too much potential to affect overall statistical analyses. No multivariate outliers were identified. Then, all regression variables, including planned control variables identified via correlational matrices, were assessed for univariate outliers by computing z scores to look for individual data points beyond ± 3 standard deviations from the mean of their respective variable. Two univariate outliers (i.e., 0.6% of the sample) were identified and deleted listwise from the sample to ensure the data were best representative of the population from which they were drawn (Pallant, 2007), resulting in a final data set with $n = 305$. After data cleaning and before conducting analyses, data were examined to ensure they met required assumptions. For the assumptions of CFA, the final sample must reach 200 randomly selected participants, a priori model specifications must be correct, and the sample must have multivariate

normality; the first two assumptions were already addressed. Per Mardia's Multivariate Normality Test (Mardia, 1970), the multivariate normality assumption was violated, but this may be due to the sample size. Histograms were examined and skewness statistics were computed, and some variables were found to be highly non-normal and in need of transformations. However, even after appropriate transformations, data were still not multivariate normal, with major skewness for some items. Thus, CFAs were conducted both with non-transformed data and with items transformed for non-normal skewness. No meaningful differences were found between the two versions, with transformed data actually demonstrating slightly poorer fit statistics. Thus, non-transformed data was used for subsequent study analyses.

For the assumptions of linear and polynomial regression, a matrix scatterplot was created with both a regression line to assess for the assumption of linearity, and a lowess line to assess for polynomiality. Both assumptions were adequately met. Outliers had been previously addressed in initial data cleaning. Upon reviewing a correlation matrix of study variables, it was determined that no correlations surpassed 0.7 to cause concern of suppression, and no correlations surpassed 0.9 to cause concern for multicollinearity (Field, 2009). Standardized and predicted values were in appropriate ranges, and a histogram appeared to be mostly normal although slightly skewed to the right. QQ Plots fit within expectations for linearity, albeit with some bending on the abline toward the center; as a polynomial relation between variables will be explored along with the linear relation, this amount of curvature was determined to be acceptable. Some heteroscedasticity was noted based on clumping of data, and some concern for homogeneity of data was raised as well due to data points pulling toward the right of the

plot. Overall, although some challenges with the normality of the data remained, sufficient assumptions were met to continue with analyses.

Preliminary analyses. Prior to testing for outliers, a correlation matrix had been constructed to examine bivariate relations between demographic variables and study variables (see Table 1) in order to determine control variables, to identify which factors would be predictors, and to identify predicted interaction effects for the subsequent regression analyses. In order to include the categorical demographic variables of gender, employment status, and race/ethnicity in the matrix, these variables were dummy coded. Gender was dummy coded male and female with self-identified males as the referent group; employment status was coded with unemployment as the referent group; and following some previous studies on PDD (e.g., Bond et al., 2004), race/ethnicity was coded into two groups: White/European American and not White/European American, to maximize potential associations between study variables and oppressed and stigmatized racial/ethnic populations. White/European American was the referent group for this variable.

In previous studies of the relation between PDD and mental health, researchers have controlled for gender, race/ethnicity, socioeconomic status, and age, although the use of these variables has been inconsistent across studies (see Pascoe & Smart Richman, 2009, for a review). Thus, age, gender, race/ethnicity, number of people living in the home, and work status (included as a potential proxy variable for socioeconomic status) were assessed to allow for inclusion of them in the current study's statistical analyses. Results of the correlational matrix identified point-biserial correlations with study variables and the following demographic variables: gender, race/ethnicity, and age. These

variables were therefore included as control variables in subsequent analyses (i.e., entered in the first step of hierarchical multiple regressions) due to their potential to impact the statistical analyses (Field, 2009).

Evaluation of the correlational matrix showed statistically significant relations between some of the predictor and outcome variables of interest as well. As both EDS factors and all three DRS-15 factors were related to depressive symptoms as measured by the CES-D at either the $p < .01$ or $p < .05$ level, all five were used as predictors in subsequent regression analyses. The correlation matrix also showed that statistically, the EDS Covert factor was significantly related to all three DRS factors, and that the EDS Overt factor was significantly related to the DRS Commitment and Control factors; thus, those five potential interaction effects were examined in the moderator analyses.

Confirmatory factor analyses. To test the hypotheses that the EDS and DRS-15 measure the unitary constructs of PDD and hardiness, respectively, in this heterogeneous sample of community college students, confirmatory factor analyses using maximum likelihood estimation methods were performed using lavaan version 05-23.1097 (Rosseel, 2012) for R version 3.43.3 (R Core Team, 2013), with the same procedure for each measure. Per previous research and theory, a one-factor and two-factor model were tested for the EDS, and a one-factor and three-factor model were tested for the DRS-15.

First, the one-factor model of the EDS was tested, and goodness of fit was evaluated with the χ^2 statistic, Comparative Fit Index (CFI; Bentler, 1990), Tucker-Lewis Index (TLI; Tucker & Lewis, 1973) and root mean squared error of approximation (RMSEA; Steiger & Lind, 1980). In general, a good fit of the model to the data is indicated by a non-significant χ^2 statistic (Kline, 2005). The CFI and TLI values should

be above .90 for an adequate fit, and above .95 for a good fitting model (Hu & Bentler, 1999; Hooper, Coughlan, & Mullen, 2008). RMSEA values should be less than .05 for a good fit, with a reasonable fit indicated by values of .08 or below, combined with the high end of a 90% confidence interval staying below 1 (Hu & Bentler, 1999). The two-factor model of the EDS was tested in the same manner, and the two models were compared by calculating ΔCFI , the difference between the CFI values of the models. When ΔCFI is $> .002$ the model with the higher CFI is a statistically significant better fit to the data. If the ΔCFI is $\leq .002$, the models are statistically equal with regards to fitting the data, thus, the simpler model should be accepted (Meade, Johnson, & Braddy, 2008). This CFA process was completed for the one and three-factor models of the DRS-15 as well. The best fitting factors identified for the EDS and DRS-15 were then used in subsequent statistical analyses to ensure the variables as assessed in the heterogeneous community college sample were appropriately interpreted (Meyers, Gamst, & Guarino, 2013).

Linear and polynomial moderated hierarchical multiple regression analyses.

Before running any regressions, each variable in the newly confirmed factors of the EDS and DRS-15 were centered to reduce chances of multicollinearity and in order to allow for interpretation of the constant in the subsequent regression analyses (Frazier, Tix, & Barron, 2004). To test the hypothesis that PDD accounts for variance in depressive symptoms above and beyond demographic variables in this sample of community college students, previously identified dummy coded (i.e., gender and race) and continuous (i.e., age) control variables were entered in the first step, and the EDS factors identified in the CFA analyses were entered as predictors in the second step (Field, 2009) with the total

CES-D score measured as the criterion in the hierarchical linear multiple regression. To test the hypothesis that hardiness predicts depressive symptoms above and beyond demographic variables, the DRS-15 hardiness factors identified in the CFA analyses were entered in the third step. In the fourth step, squared values of the EDS and DRS-15 factors were entered to explore a potential polynomial (i.e., curvilinear) relation with the CES-D. Next, to determine whether hardiness moderates the relation between PDD and depressive symptoms, the previously identified potential interactions were entered in the last step.

RESULTS

The aims of this study were: (1) to determine the factor structure for the EDS and the DRS-15 with a sample of diverse community college students, (2) to determine the nature of the relations between PDD, hardiness, and symptoms of depression, and (3) to determine whether hardiness may moderate the relation between PDD and depressive symptoms. Thus, confirmatory factor analyses were conducted on the EDS and DRS-15. Then, using the factors identified through those analyses, moderated linear and polynomial regression analyses were calculated with the two EDS factors and three DRS-15 factors predicting the CES-D, and with the three DRS-15 factors tested as moderators.

Confirmatory Factor Analyses for the EDS

In order to evaluate the factor structure of the EDS for a diverse sample of community college students, confirmatory factor analyses were computed for a one-factor model, and a two-factor model with overt and covert discrimination, based upon results from previous studies (see Table 2). For both models, goodness-of-fit statistics were poor, indicating inadequate fit. But, the two-factor model was a statistically significant improvement in model fit over the one-factor model, as determined by the significant change in the chi-square statistic, and the change in CFI between the models. The hypothesis that the one-factor model of the EDS would be the best fit of the data for the diverse community college student sample was not supported.

Confirmatory Factor Analyses for the DRS-15

In order to evaluate the factor structure of the DRS-15 in this sample, the same

procedure was followed. The first model tested was a one-factor model with no co-varying errors, and the second model tested was structured with three factors, Commitment, Control, and Challenge, loading onto the appropriate items for each subscale (see Table 3). Again, both models were poor fits to the data, but the second model was a statistically significant improvement in fit over the one-factor model, as determined by the significant change in the chi-square statistic and the change in CFI between the models. The hypothesis that the one-factor model of the DRS-15 would be the best fit of the data was not supported.

Linear and Polynomial Moderated Hierarchical Multiple Regression Analyses

In order to assess the relations between PDD, hardiness, and depressive symptoms, as well as to explore hardiness as a moderator of the relation between PDD and depressive symptoms, both linear and polynomial moderated hierarchical regression analyses were conducted (see Table 4). Per prior literature and the initial correlation matrix (see Table 1), the first step of this hierarchical regression included the control variables of gender, race, and age predicting depressive symptoms as measured by the CES-D total score. This overall first model was significant, $F[3, 301] = 4.12, p < .01$, and accounted for 3.9% of the variance in depressive symptoms. Gender was a statistically significant predictor, with individuals identifying as female being more likely to endorse depressive symptoms ($\beta = .20, p < .01$). Race was not a statistically significant predictor of depressive symptoms, $p = 0.77$, nor was age, $p = 0.37$.

In the second step, the introduction of Overt and Covert PDD as measured by the two EDS factors contributed significantly to the regression model, $F[5, 299] = 14.00, p < .01$, explaining an additional 15.1% of variance. A total of 19.0% of the variance in

depressive symptoms was therefore accounted for by this model. The hypothesis that PDD positively predicts symptoms of depression above and beyond demographic control variables is supported; both overt, $\beta = .22, p < .01$ and covert PDD, $\beta = .22, p < .01$ positively predicted depressive symptoms measured by the CES-D. Additionally, gender remained a statistically significant predictor of depression in this model ($\beta = .21, p < .01$).

At the third step, the addition of the three hardiness factors of Commitment, Control, and Challenge as measured by the DRS-15 factors contributed significantly to the regression model as well, $F[8, 296] = 22.33, p < .01$. This model explained an additional 18.6% of the variance, for a total of 37.6% of the variance in CES-D scores accounted for by this model. However, only the Commitment factor was a statistically significant (negative) predictor of depressive symptoms ($\beta = -.45, p < .01$), while Control and Challenge were nonsignificant. Thus, the hypothesis that the DRS-15 would negatively predict symptoms of depression above and beyond demographic control variables, is only partially supported. Gender continued to be a statistically significant predictor of depressive symptoms ($\beta = .18, p < .01$), as did overt PDD ($\beta = .25, p < .01$); however, covert PDD was no longer a significant predictor in this model.

On step four, the addition of squared values for all EDS and DRS-15 factors were added to explore whether polynomial (i.e., curvilinear) relations existed with the depressive symptoms as measured by the CES-D. Although the regression model remained significant, $F[13, 291] = 14.32, p < .01$, there was not a statistically significant change in R^2 ($\Delta R^2 = 0.01, \Delta F[5, 291] = 1.30, p = .263$) between steps three and four. Step four only accounted for 1.4% additional variance in depressive symptoms. Furthermore, none of the polynomial relations was statistically significant. The hypothesis that a

curvilinear relation existed with the CES-D was not supported.

Building on that non-significant step, per earlier statistically significant correlations, the interactions of covert PDD with all three hardiness factors as well as the interactions of overt PDD with commitment and control were added in the fifth step to determine whether any moderation effects were present in the prediction of depressive symptoms. Again, the regression model remained significant, $F[18, 286] = 11.78, p < .01$. This model was a statistically significant better fit over the previous step, ($\Delta R^2 = 0.05, \Delta F[10, 286] = 2.46, p < .01$). It contributed 3.6% additional variance in depressive symptoms, for a total of 42.6% of the variance in depressive symptoms accounted for by this model.

As the polynomial relations were not statistically significant in step four of the previous model, an additional model was calculated without the polynomial relations, to determine whether a focus on only linear relations may prove to be a better fit to the data (see Table 5). The first three steps of this model were therefore identical to the first three steps of the previous model. Then, the fourth step added the interactions of covert PDD with all three hardiness factors as well as the interactions of overt PDD with commitment and control. Overall, this fourth step was significant, $F[13, 291] = 25.93, p < .01$, and a statistically significant better fit over step three, ($\Delta R^2 = 0.04, \Delta F[5, 291] = 3.91, p < .01$). This step accounted for an additional 4.0% of the variance in overall depressive symptoms, for a total of 41.6% of depressive symptoms explained by this model. Gender ($\beta = .15, p < .01$), overt PDD ($\beta = .22, p < .01$), and commitment ($\beta = -.46, p < .01$) remained statistically significant predictors of depressive symptoms. The interaction of overt PDD and commitment emerged as the only statistically significant moderation of

depressive symptoms, $B = -0.13$, $t(291) = -2.02$, $p < .05$. Thus, the hypothesis that hardiness moderates the relation between the EDS and CES-D is only partially supported by this model.

In order to determine whether the linear-only model or the model including the polynomial step was a better fit to the data, an ANOVA was performed to compare the last statistically significant step in each model. Overall, the last step of the first (i.e., polynomial step included) model was not a statistically significantly better fit over the last step of the second (i.e., linear only) model, $\Delta F[5, 286] = 1.00$, $p = 0.42$, even though it had fewer degrees of freedom. Thus, we can conclude that the linear only model is the better fit. Considering this, the interaction effect of overt PDD and commitment should be further examined as a statistically significant predictor of depressive symptoms. Simple slopes analyses for the association between overt PDD and depressive symptoms were conducted for a mean level of commitment, a commitment level of $+1 SD$, and for a commitment level of $-1 SD$. Based on this set of three regression analyses, the interaction effect is graphed in Figure 1. Depressive symptoms increase with increasing levels of overt discrimination across all values of commitment, and at an equivalent rate ($B = 0.62$, $SE = 0.18$, $p < .01$). However, it appears as though the presence of a higher level of commitment can predict consistently lower depressive symptoms in comparison to individuals with average or low levels of commitment, when compared at equivalent levels of overt discrimination.

DISCUSSION

The present study was focused on examining the relations between PDD, depressive symptoms, and hardiness in a heterogeneously diverse sample of community college students. Hypotheses were based on the stress and coping literature (e.g., Carter, 2007; Grzywacz et al., 2002; Hammen, 2005; Kendler et al., 2003; Lazarus, 1966, 1993; Lazarus & Folkman, 1984), the theory of allostatic load (e.g., Drevets et al., 1997; Drevets et al., 2008; McEwen, 1998, 2000), an extensive history of hardiness being studied as a moderator of the relation between stressors and mental health outcomes (e.g., Beasley et al., 2002; Kobasa et al., 1982), and knowledge of the diverse heterogeneous make-up (e.g. AACC, 2016; McIntosh & Rouse, 2009) and increased risk for depressive symptoms (e.g., ACHA, 2013; Eisenberg et al., 2016) in community college students. Additionally, hypotheses about study measures' factor structures were based on previous factor analyses of the measures (e.g., Chan et al., 2012; Janevic et al., 2015; Kim et al., 2014; Krieger et al., 2005; Sinclair & Tetrick, 2000; Williams et al., 1997) as well as underlying theories of the constructs themselves (e.g., Gee et al., 2009; Maddi, 2002; Orr & Westman, 1990; Ouellette, 1993; Paradies et al., 2015; Sinclair & Tetrick, 2000).

Factor Structure of the EDS

The first preliminary hypothesis was that the EDS would measure PDD as a unitary construct with this study's diverse heterogeneous sample. Confirmatory factor analyses did not support this hypothesis as the two-factor model of the EDS (with overt and covert PDD factors) was a better fit of the data. Although the measure was created to

assess the unitary construct of PDD (Williams et al., 1997) and had maintained that unitary factor structure with multiple different populations (e.g., Chan et al., 2012; Gee et al., 2009; Krieger et al., 2005), the current sample followed with other studies in which researchers had found the unitary PDD structure to be a poor fit (e.g., Janevic et al., 2015; Kim et al., 2014). In the current study, the two-factor model found by Chan and colleagues (2012), McCubbin and Antonio (2012), and McCubbin and colleagues (2018) was shown to be a better fit, thus offering additional support for breaking apart PDD into overt and covert domains in future research.

However, even this two-factor model was still a poor fit, demonstrating the rich diversity in how different groups of individuals may experience PDD. Often, these differences are seen between racial groups due to stark differences in their immigration stories and history (Kim et al., 2014; Lewis et al., 2012). One group may not perceive a specific behavior to be discriminatory whereas another group would, due to the group's contextual factors. Or, discrimination may objectively look very different depending on the social narrative around an oppressed group and how society systemically oppresses each identity differentially. For example, the “model minority” myth in the United States leads society to view Asian Americans as homogenously intelligent, financially well-off, and docile (Lee, 1996; Ngo & Lee, 2007; Yoo, Burola, & Steger, 2010), pitting Asian Americans against less idealized racial/ethnic minorities and putting extreme pressure on Asian Americans to fit this “perfect” image. Thus, Asian American experiences of PDD may look very different from those of Black/African Americans or Hispanic/Latinx persons, whose social narratives in the United States are decidedly less positive.

In their meta-analysis on PDD as a predictor of mental health outcomes, Schmitt and colleagues (2014) reported a wide range of effect sizes from -.18 for sexism to -.41 for physical illness/disability, demonstrating just how much variability may be present across target identities beyond race. It may therefore be more appropriate to do exploratory factor analyses of the EDS on intentionally heterogeneous samples in the future, prior to subsequent analyses. As it was not within the scope of this study to explore alternate factor structures, error terms were not allowed to covary, and analyses stopped short of deleting items. But, in order to get the EDS to a statistically good model fit of unitary PDD for a combined sample of Vietnamese and Chinese Americans, Chan and colleagues (2012) needed to remove items associated with overt PDD. Continued exploratory factor analyses in heterogeneous samples could aid in determining whether a good model fit with one or two factors can even be reached, or if too much variability exists in how PDD is experienced across target identities. Additionally, it would be ideal for researchers to intentionally focus recruitment for groups of individuals not well represented in the present study (e.g., Native American/American Indian, transgender) and conduct exploratory factor analyses for each identified group to better understand group differences. Furthermore, individuals endorsing multiple stigmatized identities could be asked to respond to the EDS multiple times, each time with different identities in mind, in order to attempt to isolate differences in PDD by targeted identity. The present study may therefore be a helpful stepping stone to such future work aimed at better identifying unique group differences in the experiences of PDD.

Factor Structure of the DRS-15

The second preliminary hypothesis was that the DRS-15 would assess hardiness as a unitary construct in the study's diverse heterogeneous sample. Again, the confirmatory factor analyses did not support this hypothesis, as the three-factor model of the DRS-15 with commitment, control, and challenge domains was a better fit of the data. Per the widely accepted theory of hardiness, the 3 C's should be highly correlated and secondary to the overarching hardiness factor (e.g., Maddi, 2002; Orr & Westman, 1990; Ouellette, 1993), however, variations in this factor structure have been seen in more recent studies (e.g., Kardum et al., 2012; Wong et al., 2014), which has led some researchers to call for the domains to be studied separately (Sinclair & Tetrick, 2000). However, in the current study's sample, even the three-factor model was a poor fit, and only commitment was significantly correlated with both other hardiness domains, statistically. Commitment had the best internal reliability, was the only predictor of depressive symptoms, and was the only statistically significant moderator of the relation between PDD and depressive symptoms. Thus, the current study's results support the trend to examine each factor of hardiness separately, and may serve as encouragement to future researchers to assess each factor's differential predictive powers.

Although the current, limited literature does not yet support this claim, it is possible that individuals with particular oppressed identities differentially exhibit some hardiness domains over others. The DRS-15 has been normed on largely homogenous groups (e.g., a sample of over 7,200 Norwegian adults; a sample of over 6,000 U.S. military academy college students), and no gender differences have been found; differences between other demographic variables are not known to have been assessed (Bartone, 2007). However, the current study's very heterogeneous, diverse, sample had

larger variability in commitment than have previous normative samples (current study, mean = 10.31, $SD = 2.98$; Norwegian sample, mean = 10.19, $SD = 2.4$; Military academy sample, mean = 10.42, $SD = 2.04$, Bartone, 2007), perhaps one reason for this variable's impact in the study. As previously suggested for the EDS, in future studies, researchers may want to conduct exploratory factor analyses with intentionally heterogeneous populations, or with multiple more-homogenous groups of varied identities, prior to using the DRS-15 in subsequent analyses.

Future Directions for Confirmatory Factor Analyses

Although neither confirmatory factor analysis achieved good model fits in the current study's preliminary analyses, it is possible that with additional purification of each model that acceptable fits could have been reached with the deletion of some measure items and/or after allowing error terms to covary; if these subsequently modified factors were used for the following analyses, it is possible that outcomes may have changed. However, the final model fits for both measures produced factors with Cronbach's alphas in acceptable ranges to be used in the primary analyses. Thus, the analyses may be interpreted, but caution must be taken in drawing conclusions, and additional research is needed to support any claims.

PDD as a Predictor of Depressive Symptoms

The first of the primary hypotheses for this study was that PDD would account for additional variance in total depressive symptoms above and beyond that accounted for by demographic variables in this study's sample of community college students. This hypothesis was initially supported with both covert and overt PDD predicting depressive symptoms, accounting for additional variance over the demographic variables of gender,

race, and age. Many other researchers have found such a relation between PDD and depressive symptoms (see Pascoe & Smart Richman, 2009 and Schmitt et al., 2014 for meta-analyses), so these results are not surprising. Additionally, an exploratory multiple regression model was computed with the composite EDS score predicting depressive symptoms; the EDS score was a statistically significant predictor accounting for additional variance above and beyond demographic variables ($p < .01$). However, in the present study's model with the two factors of PDD, covert PDD was no longer a statistically significant predictor of depressive symptoms after the three domains of hardiness were added to the model as additional predictors.

Hardiness as a potential explanation. What happened to the covert PDD's relation with depressive symptoms? Did hardiness actually mediate the relation? Perhaps when covert microaggressions occur, individuals demonstrating a hardy style cognitively appraise the covert PDD stressors in a way that seems less threatening. Or, perhaps they quickly mobilize their coping strategies and social support to neutralize the threat. Maybe they do both, and subsequently feel in control of the situation, so that stress responses are never triggered. Many constructs similar to hardiness have been found to mediate the relation between discrimination or stigma and mental health. For example, a sense of personal control was found to mediate the relation between reported discrimination and psychological distress in Arab Americans (Moradi & Hasan, 2004), and control also mediated the relation between perceived sexism and psychological distress in a sample of women (Landry & Mercurio, 2009). Coping responses mediated the relation between weight stigma and depression in a sample of overweight and obese individuals (Koball & Carels, 2011), and cognitive appraisal mediated the relation between racist and sexist

discrimination and stress reactions (King, 2005). As individuals who repeatedly demonstrate hardiness have a strong sense of personal control, tend to cognitively appraise challenges and threats as opportunities for growth, and mobilize appropriate coping responses in the face of stressors (Maddi, 2002), future researchers may benefit from exploring hardiness as a mediator in the relation between PDD and depressive symptoms; the current study's somewhat unexpected results could potentially be explained by such an unidentified mediation effect.

Exploration of Demographic Variables

Although no specific hypotheses were made regarding potential demographic variable covariates in this study, the variables of gender, age, race, and socioeconomic status (differentially measured by income, number of people residing in the home, employment status, and education level) pre-identified from studies on PDD and mental health outcomes (e.g., Pascoe & Smart Richman, 2009) were included on the study's demographic survey. The income variable's mode and distribution were unusual, with 8% of the original sample failing to provide their annual income or noting that they were unsure, and almost 15% reporting an annual household income of less than \$10,000. It is possible that many of the younger participants who were still living with parents were more likely not to know their household income, or that individuals only listed their own annual incomes rather than the total for the household, and that this variable was thereby not truly measuring income. The number of people in the home and employment status were therefore considered as potential proxy variables for socioeconomic status when assessing for possible study covariates.

Correlations were then computed so that demographic variables that had statistically significant correlations with any study measures were included as potential covariates in the regression model. Although gender, race, and age were identified and entered into the regression models, only gender was a statistically significant predictor of depressive symptoms. Individuals identifying as female had a mean depressive symptom score that was statistically significantly higher than for those individuals identifying as male, a trend already well-established in the literature (NIMH, 2017). There were no gender differences between other study variables.

Although race was not a statistically significant predictor of depression, some of its point biserial correlations were surprising. Race was statistically significantly associated with covert PDD in that non-White/European American individuals as a whole reported lower mean covert PDD and lower mean PDD overall than did the White/European Americans as a whole. Common sense would dictate that traditionally oppressed races in the United States (i.e., non-White/European American) would be *more* likely to experience PDD. Researchers have also demonstrated that non-White/European American individuals are more likely to report experiences of discrimination, as well (e.g., Bond et al., 2004). However, in other studies, White/European American individuals have reported distressing experiences of perceived racial discrimination (e.g., Fisher, Wallace, & Fenton, 2000). And, like in Fisher and colleagues' study, the current study included a measure of the perception of discrimination, not objective experiences. Perhaps, due to white fragility (DiAngelo, 2011), it could be that White/European American individuals readily attribute negatively valenced behaviors enacted by people

of other races/ethnicities as discriminatory, and feel safer reporting such perceived “reverse racism” on an anonymous survey.

Conversely, it is possible that White/European American individuals in the current study had various other stigmatized identities (e.g., sexual orientation, religion, ability status, weight, religion) of which they were thinking when they responded to the EDS survey, speaking to the importance of assessing multiple and intersecting targets for PDD. In order to explore this potential explanation for the surprising correlations, the last question on the EDS was examined. When asked, “What do you think is the *main* reason for these experiences?” (i.e., PDD), White/European American participants responded in a very similar manner to non-White/European American participants; their response rates were within 3% of one another for gender, religion, height, weight, other physical appearance, and sexual orientation. In fact, the only remarkable differences between racial/ethnic groups occurred with non-White/European American participants responding with higher rates for ancestry/national origin (26.1% as compared to 6.8%), race (47.8% as compared to 12.9%), and reporting two or more reasons for their experiences of PDD (63.4% as compared to 57.4%). White/European American participants only responded with higher rates for age (40.7% as compared to 32.3%) and education/income (38.3% as compared to 31.1%). As these correlations were surprising, future researchers may wish to recruit a larger sample to ensure enough power exists to statistically examine further how PDD may differentially predict depressive symptoms both within and between racial/ethnic groups.

Hardiness as a Predictor of Depressive Symptoms

The next main hypothesis in the current study was that hardiness would account for additional variance in depressive symptoms above and beyond that accounted for by demographic variables. This hypothesis was derived from previous studies in which composite hardiness was a negative predictor of depressive symptoms and negative mental health (e.g., Beasley et al., 2003; Eschleman et al., 2010; Gito et al., 2013). In an exploratory multiple regression model computed with the composite DRS-15 score predicting depressive symptoms; overall hardiness was a statistically significant predictor accounting for additional variance above and beyond demographic variables ($p < .01$). However, as the current study used the better fitting CFA model's three separate domains of hardiness in the multiple regression analyses, the study hypothesis was only partially supported. Surprisingly, commitment was the only domain of hardiness to be a statistically significant predictor of depressive symptoms after accounting for demographic variables.

As previously noted, of all the hardiness domains, the commitment factor had the best internal reliability, whereas both the control and challenge factors each had one item found to be poor fits to the data, which negatively impacted their scales' internal reliabilities. It is possible that commitment is not particularly better at predicting depressive symptoms than are the other domains, and that control and challenge would do just as well if measured more reliable. On the other hand, the specific domain of commitment has been shown to be highly correlated with social support; social support has repeatedly been found to moderate the relation between discrimination and depression (e.g., Noh & Kaspar, 2003). In their meta-analysis of hardiness studies, Eschleman and colleagues (2010) noted of commitment "this subfacet of hardiness is

beneficial because it... results in the development of social relationships that can be called upon during stressful situations” (p. 278). Therefore, future studies should include assessments of both commitment and social support as negative predictors of depression and/or as moderators of the relation between PDD and depressive symptoms in order to determine whether one accounts for more variance in outcomes. Additional studies could also include assessments of divergent validity to measure how much shared variance exists between these constructs in order to determine whether commitment is indeed measuring something beyond the mobilization of social support.

Polynomial Relations Between Study Variables

The next main hypothesis was that there would be a polynomial relation between the predictor variables and depressive symptoms. This hypothesis was not supported, as none of the polynomial variables were statistically significant predictors of depressive symptoms. This hypothesis was built on the theory of allostatic load (McEwen, 1998), and the belief that a pile up of stressors must repeatedly trigger the stress response until reaching the allostatic load tipping point which creates negative physical and mental health outcomes. Some researchers had also hypothesized that the relation between PDD and mental health may increase exponentially as PDD compounds over time (e.g., Gee et al., 2007; Kessler et al., 1999). However, it seems all previous studies of PDD and depressive symptoms resulted in a linear relation as in the current study (see Schmitt et al., 2014 for a meta-analysis). Even other researchers using a stressor pile up framework found linear relations between PDD and negative affect (e.g., Schilling & Diehl, 2014). Thus, perhaps the understanding of allostatic load as an on/off switch for depressive

symptoms was wrong, and maybe the way the depressive symptoms were measured was misleading.

For example, some depressive symptoms as measured by the CES-D are not unique to Major Depressive Disorder (MDD) per the Diagnostic and Statistical Manual-5. For instance, sadness, or feeling as though others do not like you may be common symptoms of negative affect, grief, or shame, which may not result in MDD. Perhaps the EDS is related to the depressive symptoms measured by the CES-D in a linear fashion because a lesser frequency of PDD may simply predict those non-MDD specific negative mental health symptoms. Occasional PDD might make someone sad, and/or cause them to question whether they are liked. More MDD-type clinically significant depression may then emerge after a pile-up of PDD triggers allostatic load, building upon the initially present symptoms of sadness and continuing to worsen steadily over time as allostatic load continues to consistently damage the body. Future researchers may wish to measure biological markers of allostatic load itself in order to better assess for the nature of these relations, as this was outside of the scope of this study. Additionally, a longitudinal study would also better ascertain the specific associations between PDD and CES-D over time, and may therefore allow for modeling of a more complicated relation.

Hardiness as a Moderator

The study's last main hypothesis was that participants' self-reported hardiness levels would moderate the relation between PDD and reported depressive symptoms. This hypothesis was partially supported as the hardiness domain of commitment was shown to moderate the relation between overt PDD and depressive symptoms. As previously noted, the difficulties with the DRS-15 factors' reliabilities may best account

for the differential predictive power of the hardiness domains. However, there may also be particular aspects of the commitment domain which make it a particularly helpful moderator.

Benefits of the commitment domain. A person who demonstrates the hardy domain of commitment chooses to solve problems without recoiling or avoiding, builds up social support rather than isolating, and musters the needed resources to engage fully in life with all its challenges (Maddi, 2002). Problem-solving skills have already been established as moderators of the relation between negative life events and depression (Adams & Adams, 1991; Cheng & Lam, 1997; Goodman, Gravitt, & Kaslow, 1995). People who take a constructive problem-solving approach or who actively build up systems of social support when faced with stressors also are less likely to develop symptoms of depression than are those who withdraw, avoid dealing with the stressors, or become overly emotional (Herman-Stahl & Petersen, 1996; Muris, Schmidt, Lambrichs, & Meesters, 2001; Sandler, Tein, & West, 1994). Thus, commitment appears to be a moderator regardless of the preliminary CFA analyses on which this study was built. However, further research is still needed to confirm if this domain of hardiness is particularly important in the relation between PDD and discrimination, what aspects of the construct are most salient, and whether there are any groups of individuals for whom it is more or less helpful.

Potential problems with the control and challenge domains. Beyond the potential issues with reliability, what reasons might there be for the hardiness domains of control and challenge failing to moderate the relation between PDD and depressive symptoms? Both of these domains are more associated with the cognitive reappraisal

aspect of hardiness, and reassessing the stressor as something which the targeted individual can control or influence is not likely with pervasive daily discrimination. Seeing challenges more as opportunities for growth than threats may not be helpful either; oppressed individuals need to recognize potential threats, as discrimination is often paired with violence towards stigmatized groups (e.g., Lombardi, Wilchins, Priesing, & Malouf, 2002). Individuals who regularly experience PDD may therefore rely more on engaged, committed coping and the building up of social supports as this domain of hardiness may be more appropriate to this particular stressor. For the purposes of this study, commitment still fits well within the stress and coping framework and could still impact allostatic load in its role as a moderator.

Limitations and Future Directions

Beyond the previously mentioned study limitations due to poor fit of the factor analyses, other limitations of the study exist which may impact the interpretability of results. The first such limitation is the cross-sectional design of the study, which limits the ability to infer causality or the direction of associations of study variables. However, other studies including the same variables add support for the hypothesized directionality in the current study. For example, Brown and colleagues (2000) conducted a longitudinal study where depressive symptoms reported in early waves of data collection were not related to the amount of PDD participants reported 12 months later; it therefore appears unlikely that depressive symptoms predict PDD. Additionally, Pavalko, Mossakowski, and Hamilton (2003) also studied PDD and mental health via longitudinal study, and found PDD reported in early waves of data collection did predict reported mental health 7

to 9 years later. Therefore, it is most likely that the proposed directionality of variables in the current study are correct.

Unfortunately, the dynamic nature of hardiness, which is both generally stable and amenable to change (Maddi, 2002), could not be accounted for in the cross-sectional design of the current study. It is possible that if hardiness varies over time as individuals are exposed to PDD that the interactions of these variables occur differently at different points in time. It is also possible that the stressor of PDD is not even recognized as a stressor if high demonstrated hardiness impacts the cognitive appraisal of the situation, thereby not moderating but mediating the relation. Thus, future researchers examining hardiness as a moderator of this relation may want to consider modeling it longitudinally for multiple reasons.

Some may argue that another limitation of this study may be poor external validity. The sample of community college students was almost exclusively drawn from an urban campus, whereas the broader population is spread throughout more rural and suburban areas nationally; thus, the study's findings may not be generalizable to the desired group (Heppner et al., 2007). Additionally, construct validity may be impacted as well, as the variable of PDD was assessed via self-report measure without any manipulation or control. Perceptions vary greatly from individual to individual, and there is no definite ability to determine the true intent of actions the study participants perceived and reported as discriminatory (Williams et al., 2003). Particularly if differences in such perceptions occur in relation to various individual identities, the EDS measure would not be measuring a similarly perceived PDD variable across the current study's heterogeneous participants. This may threaten internal validity in turn, which may

partially account for the poor CFA model fits and/or the differential prediction of depression with overt versus covert discrimination (Heppner et al., 2008). However, this study, as with others before it (e.g., Major et al., 2002) used the stress and coping framework to conceptualize and understand the impact of PDD on mental health. In the stress and coping literature (e.g., Lazarus, 1966, 1993), anything cognitively appraised to be a threat is a stressor which may trigger a stress response. Thus, the importance of this study is that the EDS measure provided the opportunity for participants to report their own perceptions of experiencing the stressors of repeated discriminatory acts (Kim et al., 2014) without others determining for them whether those stressors should be considered valid sources of discrimination or predictors of depressive symptoms.

Unfortunately, construct validity may have been further compromised out of necessity as the demographics page which included gender, race/ethnicity, age, height, weight, and income, was always presented first in the survey packet. Participants may therefore have been primed for and biased toward these identities while completing the remainder of the surveys, resulting in reactive self-report and making past experiences of PDD more salient than they may otherwise have been (Heppner et al., 2007).

Additionally, the participants may have been less likely to think of other identities around which they may experience PDD if they were not included on the demographics form, such as religion or sexual orientation. Further, the demographic measure also included questions related to alcohol and tobacco use, weight, blood pressure and hypertension as part of another study. These health issues may also be associated with discrimination and prime reports of PDD; additionally, if participants were discouraged over their own health, they may have also been primed toward reactive self-report on the current study's

measure of depressive symptoms. In future studies, care should be taken to ensure no particular identities are primed over others, particularly if group differences between targeted identities are being assessed.

Overall, the current study could have been improved with a longitudinal design to model the relations between study variables over time, a larger and more diverse sample in order to draw conclusions about group differences related to study variables, and more flexible and robust preliminary statistical procedures in order to assess and validate measures with appropriate factor structure prior to engaging in further statistical analyses. Future research may build upon the current study by addressing these limitations as well as by continuing to explore other potential moderators of the relation between PDD and depressive symptoms.

Clinical Implications

Results of this study may be translated into clinical practice with caution, although additional studies which replicate the findings of the current study are needed in order to lend confidence to the following suggestions. First, the current study offered additional support for the already well-established finding that PDD positively predicts depressive symptoms above and beyond demographic variables, across diverse and intersecting identities. Thus, mental health professionals may benefit from asking generally about experiences of PDD in all mental health intakes, then following up with the EDS to help determine how much of an impact the discrimination may have on the client, as well as which identity or identities the individual feels are most often targets of discrimination.

Making use of commitment. Next, this study provided support for the hardiness domain of commitment as a negative predictor of depressive symptoms and a moderator of the relation between PDD and depressive symptoms. As previously noted, commitment is defined by an individual's view of life as meaningful and their consistent behaviors focused on building up relationships and pursuing goals (Kobasa, 1979). Researchers have posited that commitment may function well as a moderator due to committed individuals creating more positive coping styles and being motivated to build and utilize the needed social support networks to successfully manage stressors (Eschleman et al., 2010). So, when faced with an individual who may be struggling with PDD-related depression, mental health providers have a variety of possible interventions to target commitment-related behaviors. They may encourage engagement in meaningful activities, pursuit of goals, and building social support via behavioral activation (see Cuijpers, van Straten, & Wamerdam, 2007, for a meta-analysis). Even further, the client may be encouraged to participate in activism, social justice engagements, and other activities focused on advocating for themselves and others with oppressed identities if these activities are seen by the individual as meaningful, relationship focused, and values-consistent goals. These types of values-consistent committed actions are already supported in the literature as trans-diagnostic mental health treatments, such as in Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999), and might translate into treatment for PDD-related depression based on the findings of the current study.

Although the results of future studies may provide more support for the control and challenge domains or for hardiness as a whole, based on the findings of the current

study it seems that the commitment domain is where clinical attention should be focused. Thus, rather than focusing on individuals changing the way they see the discrimination through cognitive reappraisals as originally hypothesized, results of this study are far more empowering. Mental health providers can encourage those struggling with experiences of discrimination and depression to courageously devote themselves to meaningful actions, move toward supportive others, build valued relationships, and commit to advocating for themselves and others as behavioral ways of managing their depression, rather than engaging in cognitive reappraisals of PDD, which may feel invalidating to someone being oppressed.

If the results of future studies further support commitment and/or other hardiness domains as negative predictors of depressive symptoms and moderators of the relation between PDD and depressive symptoms, mental health professionals and community college educators could work together to create prevention efforts targeting PDD-related depressive symptoms as well. The current study's commitment-related findings were across a diverse sample, lending support to the idea that increasing commitment could be beneficial for a wide range of individuals. Thus, using a training program such as Hardi-Training (Maddi, 1987) to increase individuals' hardiness while tailoring the program's focus to commitment in particular, may positively impact PDD-related depressive symptoms in community college students.

The well-established Hardi-Training program has been effective in helping participants reduce depression (Maddi, 1987), and outcomes such as improvement of coping skills are maintained over time after training is complete (Maddi et al., 2009). The Hardi-Training program has also been formatted for use in community colleges, most

often as two full courses that students can take consecutively for credit (The Hardiness Institute, Inc., 2009). As a program that trains people to better manage stressors is likely to generalize to non-discrimination related stressors, the training may improve depressive symptoms and mental health issues related to a wide array of stressors. And, as an added benefit to the community college administrators incorporating this training into their curriculum, Hardi-Training is also associated with improvements in GPA (Maddi et al., 2009).

Words of caution. However, per the current study's findings, Hardi-Training would need to be modified to focus on the commitment component until further research is done to determine whether control and challenge are also helpful in the relation between PDD and depressive symptoms. The components related to control and challenge include education on cognitive reappraisals, and may feel invalidating to victims of PDD and other oppression. Further, individuals may feel similarly about any hardiness-related training. Thus, it is important to note that the suggestion for Hardi-Training to address discrimination-related depressive symptoms is not an insinuation that oppressed individuals are responsible for perceiving oppression differently or that we can solve issues of discrimination and stigmatization by training the victims to be more resilient. Hardi-Training does not in any way take the responsibility off of educators, researchers, mental health professionals and the general public to continue working toward a society free from discrimination and oppression based on cultural and individual differences. However, as these unfortunately deep-rooted societal issues will undoubtedly take more than a short training program to make substantial impact, it is imperative for

mental health professionals to find ways to support and uphold those harmed by continued discrimination and to alleviate suffering when possible.

It is equally important to think about what the current study and existing literature suggest about what might make depression or other negative mental health symptoms worse for diverse populations targeted for discrimination. Something obvious that is worth repeating is that mental health providers and educators must be sure not to contribute to students and clients' PDD through enacting microaggressions of their own. For example, in a study of African American students, feeling as though teachers were treating them differently due to their race was associated with increased depressive symptoms and decreased academic engagement (Aronson & Steele, 2005; Wong, Eccles, & Sameroff, 2003). Conversely, cultural humility, where therapists maintain an other-oriented perspective that involves respect, attunement, and an egalitarian perspective, positively predicts therapy outcomes and helps repair ruptures in therapy when the client perceives a therapist microaggression (Owen et al., 2011).

In sum, although the current study yielded some mixed results with only partial support for some hypotheses and limitations, the study continued to build on the existing literature base regarding the impacts of discrimination on mental health, from a stress and coping perspective. If the body of literature continues to show that PDD predicts depressive symptoms across targeted identities, mental health professionals can intervene in large groups of individuals. Knowing that the commitment domain of hardiness moderates the relation between overt PDD and depressive symptoms and is amenable to training (e.g., Maddi, 2002; Maddi et al., 2009), commitment may be an effective avenue

for intervention with large groups of individuals experiencing discrimination-related depressive symptoms.

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Table 1

Means, Standard Deviations, and Correlations.

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Gender	0.59	0.49													
2. Race/Ethnic	0.49	0.50	.13*												
3. EmployPart	0.54	0.50	-.02	-.14*											
4. EmployFull	0.30	0.46	.05	.14*	-.70**										
5. Age	24.29	7.95	.08	.14*	-.29**	.23**									
6. House	3.57	1.90	.07	.06	.13*	-.19**	-.27**								
7. EDS_Covert	14.18	5.50	-.03	-.16**	.04	.01	-.11	-.02							
8. EDS_Overt	8.19	4.00	-.05	-.11	.08	-.11	-.18**	-.06	.67**						
9. DRS_CM	10.26	3.04	-.06	.11	.05	-.01	.04	-.04	-.33**	-.20**					
10. DRS_CO	12.38	2.39	.08	.07	.05	-.00	-.03	-.02	-.22**	-.14*	.33**				
11. DRS_CH	8.27	3.12	.01	.13*	.05	.00	-.04	.00	-.15*	-.05	.22**	.08			
12. EDS_Total	22.36	8.70	-.04	-.15**	.06	-.04	-.15**	-.04	.94**	.88**	-.30**	-.20**	-.11*		
13. DRS_Total	30.92	5.90	.01	.16**	.07	-.00	-.01	-.03	-.33**	-.18**	.76**	.62**	.67**	-.29**	
14. CESD_Total	17.37	11.41	.20**	-.02	-.07	.05	-.04	.02	.37**	.37**	-.54**	-.18**	-.14*	.40**	-.42**

Note. N = 307. Gender = participants' self-identified gender with male as the referent group, Race/Ethnic = participants' self-identified race/ethnicity with White/European American as the referent group, EmployPart and EmployFull = participants' self-identified employment status with unemployment as the referent group, Age = participants' self-identified age in years, House = participants' self-identified number of individuals currently living in their house, EDS_Covert = Everyday Discrimination Scale, Covert Discrimination factor, EDS_Overt = Everyday Discrimination Scale, Overt Discrimination factor, DRS_CM = Dispositional Resilience Scale, Commitment factor, DRS_CO = Dispositional Resilience Scale, Control factor, DRS_CH = Dispositional Resilience

Scale, Challenge factor, EDS_Total = Everyday Discrimination Scale composite, DRS_Total = Dispositional Resilience Scale composite, CESD_Total = Center for Epidemiological Studies – Depression Scale.

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

M and *SD* are used to represent mean and standard deviation, respectively.

Table 2

Fit Statistics for Confirmatory Factor Analyses of the Everyday Discrimination Scale

	Fit Statistics							Differences Between Models			
	χ^2	<i>df</i>	<i>p</i>	RMSEA	90% CI		CFI	TLI	$\Delta\chi^2$	Δdf	<i>p</i>
Model 1	369.827	27	<0.01	0.203	0.185	0.222	0.758	0.677			
Model 2	240.131	26	<0.01	0.164	0.145	0.183	0.849	0.791	129.690	1	<0.01

Note: Model 1 is the base one-factor CFA model without any covaried errors. Model 2 is the base two-factor CFA model without any covaried errors. RMSEA = Root mean square error of approximation; 90% CI = Upper and lower bounds for the RMSEA; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index.

Table 3

Fit Statistics for Confirmatory Factor Analyses of the Dispositional Resilience Scale-15

	Fit Statistics								Differences Between Models		
	χ^2	<i>df</i>	<i>p</i>	RMSEA	90% CI		CFI	TLI	$\Delta\chi^2$	Δdf	<i>p</i>
Model 1	620.949	90	<0.01	0.139	0.128	0.149	0.480	0.393			
Model 2	342.465	87	<0.01	0.098	0.087	0.109	0.750	0.698	278.490	3	<0.01

Note: Model 1 is the base one-factor CFA model without any covaried errors. Model 2 is the base three-factor CFA model without any covaried errors. RMSEA = Root mean square error of approximation; 90% CI = Upper and lower bounds for the RMSEA; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index.

Table 4

Summary of Moderated Hierarchical Linear and Polynomial Regression Analyses for Variables Predicting CES-D Scores.

Variable	Model 1			Model 2			Model 3			Model 4			Model 5		
	<i>B</i>	<i>SE B</i>	β												
Gender	4.46**	1.29	0.20	4.70**	1.19	0.21	4.04**	1.06	0.18	3.76**	1.07	0.17	3.33**	1.08	0.15
Race	-0.37	1.28	-0.04	0.59	1.19	0.03	1.27	1.06	0.06	1.08	1.07	0.05	1.47	1.06	0.07
Age	-0.07	0.08	-0.05	0.01	0.07	0.00	0.01	0.07	0.00	0.02	0.07	0.01	-0.01	0.07	0.00
EDS-Covert Scores				0.45**	0.14	0.22	0.13	0.13	0.06	0.13	0.14	0.06	0.11	0.13	0.05
EDS-Overt Scores				0.62**	0.20	0.22	0.70**	0.18	0.25	0.66*	0.23	0.22	0.54*	0.22	0.19
DRS-CM Scores							-1.70**	0.19	-0.45	-1.53**	0.21	-0.41	-1.63**	0.21	-0.44
DRS-CO Scores							0.04	0.23	0.01	-0.09	0.29	-0.02	-0.11	0.28	-0.02
DRS-CH Scores							-0.09	0.17	-0.03	-0.11	0.17	-0.03	-0.10	0.17	-0.03
EDS-Covert Squared										0.01	0.02	0.02	0.01	0.02	0.02
EDS-Overt Squared										0.02	0.03	0.04	0.01	0.03	0.03
DRS-CM Squared										0.08	0.04	0.10	0.05	0.05	0.06
DRS-CO Squared										-0.04	0.07	-0.03	-0.03	0.08	-0.02
DRS-CH Squared										0.05	0.04	0.06	0.07	0.04	0.08
Covert X DRS-CM													-0.03	0.04	-0.04
Covert X DRS-CO													0.10	0.06	0.11
Covert X DRS-CH													0.07*	0.03	0.11
Overt X DRS-CM													-0.14*	0.07	-0.14
Overt X DRS-CO													-0.10	0.07	-0.09
<i>R</i> ²		0.04			0.19			0.38			0.39			0.43	
ΔR^2		0.04**			0.15**			0.19**			0.01			0.04**	

Note. * indicates $p < .05$; ** indicates $p < .01$. *B* represents unstandardized regression weights; *SE B* represents the standard error of the unstandardized regression weights. β indicates the standardized regression weights; gender was dummy coded variable with male participants as the referent group; race was dummy coded, with White/European American participants as the referent group.

Table 5

Summary of Moderated Hierarchical Linear Regression Analyses for Variables Predicting CES-D Scores.

Variable	Model 1			Model 2			Model 3			Model 4		
	<i>B</i>	<i>SE B</i>	β									
Gender	4.66**	1.29	0.20	4.70**	1.19	0.21	4.04**	1.06	0.18	3.49**	1.07	0.15
Race	-0.99	1.28	-0.04	0.59	1.19	0.03	1.27	1.06	0.06	1.61	1.04	0.07
Age	-0.07	0.08	-0.05	0.01	0.07	0.00	0.01	0.07	0.00	-0.02	0.07	-0.01
EDS-Covert Scores				0.45**	0.14	0.22	0.13	0.13	0.06	0.10	0.13	0.05
EDS-Overt Scores				0.62**	0.20	0.22	0.70**	0.18	0.25	0.62**	0.18	0.22
DRS-CM Scores							-1.70**	0.19	-0.45	-1.72**	0.19	-0.46
DRS-CO Scores							0.04	0.23	0.01	-0.02	0.24	0.00
DRS-CH Scores							-0.09	0.17	-0.03	-0.10	0.17	-0.03
EDS-Covert X DRS-CM										-0.04	0.04	-0.07
EDS-Covert X DRS-CO										0.10	0.06	0.12
EDS-Covert X DRS-CH										0.06	0.03	0.09
EDS-Overt X DRS-CM										-0.14*	0.07	-0.13
EDS-Overt X DRS-CO										-0.11	0.07	-0.11
<i>R</i> ²		0.04			0.19			0.38			0.42	
ΔR^2		0.04**			0.15**			0.19**			0.04**	

Note. * indicates $p < .05$; ** indicates $p < .01$. *B* represents unstandardized regression weights; *SE B* represents the standard error of the unstandardized regression weights. β indicates standardized regression weights; gender was dummy coded with male participants as the referent group; race was dummy coded with White/European American participants as the referent group.

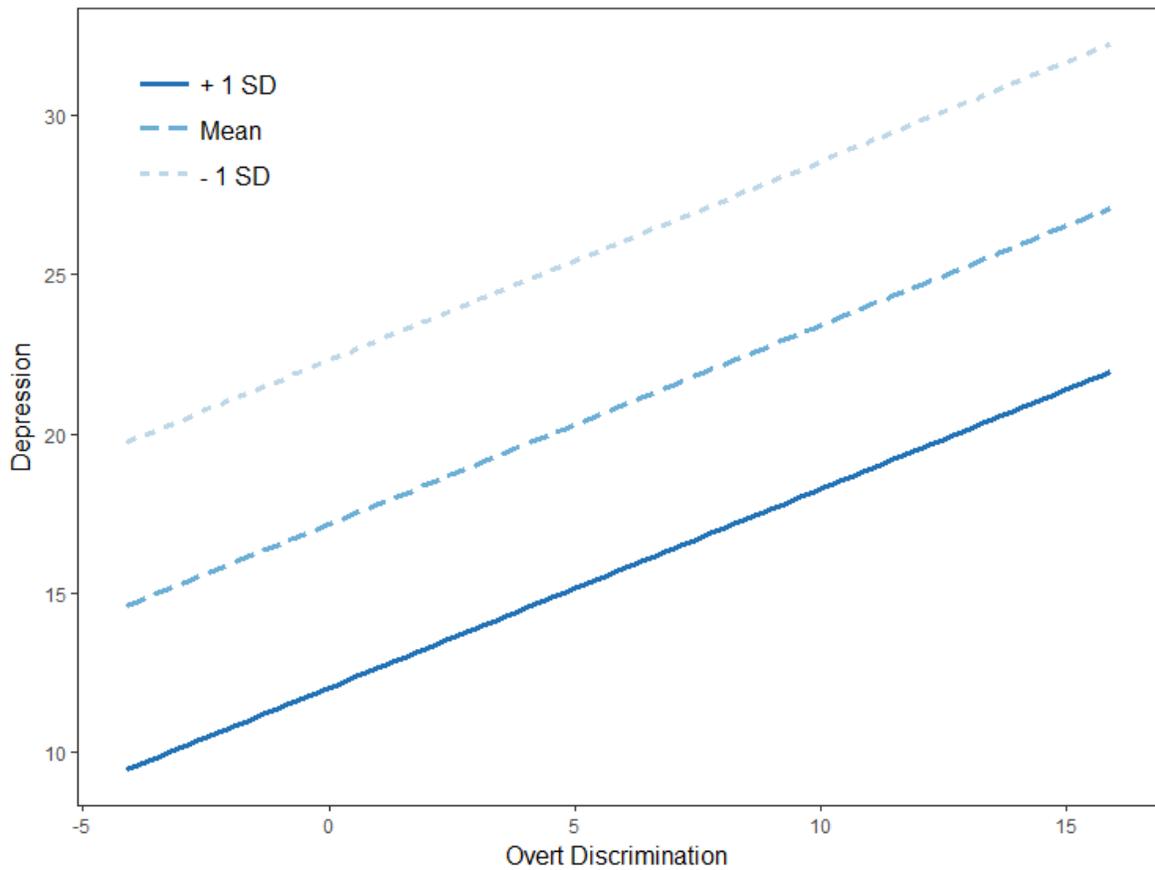


Figure 1. Moderation effect of commitment on relation between perceived overt daily discrimination and depressive symptoms. Key denotes that each predicted line is plotted based on a different level of commitment: one standard deviation above the mean, the mean, and one standard deviation below the mean as measured by the commitment domain of the DRS-15. Overt discrimination is as measured by the overt domain on the EDS and depressive symptoms are as measured by the CES-D.

CURRICULUM VITA

Rosamond J. Smith, M.S.

804 S. 8th St., Apt. 7
Tacoma, WA 98405
rosamondjanesmith@gmail.com
(303) 681-1309

EDUCATION

- Aug. 2018 (Expected) **Doctor of Philosophy in Counseling Psychology**
University of Louisville, Louisville, KY (APA Accredited)
Dissertation: The Role of Hardiness in the Relation Between Perceived Daily Discrimination and Depressive Symptoms in Community College Students
- Aug. 2013 **Master of Science in Counseling Psychology**
The University of Southern Mississippi, Hattiesburg, MS
- May 2006 **Bachelor of Arts in Psychology (Magna Cum Laude)**
North Park University, Chicago, IL

CLINICAL EXPERIENCE

- Aug. 2017-Present **Clinical Psychology Predoctoral Internship**
VA Puget Sound Health Care System, American Lake, Tacoma, WA
- *Veterans Intensive PTSD (VIP) Program, (August – December)*
Implemented Trauma-Informed Guilt Reduction (TriGR) and Skills Training in Affective and Interpersonal Regulation (STAIR) manualized group therapy treatments. Co-led psychoeducational PTSD group, processing groups, and Treatment Teams. Learned and utilized CAPS-5, and practiced measurement-based care using MMPI-2RF, PCL-5 and PHQ-9. Utilized manualized Prolonged Exposure with individual patients. Consulted frequently, focused on team-based treatment, and ensured self-care through engagement with interprofessional team.
 - *Primary Care Mental Health Integration, (December – April)*
Conducted 20-minute functional assessment/brief interventions and made associated diagnostic and referral decisions in fast-paced same-day access clinic. Worked closely with primary care physicians and psychiatrists to facilitate interprofessional team-based care via warm hand-offs and curbside consultation. Provided mindfulness groups for Veterans and staff.

Learned and implemented Cognitive Behavioral Therapy for Insomnia, Acceptance and Commitment Therapy for Chronic Pain, and Smoking Cessation protocols. Practiced utilizing brief treatment model. Conducted cognitive screens and brief ADHD assessments.

- *Promoting Access to Telemental Health (PATH), (April – Present)*

Learning Clinical Video Teleconferencing modality for individual and group therapy. Co-leading Cognitive Behavioral Therapy for Insomnia, Acceptance and Commitment Therapy, and Positive Parenting groups. Learning and providing Unified Protocol to individual patients. Providing Telemental Health training to mental health professionals throughout the VA Puget Sound Healthcare System.

Dec. 2016-
May 2017

VA Neuropsychological Assessment Practicum

*Neuropsychological Assessment - Community Based Outpatient Clinic
Robley Rex VA Hospital, Louisville, KY*

Conducted record review and clinical interviews. Selected, administered, scored, and interpreted neuropsychological assessment batteries. Attended neuropsychological didactic seminars. Wrote integrated reports addressing referral questions. Diagnoses made included Alzheimer's dementia, mild neurocognitive impairment, anxiety-related disorders, bipolar disorder, pseudobulbar affective disorder, and ADHD.

Aug. 2016-
May 2017

Clinical Graduate Assistantship

University of Louisville Counseling Center, Louisville, KY

Provided direct client services via clinical interviews, assessment-informed individual therapy, and outreach. Maintained caseload with a wide range of diagnoses (e.g., depression, anxiety, substance abuse, relationship concerns, personality disorder, OCD, trauma-related stress, gender/sexual identity development). Collaborated with psychiatry at weekly interdisciplinary meetings.

Aug. 2015-
Jul. 2016

VA Psychology Training Practicum

*Substance Abuse Residential (SARRTP), Intensive Outpatient, and
Outpatient Treatment Programs*

Robley Rex VA Hospital, Louisville, KY

Conducted weekly evidence-based psychotherapy groups including Motivational Enhancement Therapy and Mindfulness-Based Relapse Prevention. Co-led interpersonal process groups and participated in "fishbowl" group with live supervision. Maintained small caseload of individual therapy clients. Conducted psychodiagnostic assessments (e.g., MMPI-2, WAIS-IV, AUDIT). Led journal club monthly and presented cases weekly to interdisciplinary treatment team.

May 2015-
Aug. 2015

Assessment Practicum

Weisskopf Child Evaluation Center, Louisville, KY

Co-led family intake interviews, completed and scored assessment

batteries, collaborated with interdisciplinary team to determine diagnoses, and provided same-day feedback to families. Common diagnoses included autism spectrum, anxiety-related disorders, developmental delays, and genetic disorders.

- Aug. 2014-
Dec. 2014 **Psychology Training Practicum**
Central State Hospital, Louisville, KY
Conducted initial interviews, individual therapy, group therapy, relapse prevention planning, suicide risk assessments, and personality and cognitive assessments for adult inpatients with severe mental illness. Prepared psychologists' court documents for resolution of patients' legal statuses; attended court to observe forensic psychology practice.
- May 2014-
Aug. 2014 **Social Security Disability Assessment Practicum**
Private Practice – Government Contractor, Louisville, KY
Conducted full batteries of assessments and wrote reports according to government standards for determination of eligibility for benefits.
- Jan. 2014-
Apr. 2014 **Embedded Behavioral Health Practicum**
Fort Knox 3rd Brigade Combat Team, 1st Infantry Division
Embedded Behavioral Health, Ft. Knox, KY
Co-conducted walk-in intake interviews, risk assessments, and evaluations. Co-led a women's process and psychoeducational group. Maintained a caseload of active duty military individual therapy patients. Participated in hospital-based treatment team meetings and case staffings with unit 3/1 Infantry Command.
- Aug. 2013-
Apr. 2014 **Behavioral Health Psychology Clinic Practicum**
Fort Knox Department of Behavioral Health, Ft. Knox, KY
Co-conducted intake interviews, Fitness for Duty, Chapter Separation, and Recruiter evaluations, hospital returns, and other evaluative interviews. Maintained a caseload of active duty military individual therapy patients.
- May 2013-
Jul. 2013 **“Achieving Our Potential” Full-Time Masters-Level Internship**
Pine Belt Mental Healthcare Resources, Hattiesburg, MS
Co-led group and individual therapy for adolescents mandated to treatment through the juvenile justice system. Used SkillStreaming and Seven Challenges evidence-based manualized treatments for social skills and drug abuse. Co-conducted family therapy, individual parent sessions, and intake interviews. Collaborated with social workers, probation officers, schools, and families.
- May 2013-
Jul. 2013 **Children's Day Treatment – Supplement to Masters-Level Internship**
Pine Belt Mental Healthcare Resources, Hattiesburg, MS
Co-led one five-hour day treatment program per week for five year-old children with autism spectrum disorders and behavioral concerns. Utilized

token economy and time-out behavior modification strategies. Taught social skills.

- Sep. 2012-
May 2013 **BASICS Supplementary Practicum Experience**
Brief Alcohol Screening & Intervention for College Students
The University of Southern Mississippi, Hattiesburg, MS
Provided manualized alcohol screenings and interventions using Motivational Interviewing. Collected data and provided feedback reports to administration.
- Sep. 2012-
May 2013 **Community Counseling and Assessment Clinic Career Counseling Supplementary Practicum Experience**
The University of Southern Mississippi, Hattiesburg, MS
Conducted career counseling intakes and referrals. Used manualized Cognitive Information Processing career counseling protocol with individual clients.
- Aug. 2012-
May 2013 **Community Counseling and Assessment Clinic Practicum #1 & #2**
The University of Southern Mississippi, Hattiesburg, MS
Conducted intake interviews including the M.I.N.I. structured interview, and maintained a caseload of individual therapy clients. Designed and implemented evidence-based CBT treatment plans. Tracked therapy outcomes using OQ-45.2.
- Sep. 2010-
Jun. 2011 **Volunteer Crisis Tele-Counseling**
Crisis Center of Birmingham, Birmingham, AL
Served as crisis/suicide tele-counselor under supervision. Provided brief suicide interventions, counseling, and referrals via National Suicide Prevention Lifeline.

PEER-REVIEWED PUBLICATIONS

- Pössel, P., & **Smith, R. J.** (under review). Teaching behavior and students' depressive symptoms: Do student perceptions of teacher-student similarity make a difference?
- Pittard, C. M., Pössel, P., & **Smith, R. J.** (2015). Teaching Behavior Questionnaire: Verifying factor structure and investigating depressive symptoms in Catholic middle and high schools. *Psychology in the Schools, 52*(9), 892-905. doi: 10.1002/pits.21865
- Brooks, M., West-Olatunji, C., Blackmon, A. T., Froelich, K., De La Torre, W., Montano, T., & ... **Smith, R. J.** (2012). Minority-serving institutions and their contribution to advancing multicultural teacher education pedagogy. *Education, 133*(2), 349-360.

PROFESSIONAL PRESENTATIONS

Smith, R. J. (2015, August). *Teaching behavior and student depressive symptoms: Effect of perceived teacher-student similarity*. Symposium presented at the annual convention of the American Psychological Association, Toronto, Canada.

Smith, R. J., Nicholson, B. C., & Roane, S. (2015, August). *Hardiness, social support, and parenting stress in adolescent mothers*. Poster presented at the annual convention of the American Psychological Association, Toronto, Canada.

Jacobi-Vessels, J. L., **Smith, R. J.**, & Wilson, C. (2015, March). *Preschool exploratory behaviors in structured and free-choice settings*. Poster presented at the biennial meeting of the Society for Research and Child Development, Philadelphia, PA.

Clark, C. M., **Smith, R. J.**, Latady, M., & Nicholson, B. C. (2014, March). *The relationship between early parenting, hardiness, and mental health outcomes among college students*. Poster presented at the 2014 Counseling Psychology in Action Conference, Atlanta, GA.

Raisanen, E., Nicholson, B. C., & **Smith, R. J.** (2012, August). *The role of hardiness, family hardiness, and parenting self-efficacy on parenting stress in adoptive parents*. Poster presented at annual convention of the American Psychological Association, Orlando, FL.

EDITORIAL EXPERIENCE

May 2014 **Ad Hoc Reviewer**
Journal of Affective Disorders

RESEARCH EXPERIENCE

Aug. 2017-
Present **VA Puget Sound, American Lake Women's Mental Health Research**
Designed research project focused on exploring women Veterans' barriers to accessing mental health care. Conducted phone interviews with Veterans. Compiled report on qualitative data and presenting to VA Leadership.

Aug. 2013-
Present **Research Team Member, Adolescent Depression Research Team**
University of Louisville, Louisville, KY
Gather and enter data, assist in qualitative coding, conduct statistical analyses, and prepare and peer-review manuscripts. Co-authored NIH grant proposal.

Aug. 2013-
Jul. 2016 **Graduate Research Assistant, Early Childhood Education**
University of Louisville, Louisville, KY
Assisted in all stages of qualitative and quantitative research. Worked with local schools to increase partnerships in research and practice. Conducted

research, maintained records, and compiled required reports on \$250,000 annual grant.

Aug. 2011- **Research Team Member, Positive Parenting Research Team**
Aug. 2013 *The University of Southern Mississippi, Hattiesburg, MS*
Assisted team members with manuscript edits, created posters for presentations, and provided feedback on peer research projects.

Aug. 2010- **Volunteer Research Assistant, Counselor Education Program**
Jun. 2011 *University of Alabama at Birmingham, Birmingham, AL*
Conducted archival data collection. Assisted in writing, revision, and preparation of faculty manuscripts for publication.

TEACHING/DIDACTIC EXPERIENCE

June 2018 **Fellow and Intern Joint Didactic Presenter**, Ethics in the VA
VA Puget Sound, American Lake, Tacoma, WA

May 2018 **Psychology Service Seminar Didactic Presenter**, Cultural Blind Spots
VA Puget Sound, American Lake, Tacoma, WA

April 2018 **Journal Club Presenter**, Predictors of Client Psychotherapy Outcomes
VA Puget Sound, American Lake, Tacoma, WA

May 2016- **Graduate Teaching Assistant**, ECPY 793: Family Therapy
Jul. 2016 *University of Louisville, Louisville, KY*

Aug. 2015- **Graduate Teaching Assistant**, ECPY 648: Cognitive Assessment
Dec. 2015 *University of Louisville, Louisville, KY*

Aug. 2014- **Instructor of Record**, EDTP 107: Human Development and Learning
Dec. 2014 *University of Louisville, Louisville, KY*

Jan. 2014- **Graduate Teaching Assistant**, ECPY 605: Human Development
Apr. 2014 *University of Louisville, Louisville, KY*

Jan. 2012- **Graduate Teaching Assistant**, PSY 374: Educational Psychology
May 2012 *The University of Southern Mississippi, Hattiesburg, MS*

Jan. 2012- **Graduate Teaching Assistant**, PSY 432: Behavioral Interventions
May 2012 *The University of Southern Mississippi, Hattiesburg, MS*

Aug. 2011- **Instructor of Record**, Introductory French
May 2012 *Home-Schooled 8th Grade Student, Houston, TX*

LEADERSHIP EXPERIENCE

- Aug. 2017- Present **Diversity Committee Member**
VA Puget Sound Health Care System, American Lake Division
- Sep. 2012- Present **Student Committee Member: Division 49**
Society of Group Psychology and Group Psychotherapy (APA)
- Jan. 2015- Jan. 2017 **Student Representative on the Executive Board: Division 49**
Society of Group Psychology and Group Psychotherapy (APA)
- May 2014- Dec. 2014 **Student Representative-Elect: Division 49**
Society of Group Psychology and Group Psychotherapy (APA)
- Aug. 2014- Aug. 2015 **Counseling Psychology Representative, Doctoral Student Organization**
Department of Counseling & Human Development, University of Louisville
- Jan. 2014- Jul. 2014 **Secretary, Doctoral Student Organization**
Department of Counseling & Human Development, University of Louisville
- May 2012- Aug. 2013 **Campus Representative, Advocacy Coordinating Team (ACT)**
American Psychological Association of Graduate Students (APAGS)
- Aug. 2011- Sep. 2012 **Service Chair, Counseling Psychology Student Government**
The University of Southern Mississippi

MANAGEMENT EXPERIENCE

- Aug. 2008- Jun. 2011 **Regional Sales Manager**
Marriott International, Chicago, IL/San Antonio, TX
Represented a portfolio of over 50 Marriott Hotels & Resorts across seven states. Maintained and documented regular contact with 100-150 customers, securing \$800,000 in annual sales. Certified as peer trainer in sales force automation computer system. Created and taught internet lead-specific sales training.
- Oct. 2007- Jul. 2008 **Rooms Controller**
Denver Marriott City Center, Denver, CO
Managed hotel's 615 room inventory to maximize guest satisfaction and hotel profits, based on revenue management strategies and reports. Ensured all group and VIP requirements were communicated between events and front desk staff.
- Jul. 2006- Oct. 2007 **Executive Assistant to the General Manager**
Denver Marriott City Center, Denver, CO
Served as liaison to the executive committee and advocate for hourly employees. Managed all property-specific guest complaints escalated to corporate. Increased associates' morale by creating and executing a weekly recognition program.

PROFESSIONAL MEMBERSHIPS

- **Trainee Affiliate**, *Association of VA Psychology Leaders (AVAPL)*
- **Graduate Student Affiliate**, *American Psychological Association*
- **Member**, *American Psychological Association of Graduate Students*
- **Student Affiliate**, *Society for Counseling Psychology, APA Division 17*
- **Student Affiliate**, *Society of Group Psychology and Group Psychotherapy, APA Division 49*

SCHOLARSHIPS AND AWARDS

- | | |
|-----------|--|
| 2018 | College of Education and Human Development Scholarship (\$1,200)
<i>Honors and Scholarship Committee, University of Louisville, KY</i> |
| 2018 | College of Education and Human Development Scholarship (\$1,000)
<i>Honors and Scholarship Committee, University of Louisville, KY</i> |
| 2017 | College of Education and Human Development Scholarship (\$1,000)
<i>Honors and Scholarship Committee, University of Louisville, KY</i> |
| 2016 | APA Division 49 Student Travel Award (\$500)
<i>Society of Group Psychology and Group Psychotherapy, APA Division 49</i> |
| 2015 | Graduate Student Association Travel Award (\$200)
<i>University of Louisville, KY</i> |
| 2014 | Graduate Student Association Travel Award (\$250)
<i>University of Louisville, KY</i> |
| 2012 | APA Student Travel Award (\$250)
<i>American Psychological Association of Graduate Students</i> |
| 2002-2006 | Nyvall Presidential Scholarship (\$40,000)
<i>North Park University, Chicago, IL</i> |