

Factors Promoting Positive Adaptation and Resilience during the Transition to College

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Received September 29th, 2012; revised October 23rd, 2012; accepted November 22nd, 2012

The transition to college can be a difficult time as students adjust to new social and academic demands while adapting to new living circumstances in a collegiate environment. The ability of students to cope with the stress of such a transition and display positive outcomes despite challenges has important implications for psychosocial well-being as well as academic success. The present study examined the relative impact of four domains that have been shown to promote resilience in the face of stress in order to determine the extent to which each factor predicted student stress independent of all other factors. First-year college students from four universities completed measures assessing their perceived level of stress as well as their social connectedness, self-care behaviors, cognitive style, and life skills. Results revealed that social support and cognitive styles characterized by optimism significantly and uniquely predicted lower stress among students. Findings are discussed in relation to the development of university-based programs to promote the skills and characteristics that are most likely to result in positive outcomes for students during the transition to college.

Keywords: Resilience; Stress; College; Adjustment

Introduction

At the heart of positive psychology is the notion that psychological research would benefit from focusing on the building of positive qualities in normal functioning individuals rather than psychology's long-standing pursuit of identifying conditions and variables associated with repairing or avoiding negative outcomes (Seligman & Csikszentmihalyi, 2000). Gable and Haidt (2005) defined positive psychology as "the study of the conditions and processes that contribute to the flourishing or optimal functioning of people, groups, and institutions" (p. 104). From this perspective, positive psychologists suggest that studying the variables that promote positive growth and resilience in individuals without psychological distress may be as beneficial as studying the treatment of individuals who are already experiencing difficulties. With this in mind, the present study sought to identify factors that promote positive adaptation and outcomes during a life transition faced by millions of people every year—adjusting to college life.

The transition to college can be an exciting, albeit stressful, time in students' lives as many move away from friends and family and must adapt to new and increasingly demanding academic, social, and financial pressures, all while adjusting to life in an unfamiliar environment. As a result of this transition, first-year college students tend to experience greater stress, anxiety, and psychological distress (e.g., depression) relative to upperclassman (Bayram & Bilgel, 2008). However, students display varying levels of resilience in their ability to have positive outcomes in the face of such a transition. Research supports the existence of a number of factors that have been associated with positive responses in the face of stress, including social support and having a close social network, taking care of one's self physically as well as mentally, possessing particular

skills (i.e., self-regulation, cognitive flexibility), and the style with which one thinks about past and future events (i.e., optimism, pessimism). Moreover, such factors seem to have a cumulative effect on stress such that persons possessing a greater number of protective factors are more likely to adapt positively in the face of stress and display resilience (Howard, Dryden, & Johnson, 1999). Importantly, the extent to which students are able to cope with stressors during the first year of college has important implications not only for their social-emotional adjustment and well-being, but also for the likelihood of academic success and persistence in postsecondary education (Andrews & Wilding, 2004; Pritchard & Wilson, 2003; Zajacova, Lynch, & Espenshade, 2005).

Little is known, however, with respect to the relative strength of the effects of various factors that promote positive adaptation in the face of student stress. The findings of such an examination have significant implications for the development of practices and programs to promote positive psychological adjustment and, ultimately, academic success and retention by providing researchers, faculty, and administrators with information concerning the factors that are most likely to promote resilience and positive adaptation in the face of stress. The present study aimed to explore and compare the effects of several resilience-promoting domains that have been shown to be associated with more positive outcomes in stressful situations among college students to determine if possessing resources in any particular domain was more strongly associated with positive stress-related outcomes than other domains when compared concurrently. The four resilience factors included in the present study were selected following an examination of the literature that revealed that one's social connections, self-care behaviors, cognitive style, and life skills (e.g., regulatory and coping skills) tended to be the domains most commonly identified as impacting feel-

ings of and responses to stress.

Resilience-Promoting Factors

Social connections. For first-year college students, developing social connections and avoiding social isolation is a crucial task during the transition to college and has important implications for students' academic performance and persistence as well as their psychological well-being. Not only have feelings of belongingness been suggested to be a basic human need (Baumeister & Leary, 1995), but the lack of positive relationships with others has been found to predict academic underachievement (Walton & Cohen, 2007, 2011) and poor physical health (Cohen & Janicki-Deverts, 2009; Uchino, 2006), as well as depressive symptomology, greater stress, and higher levels of anxiety (Hall-Lande, Eisenberg, Christenson, & Neumark-Sztainer, 2007; Sax, Bryant, & Gilmartin, 2004). Further, the quality of peer relationships and social support has been suggested to be one of the most important predictors of psychological health and well-being during adolescence (Rubin, Bukowski, & Parker, 1998).

In an effort to explain the association between social support and stress during periods of change, Cobb (1978) suggested that major transitions in life (e.g., beginning college) put people at risk for increased stress. However, individuals who interpret interactions and communications with others as indicative of being cared for, valued, and part of a social network were likely to experience less negative and more positive psychological outcomes in the face of stressful events. In this way, social support may buffer individuals from stress by affecting the manner in which the stressful situation is appraised. Additionally, having persons to discuss stressful situations with has been shown to reduce the likelihood of negative affective or behavioral responses to stressful events (Lepore, Silver, Wortman, & Wayment, 1996), perhaps by offering a solution to dealing with the stressor, decreasing the perceived salience of the stressor, or distracting one from the stressor (Cohen & Pressman, 2004).

As students transition from high school to college and find themselves in unfamiliar environments with new and more demanding responsibilities, social support is an effective and valuable resource to aid students in combating stress and anxiety and promoting positive adjustment and well-being. As such, students who perceive themselves as having high levels of social support may be buffered from some of the deleterious effects of stress during the transition to college.

Self-care. During times of stress, the extent to which individuals engage in health-promoting behaviors and maintain a healthy life style has been found to positively impact their psychological well-being. Evidence supports the existence of a mind-body connection by which physical functioning and health are associated with mental and emotional well-being (Astin & Forsys, 2004). Specifically, physical activity has been found to benefit mental health and decrease symptoms of depression and anxiety (see Penedo & Dahn, 2005, for a review). Exercise has also been shown to reduce stress and promote self-esteem and long-term cognitive and emotional well-being (Berchtold, 2008; Edenfield & Blumenthal, 2011; Hays, 1999). To the extent that students engage in self-care behaviors, such as healthy eating and exercise, they may experience greater lower distress during the transition to college.

In addition to promoting positive responses to stress, self-

care behaviors are often negatively impacted by stress. For example, some people tend to eat more whereas others tend to eat less when under stress (Stone & Brownell, 1994). Restrictions of caloric intake as well as over-indulgence both result in negative outcomes for physical and psychological well-being. At a neurophysiological level, eating unhealthy, high-fat, palatable foods has been found to be associated with opioid release, and opioid release increases the consumption of palatable foods. Given that opioid release has a strong effect on reducing stress, it is possible that unhealthy eating may become an addictive response to stressful situations in an attempt to cope with stress (see Adam & Epel, 2007). Moreover, self-caring, including maintaining a healthy diet (Cartwright et al., 2003), getting sufficient sleep (Meerlo, Sgoifo, & Suchecki, 2008; Wheatley, 1993), and treating one's self with compassion, care, and kindness (see Neff, 2009 for a review) have been found to lower stress and promote positive psychological well-being.

Broadly, positive health-related behaviors that involve taking care of one's self, such as exercise, a healthy diet, adequate sleep, and positive self-cognitions are important for lowering stress and may promote psychological adjustment for students during the transition to college.

Regulatory and coping skills. Personal, social, and behavioral abilities also play a role in affecting the manner in which persons manage stressful situations. For example, evidence suggests that lower levels of stress may be associated with skills or abilities, such as self-regulation (i.e., controlling one's emotions, thoughts, and behaviors) which has been shown to be associated with better adaptation in the face of stress (Buckner, Mezzacappa, & Beardslee, 2003). The regulation of positive emotions has also been linked to resilience to the extent that they counteract negative emotional experiences and enhance thoughts and actions (Fredrickson, 2001; Tugade & Fredrickson, 2007). As such, students who possess better self-regulatory capabilities and are in greater control of their emotions, thoughts, and behaviors during stressful times should experience more positive outcomes and greater resilience than their counterparts with poorer self-regulation.

Additionally, the ability to be flexible in the use of coping strategies that are adaptive and effective in response to specific negative events has been found to relate to lower levels of anxiety and depression (Fresco, Williams, & Nugent, 2006; Lam & McBride-Chang, 2007). Research suggests that students who are able to selectively engage particular strategies in the service of coping with stress during the transition to college should experience more positive outcomes and experience lower rates of dropout than students who lack such flexibility (Gan, Shang, & Zhang, 2007). The ability to recruit coping resources that match the needs of a particular situation are more effective at dampening stress compared to persisting in the use of an unsuccessful or ineffective strategy in a stressful situation.

Cognitive style. We define cognitive style as the manner in which students explain their personal successes and failures, as well as their level of confidence in their own abilities and the nature of their outlook for the future (i.e., optimistic/pessimistic). Negative ways of thinking that relate to one's self, world, and future have been found to be indicative of latent depressive cognitive styles (Beck, 1987), and these patterns of thought have been found to be stable over time (LaGrange et al., 2011). Persons who tend to view their selves, abilities, and actions negatively tend to struggle to adapt to and overcome stressful circumstances. Conversely, individuals who possess positive

cognitive styles that involve feeling in greater control of their environment, having more confidence in their ability to overcome obstacles, and a positive outlook for the future have been found to be more resilient and experience greater psychological well-being (Maier & Seligman, 1976; McGregor, Gee, & Posey, 2008; Tusaie, Puskar, & Sereika, 2007). For students adjusting during the transition to college, the ability to maintain a positive perspective on one's future helps promote resilience in difficult moments, providing a buffer against the negative impacts of stress and maintaining motivation to achieve one's goals (e.g., make good grades, bond with roommates, gain independence).

Present Study

The present study assessed the impact of factors that promote resilience in the face of stress during the transition to college. Of primary interest was the degree to which each resilience factor predicted students' stress independently of the other domains of resources. Given the empirical support for the positive stress-related outcomes associated with the aforementioned domains, as well as the differential characteristics associated with each (e.g., healthy diet as a self-care behavior, feeling socially connected to others) we expected each factor to be significantly and uniquely associated with lower student stress. However, given the exploratory nature of the study, we had no specific expectations regarding the differential strength of the independent associations between the resilience factors and student stress. Additionally, we examined the cumulative effect of these resilience factors to ascertain the extent to which possession of accumulated resources across multiple domains impacted students' adaptation to stress during the transition to college. Importantly, we were interested in exploring the degree to which the cumulative effects of the resilience factors predicted students' stress responses above and beyond the effects of the individual resilience factors. This aim was guided by the hypothesis that students with a greater total number of resilience-promoting resources would experience lower stress than students who have fewer resources at their disposal as a result of the greater availability of ways to combat stress. Moreover, we expected that effect of the total number of resilience resources would hold even when controlling for the effects of each factor independently.

Method

Participants

Participants were 120 first-year college students (94% freshmen, $M_{\text{age}} = 18.73$ years) from four colleges in Pennsylvania. The majority of the student participants were female (86.7%) due to high participation from an all-female university. The sample was relatively diverse with 76.7% European American, 12.5% African American, 3.3% Asian, and 7.5% other racial category.

Measures

Perceived Stress Scale. The 10-item *Perceived Stress Scale* (PSS; Cohen, Kamarack, & Mermelstein, 1983) is a well-established measure of individuals' perceptions of their own global level of stress. Sample items include, "In the last month, how often have you felt nervous and stressed?" and "In the last

month, how often have you found that you could not cope with all the things you had to do?" Students responded to items on a 5-point Likert-type scale (1 = *Never* and 5 = *Very often*). In the current study, the PSS demonstrated good internal reliability ($\alpha = .89$).

My Resilience Factors. The 30-item *My Resilience Factors* questionnaire assesses four domains that have been found to be associated with the ability to overcome stressful and difficult situations and promote resilience (DeRosier, Craig, & Leary, 2012). Students responded to each item on a 4-point Likert scale (1 = *Not at all true or Never true about me* and 4 = *Very or Almost always true about me*) indicating how true each statement is of them. The four categories of resilience include: Social Connections (e.g., "I feel socially connected to others at college;" 6 items; $\alpha = .72$), Self-Care (e.g., "I exercise regularly (at least once per week);" 7 items; $\alpha = .64$), Life Skills (e.g., "I'm self-motivated to succeed;" 11 items; $\alpha = .85$), and Cognitive Style (e.g., "When bad things happen, I know things will get better;" 6 items; $\alpha = .90$).

Procedure

Participants were first-year college students recruited as part of a larger study assessing students' resilience to stressful situations faced during the transition to college. Participating universities offered incoming freshman the opportunity to take part in a pilot study designed to test a curriculum developed to build students' resilience. Students who volunteered to participate completed the *Perceived Stress Scale* (PSS; Cohen et al., 1983) and *My Resilience Factors* (DeRosier & Raab, 2011) approximately six weeks into the first semester of college so as to allow for the opportunity for students to experience increases in academic, social, and financial stress that often accompanies the transition to college. Measures were completed via students' secure online accounts as part of the testing of the curriculum developed to build and strengthen students' resilience in the face of stress during the first year of college.

Results

Preliminary Analyses

Table 1 shows the means and standard deviations for all variables as well as the bivariate correlations for all pairs of variables. As can be seen, students' perceived stress was significantly and negatively correlated with each resilience factor, suggesting that possessing higher levels of resilience-promoting resources in each domain was associated with positive adaptation (i.e., lower levels of stress) during the transition to college. All domains of resilience factors were found to be significantly correlated to one another indicating that higher scores in any specific resilience-promoting domain tended to be associated with higher scores in other domains. Moreover, the moderate correlations among the resilience factors (as seen in **Table 1**) suggest that although the factors are interrelated, they may not be so highly correlated as to suggest that they are measuring the same constructs.

Despite our predominantly female sample, exploratory analyses were conducted to examine potential gender differences in the presence of the protective factors as well as in students' levels of perceived stress. Not surprisingly, no significant differences were found for men and women. Examination of means revealed negligible differences ($<.09$) for all variables

Table 1.
Means, standard deviations, and bivariate correlations.

	M	SD	PSS	Social Connections	Self-Care	Life Skills
Perceived Stress (PSS)	2.60	.63				
Social Connections	3.18	.55	-.46***			
Self-Care	3.16	.50	-.33***	.49***		
Life Skills	3.42	.42	-.49***	.51***	.55***	
Cognitive Style	3.48	.56	-.55***	.50***	.53***	.77***

Note: $^{\circ}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

except for students' social connections, wherein we found that males ($M = 3.39$, $S.D. = .63$) reported greater social connections than females ($M = 3.15$, $S.D. = .54$), although this difference was not significant.

In addition, to explore whether the pattern of inter-correlations among resilience factors differed for males versus females, we conducted r -to- Z Fisher transformations (Fisher, 1915). Again, no significant differences were found, indicating that these resilience factors appeared to be inter-related in a similar fashion for males and females.

Independent and Cumulative Effects of Resilience Factors

Next, a hierarchical multiple regression analysis was conducted to test the independent effects of each resilience factor on students' reports of stress controlling for all other domains, as well as the unique cumulative effect of all resilience factors on college students' levels of perceived stress over and above the effect of each independent factor. We also tested for main effects and interactions with gender to explore the possibility that differences exist in the effects of the resilience factors on students' stress as a function of gender. Once again, these analyses were largely exploratory due to the disparity in the numbers of males and females in the sample. However, the presence of significant effects may suggest sizeable differences between males and females to inform future research concerning stress and coping in college students.

Students' scores on the social connections, self-care, life skills, and cognitive style subscales were entered along with student gender on the first step of the present analysis. The composite score consisting of the average across all resilience-promoting factors was entered on the second step and two-way interactions among the resilience factors and gender were entered in the third step. As shown in **Table 2**, students' social connections and cognitive style were significantly inversely related to students' perceived stress, suggesting that students who experienced greater social connectedness ($\beta = -.21$, $t(114) = -2.21$, $p = .03$) and possessed a cognitive style characterized by self-confidence and optimism ($\beta = -.39$, $t(114) = -3.19$, $p = .002$) reported lower levels of stress during the first semester of college independent of all other protective factors and gender. Moreover, accounting for gender and all of the resilience-promoting factors simultaneously explained a significant amount of total variance in perceived stress, $R^2 = .34$, $F(5, 112) = 11.55$, $p < .001$.

The addition of the cumulative resilience factor (resulting from the summation of all items across subscales) to the model in the second step, however, did not explain additional unique

variance in students' perceived stress, $\Delta R^2 = .001$, F -change (1, 111) = 0.09, $p = .77$. This finding suggests there may not be a cumulative effect of these protective factors over and above the independent effects of specific resilience-promoting factors. That is, the accumulation of resources from multiple resilience-promoting domains did not explain additional unique variance above and beyond what is accounted for by the independent resilience factors. Moreover, the inclusion of the cumulative factor score resulted in the previously significant predictors (social connections, cognitive style) becoming non-significant predictors. Similarly, the inclusion of two-way interactions in the final step did not result in a significant increase in explained variance [$\Delta R^2 = .02$, F -change (5, 106) = 0.80, $p = .55$], indicating that our preliminary and exploratory examination of gender revealed no significant differences in the associations between resilience factors and students' stress as a function of gender.

In sum, our results suggest that students' social connectedness and optimistic thinking style were the most important predictors of students' positive adjustment during the transition to college. However, inclusion of a cumulative resilience factor to the model did not explain additional variance in stress and resulted in the previously significant predictors dropping to non-significance. This finding suggests that the cumulative factor contributed no additional unique variance, but also shared variance with social connections and cognitive style resulting in these variables becoming not significant predictors of student stress. Finally, no main effect of gender or two-way interactions among the resilience factors and gender were found to significantly relate to students' stress during the transition to college, suggesting that this predictive pattern was similar for both genders.

Discussion

The prevalence of stress and anxiety in first-year college students underscores the need for adequate and appropriate support services to help students successfully transition to post-secondary learning (Wong, Cheung, Chan, Ma, & Tang, 2006). In fact, the extent to which students are able to cope with stressors during the first year of college is directly related to their academic resilience (Zajacova et al., 2005). Many colleges and universities employ First Year Experience (FYE) programs to help orient and acclimate first-year students (Hunter, 2006) to campus life. These programs consist of a wide range of activities, including summer orientation days for new students, first-semester seminars, student- or faculty-led support groups, and enhanced advisory plans. However, typical FYE programs for supporting students in this transition rarely directly address stress, coping, and resilience with students, but

Table 2.
Hierarchical multiple regression predicting student stress.

Predictor	Step 1		Step 2		Step 3	
	β	ΔR^2	β	ΔR^2	β	ΔR^2
		.34***		.001		.02
Gender	-.01		-.01		-.04	
Social Connections	-.21*		-.13		-.14	
Self-Care	.04		.11		.17	
Life Skills	-.10		-.04		.09	
Cognitive Style	-.39**		-.30		-.23	
Cumulative Factor			-.25		-.47	
Gender \times Social Connections					-.24	
Gender \times Self-Care					-.32	
Gender \times Life Skills					-.27	
Gender \times Cognitive Style					-.38	
Gender \times Cumulative Factor					.98	

Note: * $p < .10$. ** $p < .05$. *** $p < .001$.

rather target practical (e.g., dining halls, dorm life) and academic (e.g., course scheduling) aspects of adjusting to college life (Hunter, 2006; Padgett & Keup, 2011). Unfortunately, a recent meta-analysis showed typical FYE programs are not significantly related to academic success with an average correlation of only .023 across studies (Robbins, Oh, Le, & Button, 2009). Moreover, a growing literature points to the influential role of social-emotional factors in academic performance and persistence (Dweck, 2002; Walton & Carr, 2012; Walton & Cohen, 2011).

This study examined the independent and cumulative effects of four non-academic domains previously found to help individuals overcome stressful situations and develop resilience: social connections, self-care, cognitive style, and regulatory and coping skills. The results of this research indicate that social connectedness and cognitive style were the most important predictors of students' stress during the transition to college. In fact, these two factors were each independently and directly related to students' level of stress during the first 6 weeks of college. These findings suggest the potential value of integrating resources and tools into FYE programs that explicitly help students build social connections and foster optimistic, efficacious cognitive styles. Emphasizing the importance of these types of social-emotional resilience strategies could effectively increase first year students' ability to cope with the stressors of college and thereby significantly increase students' academic and social-emotional adjustment at college as well as their persistence in postsecondary education.

The critical role of social connections found in this study is consistent with a large body of past research underscoring their value and importance for mental health and well-being. Social relationships provide key functions of support, intimacy, companionship, and affirmation that are essential throughout the lifetime, and particularly during stressful transitions (Furman & Buhrmester, 1985). In fact, Thoits (1986) posited that the threatening demands imposed by a stressor may be re-constructed if an individual believes that others will provide them with support to help deal with the stressful event. In such a case, the

negative effects of the stressor may be attenuated as people's belief in their own ability to cope with the event is strengthened as a result of perceived social support. Helping students build new social connections within the postsecondary environment would be expected to significantly improve both their adjustment to college and their likelihood of persisting in college to graduation. Given that evidence suggests even brief interventions promoting social connections and feelings of belongingness can have long-lasting, observable benefits for mental health and academic achievement (Walton & Cohen, 2011), incorporating strategies to build social connections into FYE programs may be particularly useful.

The current study's finding that cognitive style contributed considerably to college stress is also consistent with the literature across a broad array of areas of adjustment (Aspinwall & Taylor, 1992; Brissette, Scheier, & Carver, 2002; Park, Moore, Turner, & Adler, 1997; Shelby et al., 2008). Theory and research underlying cognitive-behavioral therapy (CBT) specify how cognitive appraisals of stressful situations directly impact stress and anxiety as well as behavioral responses (Seligman, Schulman, DeRubeis, & Hollon, 1999). Maladaptive thoughts concerning the absence of personal control and futility of one's actions are associated with academic problems as well as poor social-emotional adjustment (Fincham, Hokoda, & Sanders, 1989). Helping students revise their cognitive appraisals by altering the manner in which they interpret the cause of events and through development of learned optimism (belief that your actions are meaningful and you have personal control over events in your life) would be expected to increase academic persistence through greater confidence and feelings of control in the collegiate environment (Bandura, 1986; Multon, Brown, & Lent, 1991; Zimmerman, 1989). FYE programs could integrate cognitive resilience strategies to help students assess their cognitions related to difficult situations at college and revise these, as needed, to increase adaptation.

Counter to expectations, self-care and regulatory skills were not independently related to students' perceived stress when accounting for all resilience-promoting factors concurrently.

This finding may be attributable to the tendency for persons with optimistic and positive future orientations to be more likely to engage such thoughts in the service of regulating their emotions during periods of stress. Additionally, students with more positive outlooks may be more likely to take part in self-care behaviors in an effort to maximize their physical, emotional, and mental well-being in the future. The lack of findings supporting a unique effect for the accumulation of resilience resources is also noteworthy as it suggests that student stress can be effectively lowered through the bolstering of resources in any of the individual resilience-promoting domains.

While the exploratory analyses included in this study found no evidence of gender differences in the patterns of results, the largely female sample limited our ability to draw conclusions from these results. Future work with equitable sample sizes is needed to further assess whether gender differences exist in the factors that promote resilience in the face of stressful circumstances.

From the perspective of positive psychology, findings from this study suggest a way in which college officials and administrators may structure students' first-year seminars and orientation programs to promote the most positive development and outcomes during students' adjustment to college life. Currently, relatively little is known about how interventions to increase resilience for coping during the transition to college can be used to increase students' persistence in, and completion of, post-secondary education. This work is especially needed given recent research indicating that, on average, only 57% of students who enroll as freshmen at four-year institutions will graduate from that school within six years (Knapp, Kelly-Reid, & Ginder, 2011). One explanation for such high rates of post-secondary dropout is the inability for some students to adjust to and cope with the transition to postsecondary learning and the concomitant increase in stressors. Identifying characteristics that are associated with resilience and fostering development of those facets in students is crucial for promoting academic resilience and overall well-being.

Our results suggest that providing students the opportunity to develop social connections and learn optimistic and motivated thinking styles might be particularly helpful in promoting psychological well-being by preparing and assisting students in dealing with the transition to college. Future research should continue this line of study. In particular, longitudinal investigations of the impact of different resilience factors over the course of the first year of college would be extremely important to determine the relative impact of each of the four resilience factors over time. Also, investigations of FYE programs designed to increase social, cognitive, self-care, and behavioral coping skills are needed in order to inform the application of interventions focusing on specific resilience factors that can effectively benefit students' adjustment to college over time.

Acknowledgements

This research was funded in part by LEAD Pittsburgh and we would like to thank Sheila Fine, Toni Macpherson, Sean McGreevey, Lauren Raab, and Ashley Craig for their tireless efforts on this project. Additionally, we would like to thank the BNY Mellon Foundation of Southwestern Pennsylvania, Jewish Healthcare Foundation, The Giant Eagle Corporation, The Fine Foundation, The McQuinn Family Foundation, The Heinz Endowments, PNC Foundation, Mary Hillman Jennings Foun-

ation, Staunton Farm Foundation, and UPMC Healthcare for their generous support of this project. Finally, we would like to thank the Chatham University, Robert Morris University, Carlow University, Carnegie Mellon University and their students for taking the time to participate in this study.

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