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Hedonic and Eudaimonic Motives: Associations with Academic Achievement and Negative Emotional States among Urban College Students

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Abstract

College students from diverse ethnic and socioeconomic backgrounds are at risk for poorer academic outcomes and greater psychopathology and it is important to identify factors that are amenable to intervention and enhance college outcomes. Recent literature has entertained happiness as a potential predictor of various success outcomes and it has been suggested that parsing the concept of happiness into hedonia (seeking pleasure and relaxation) and eudaimonia (seeking meaning) may be particularly useful. This study examined the relations between hedonic and eudaimonic motives for action and student outcomes; that is, academic achievement and their negative emotional states, in an ethnically and socioeconomically diverse urban college population. Undergraduate students ($N=119$; mean age=21.24 [$SD=3.16$] years; 59.7 % female) completed self-reported measures of hedonic and eudaimonic motives for action, and depression, anxiety, and stress. Semester GPA was collected from school records. Hedonic motives for action ("Hedonia") were not associated with GPA or students' negative emotional states. Eudaimonic motives for action ("Eudaimonia"), however, were significantly positively associated with GPA. Individuals with high levels of both Hedonia and Eudaimonia (the Full Life) had higher GPAs compared to individuals with low Eudaimonia, but did not differ from students with high Eudaimonia and low Hedonia (Eudaimonic Life). Eudaimonia was also significantly negatively associated with Depression and Stress, and individuals high in Eudaimonia had the lowest levels of both of these outcomes compared to those with low Eudaimonia. Eudaimonic motives may be important for more desirable college outcomes, and interventions that promote development of this domain may hold promise.

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Keywords

hedonia; eudaimonia; college; academic success; stress; psychological distress

In the United States, obtaining a college education has long been associated with economic, social, and health benefits. From increased earnings to improved health (e.g., Perna, 2003; Mirowsky & Ross, 2003), benefits do not cease at the private level, but extend to the public, such as increased tax revenues and charitable giving, and decreased crime rates (Bloom, Hartley, & Rosovsky, 2007). In the context of these documented benefits, previous US government initiatives have focused on expanding access to college for students who have historically been underrepresented in the college setting (e.g., President Obama's 2020 Graduation Goal). However, beyond access, students' success in college is a necessary step toward achieving opportunities associated with a college degree. In a national survey of 4-year institutions, the National Center for Education Statistics reported that 46.9% of Black and 48.8% of Hispanic full-time students attained a degree within 6-years, compared to 68.9% and 72.8% of their White and Asian peers, respectively (Snyder, de Brey, & Dillow, 2016). This same report indicated that 49.5% of students who fell into the lowest income category at time of enrollment attained a degree within 6-years, compared to 76.8% of students who fell into the highest income category. These reports are concerning, and suggest not only that barriers to success exist within the college environment, but also that they disproportionately affect low SES or Black and Hispanic student populations.

Various extrinsic and intrinsic predictors of students' college outcomes have been identified. For example, the need to hold down a job outside of studying, family responsibilities, and cost of education are just some of the numerous external challenges students face when navigating their college careers (Cabrera, Nora, & Castañeda, 1992; Logan, Hughes, & Logan, 2016; Soria, Stebleton, & Huesman, 2013). Research on intrinsic predictors has traditionally focused on demographic characteristics and pre-college academic success (e.g., Wohlgemuth et al., 2006), but investigations have also looked at internalizing problems; that is, depression (Andrews & Wilding, 2004) and anxiety (Chapell et al., 2005). More recently studies have increasingly focused on the impact of non-intellective factors, such as motivation, self-regulation, and psychosocial factors (Richardson, Abraham, & Bond, 2012; Schneider & Preckel, 2017). This shift reflects a trend toward determining factors that may be amenable to change during the completion of post-secondary education (Robbins et al., 2004). However, relatively few studies have investigated these in the context of typically underrepresented student populations, for whom extrinsic obstacles may be particularly burdensome (Farruggia, Han, Watson, Moss, & Bottoms, 2016). Further research is required not only to distinguish factors that may predict students' college outcomes in these populations, but additionally, that may be modified through intervention.

In light of identified difficulties faced by underrepresented student populations attending college, research has focused on identifying ways to potentially improve students' educational attainment (e.g., Jury et al., 2017; Stephens, Hamedani, & Destin, 2014). Importantly, intervention studies have shown that non-cognitive mindset factors such as value-reappraisal, self-efficacy, and social-belonging can be changed (Acee & Weinstein,

2010; Bresó, Schaufeli, & Salanova, 2011), and that they can decrease the achievement gap between Latino and African American students and their White and Asian peers (Walton & Cohen, 2011). However, we are only beginning to understand the intricacies of how such factors shape student success. Strength- and resilience-based interventions offer another approach (e.g., Yeager & Dweck, 2012), consistent with positive psychology's focus on subjective experiences, positive individual traits, and civic virtues (Seligman & Csikszentmihalyi, 2000). Such psychological strengths may also predict academic achievement and emotional outcomes and could be implemented in interventions that seek to empower students to succeed in college. One such intrinsic resilience factor may be happiness.

Happiness has entered international discussion not only as an important goal of human functioning, but more recently, as a measure of social progress (Helliwell, Layard, & Sachs, 2015). Beyond being an important outcome in itself, investigations are beginning to elucidate happiness as a predictor of numerous outcomes. However, this research has used multifarious definitions that may not reflect the complexity of happiness (Delle Fave et al., 2016; Kim-Prieto, Diener, Tamir, Scollon, & Diener, 2005; Oishi, Graham, Kesebir, & Galinha, 2013), and in turn, may create a diffuse picture of this concept. A robust definition that has gained prominence in the literature—but that has not yet been widely investigated in relation to life outcomes—parses happiness into two distinct processes: eudaimonia and hedonia (Deci & Ryan, 2008; Henderson, Knight, & Richardson, 2013; Huta & Ryan, 2010; Peterson, Park, & Seligman, 2005).

One way of conceptualizing eudaimonia and hedonia involves viewing these processes as motivations for behavior, rather than affective states or outcomes. While hedonia is often described as an emotional state, synonymous with subjective wellbeing (Deci & Ryan, 2008), a more comprehensive definition that has been used in contemporary literature considers hedonia not as a state or outcome, but rather as seeking pleasure or comfort in the present moment, through physical, intellectual, or social means (Huta & Waterman, 2014; Waterman, 1993). The term eudaimonia dates back to Aristotle and can be conceptualized in terms of pursuits of higher order (Aristotle, 2001; Broadie, 1991). In the literature, eudaimonia has been described as future oriented with a focus on achievement, and involves seeking personal growth, and creating purpose and meaning for oneself and others (Deci & Ryan, 2008; Waterman, 1993; Ryff, 1989). Considered together, hedonia and eudaimonia, or hedonic and eudaimonic motives specifically, may present a more tenable approach to conceptualizing happiness because it takes into account the reason or motivation driving action, irrespective of the outcome of a particular action (Huta & Ryan, 2010). Using this conceptualization may further explain pathways of happiness to functional outcomes such as academic attainment in post-secondary education.

Various measures have been identified as key indicators of student success, including college grade point average, which is associated with student retention (Whalen, Saunders, & Shelley, 2010). In addition, psychological distress (i.e., anxiety and depression) and chronic stress are particularly salient for college populations and have been shown to interfere with academic performance (Andrews & Wilding, 2004; Eisenberg, Golberstein, & Hunt, 2009). In a national survey of college students' health, 54.7% of students reported experiencing

“more than average stress” or “tremendous stress” in the last 12 months (American College Health Association [ACHA], 2016). Further, 36.7% “felt so depressed it was difficult to function” and 58.4% “felt overwhelming anxiety” at some point within the last 12 months. In this same survey, 31.8% of students reported stress as a factor affecting their academic functioning, 23.2% reported anxiety, and 15.4% reported depression affecting their academic functioning (ACHA, 2016). These reports show not only the magnitude of levels of stress, anxiety, and depression experienced by students, but also, that students have self-identified these experiences as inhibiting their success.

These experiences may be magnified for students who come from low-income families or are first in their families to attend college (Engle & Tinto, 2008), or for students from minority groups (Eisenberg, Hunt, & Speer, 2013). A survey of 567 undergraduate students at an ethnically diverse public college reported that 22.3% and 26.8% of student ratings fell into moderate to severe categories of depression and anxiety, compared to 14.5% and 17.8% of student ratings in a national college student survey (Mokrue & Acri, 2015). Similarly, Stebleton, Soria, and Huesman (2014) found that first generation college students experienced higher levels of depression and stress than their non-first generation counterparts. Further, lower SES students have been found to exhibit heightened physiological stress responses and poorer test performance compared to their higher SES peers (John-Henderson, Rheinschmidt, Mendoza-Denton, & Francis, 2014). Thus, negative emotional states can exert a powerful impact on learning and academic success, especially in underrepresented populations (Douce & Keeling, 2014). Beyond this impact, negative emotional states experienced in this setting may have further implications outside of college and in future pursuits. It is the responsibility of post-secondary institutions to ensure that students who present with these symptoms are offered supports (Douce & Keeling, 2014). Hence, identifying factors that may also predict negative emotional states, in addition to achievement, is essential to inform interventions offered by institutions of higher education.

It has been suggested that psychological outcomes such as negative emotional states may be ameliorated via emotion regulation strategies (Martin & Dahlen, 2005; Campbell-Sills & Barlow, 2007). Incorporating such strategies alone into interventions may not be enough to help individuals improve their wellbeing. Recently, Tamir (2016) highlighted the importance studying motives behind emotion regulation and described both hedonia and eudaimonia as possible motives driving an individual to regulate their emotions. Hedonic and eudaimonic motives may thus play an important role in ameliorating negative emotional states including depression, anxiety, and stress. For example, a recent study showed that eudaimonic motivation had a protective effect on anxiety in adults supporting individuals with autism spectrum conditions (Merrick, Grieve, & Cogan, 2016). Furthermore, positive psychology interventions incorporate strategies reflective of eudaimonic motivation, that is, engendering meaning and direction in the day to day life, and have been shown to reduce recurrent relapses in the treatment of depression (Santos et al., 2013). Examining the relationship between hedonic and eudaimonic motives and negative emotional outcomes in college students may thus be a meaningful investigation.

Such motives may also influence academic performance more directly. Considering the future-oriented features of goal-achievement that encompass eudaimonic motivation, it may

be that these motives are associated with life success in general, and academic performance specifically. However, eudaimonically-oriented motives, at their extreme, may conceivably lead to overexertion and burnout (Shanafelt et al., 2012). On the other hand, consistent with findings showing that excessive hedonistic lifestyle may interfere with success (Jeynes, 2002), hedonic motives, when considered on their own, may be negatively associated with academic success. Considering the combined effects of hedonic and eudaimonic orientations may therefore be more fruitful. High hedonic motives, in the context of a goal-oriented, eudaimonic outlook, may provide balance and reduce stress, therefore increasing the likelihood for positive outcomes. Thus, an eudaimonically-oriented individual who is also is also highly motivated by hedonic pursuits may be able to create a life balance that is necessary to prevent burnout and for sustained success (Dunn, Iglewicz, & Moutier, 2008; Maslach & Goldberg, 1998). It is thus possible that high levels of both hedonic and eudaimonic motivations (coined as the “Full Life” in previous literature, e.g., Huta & Ryan, 2010) will manifest the best student outcomes compared to the other groups.

The scientific investigation of this type of integration of hedonic and eudaimonic perspectives into a common pathway toward desirable life outcomes is still at its inception. Nonetheless, extant evidence suggests that the combination of these constructs may account for improved outcomes, such as greater levels of reported wellbeing, compared to each construct experienced separately (Huta & Ryan, 2010). For example, individuals who have high levels of both hedonic and eudaimonic motivations (the “Full Life”) may show better wellbeing outcomes, such as life satisfaction, positive affect, carefreeness, meaning, and flourishing compared to individuals who have low levels of both (the “Empty Life”), or a combination of low and high levels (Huta & Ryan, 2010; Peterson, Park, & Seligman, 2005). However, further investigation is needed to explore hedonic and eudaimonic motives as separate predictors, and how they interact, with respect to academic and emotional outcomes.

The present study attempts to further elucidate these relations by investigating hedonic and eudaimonic motives as predictors of academic achievement and negative emotional states in a sample of college students with diverse cultural and socioeconomic backgrounds. Both academic achievement and emotional outcomes are vital contributors to successful college completion and therefore important to investigate, particularly in this vulnerable population. End of semester GPA served as a measure of academic achievement and is one factor that contributes to overall college success (Whalen, Saunders, & Shelley, 2010). Additionally, we examined students’ negative emotional states, defined as levels of depression, anxiety and stress. These emotional states have been shown to influence college outcomes (Andrews & Wilding, 2004; Eisenberg, Golberstein, & Hunt, 2009). Building on previous evidence that hedonic and eudaimonic motives are associated with positive life outcomes, we investigated to what extent they contribute to these student outcomes. To expand current research on eudaimonic and hedonic motives, we first investigated these concepts separately, and then used the Full Life hypothesis to investigate their combined effect. We hypothesized that: (1) eudaimonic motives would be positively related to GPA; (2) that the Full Life group (high in both hedonic and eudaimonic motives) would have the highest GPA among the groups; (3) that both hedonic and eudaimonic motives would be associated with lower levels of stress and psychological distress; and (4) that emotional outcomes as a whole would differ among

groups, such that the Full Life would be associated with the best outcomes (i.e., lowest depression, anxiety, and stress) compared to the other groups. In the absence of other literature looking at hedonic and eudaimonic motives in relation to negative emotional outcomes and academic success, we did not specify hypotheses regarding differences among the other groups (i.e., Empty Life, Eudaimonic Life, and Hedonic Life), and analyses were exploratory.

Methods

Participants

Participants included 119 undergraduate students at an urban public senior college in the North Eastern US. The majority ($n=71$, 59.7%) of the sample identified as female and participants' ages ranged from 18–30 years ($\text{mean}=21.24$, $\text{SD}=3.16$). Table 1 summarizes key demographic variables and demonstrates diversity in the present sample with respect to self-identified racial and ethnic background and socioeconomic status. Approximately one third ($n=42$, 35.3%) of participants self-identified as Hispanic/Latino. With respect to race, 26 (21.8%) of participants identified as White; 20 (16.8%) as Black or African American; 34 (28.6%) as Asian; and 37 (31.1%) identified as belonging to another group; that is, Hispanic ($n=9$), Dominican ($n=5$), Puerto Rican ($n=4$), Caribbean ($n=4$), Mexican ($n=5$), South American ($n=3$), South Asian ($n=2$), Middle Eastern ($n=3$), and of multiple races ($n=2$). Two students chose not to disclose race.

The clear majority of students (85.8%) lived in households with two or more bedrooms, and the mean (SD) number of individuals living at their residence was 4.18 (1.44), consistent with the institution being a commuter college where the overwhelming majority of students live off campus. Participants' socioeconomic status, estimated from household income, was variable. More than half of the participants in our sample (52.8%) reported household incomes of less than \$40,000 per annum, which is lower than the NYC median income of \$53,373 (U.S. Census Bureau, 2015), while 10.4% placed themselves in the >\$100,000 category.

The majority of the participants (84%) were full-time students. One third (35.3%) of our sample were in their first year of college; 15.1% were in their second year; 26.9% in their third year; 16.0% were in their fourth year; and 6.7% had been in college for more than four years.

Participants were excluded if they were outside the age range of 18–35 years ($n=1$), not at the undergraduate level ($n=1$), not fluent in English ($n=0$), and if they did not consent to their GPA being retrieved from college records ($n=0$). The data presented here represent a subsection of a larger study in which neuropsychological correlates of happiness were assessed. Therefore, to ensure homogeneity of the sample with respect to intellectual functioning, participants were excluded if their intellectual functioning, estimated using the Matrix Reasoning subtest of the Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999) was two or more standard deviations below the mean ($n=4$).

Materials

Hedonic Eudaimonic Motives for Activities (HEMA) scale (Huta & Ryan, 2010).

—This 9-item self-report questionnaire was used to assess hedonic and eudaimonic motives. Participants were asked to what degree they typically approach daily activities with the suggested intention on a seven point Likert scale (1 = “not at all” to 7 = “very much”). Four intention items are related to eudaimonic motives (e.g., “to develop a skill, learn, or gain insight into something”), and five to hedonic motives (e.g., “pleasure”). The questionnaire generates one score for each construct by averaging all items on each scale, with higher scores indicating greater levels of eudaimonic and hedonic motives (“Eudaimonia” and “Hedonia,” respectively). In this paper, the terms “Eudaimonia” and “Hedonia” refer to scores generated from each scale respectively, which in turn reflect eudaimonic and hedonic motives rather than subjective feeling states. Cronbach’s alpha estimates were 0.79 for Hedonia and 0.75 for Eudaimonia.

Current semester GPA.—Participants’ grade point average (GPA) for current semester was obtained through college academic records at the end of the academic semester during which the students participated. GPA was measured on a scale from 0 to 4, with higher scores indicating stronger academic performance.

Depression, Anxiety, and Stress Scale (DASS, Lovibond & Lovibond, 1995).—

This 42-item self-report questionnaire was used to assess negative emotional states. For each item, participants rated the degree to which it applied to them in the last week using a 4-point Likert scale (0 = “did not apply to me at all” to 3 = “applied to me very much or most of the time”). The DASS includes three subscales that assess both psychological and physiological symptoms of depression (e.g., “I couldn’t seem to experience any positive feeling at all”), anxiety (e.g., “I felt scared for no reason”), and stress (e.g., “I found myself getting upset by quite trivial things”). This measure was introduced later into the study and therefore only 87 participants completed it. Individuals for whom DASS data was available did not differ significantly in key variables from individuals for whom these data were missing (i.e., GPA, Hedonia, Eudaimonia, gender distribution, ethnicity, race, household size, and household income), except for age ($p = .03$); individuals for whom the DASS was missing were older. DASS data collection took place mostly during the fall semester when more freshmen participated in the study compared to the previous semester when DASS data collection had not yet started (42.2% versus 21.9%). In the current sample, Cronbach’s alpha estimates were 0.93, 0.86, 0.89 for depression, anxiety, and stress, respectively.

Socioeconomic Status.—Participants’ self-reported the number of people living in their household, as well as annual household income, according to 1 of 6 bands (<\$10,000; 10,000–19,999.99; \$20,000–39,999.99; \$40,000–\$69,999.99; \$70,000–\$99,999.99; and \$100,000). The income-to-needs ratio for each household was then calculated, adapted from Barch et al. (2016), by dividing the mid-point of each participant’s annual household income band by the federal poverty level for the number of residents in the household. Higher values indicate higher SES.

Procedure

Prospective participants were recruited online through the Psychology Department subject pool and flyers posted around campus. Participants attended a single 1.5-hour session in the laboratory during which they completed a demographic form, and the HEMA and DASS questionnaires as part of a larger battery of tasks. Upon completion of the session, participants were compensated for their time. Participants who responded to flyers were entered into a draw for a \$150 gift card. Participants who signed up through the subject pool earned course credit or extra credit, as determined by their instructor. GPA was obtained from college records at the end of the academic semester. The University's Institutional Review Board approved this study. All participants completed oral and written consenting procedures.

Statistical Analyses

ANOVA and regression analyses were conducted in STATA version 12.1 and for all other analyses, SPSS version 23 was used. To assess bivariate correlations among Hedonia, Eudaimonia, GPA and the negative emotional state variables (depression, anxiety and stress), Spearman's correlation coefficient was used due to the non-normal distributions of these variables (i.e., z-score of skew and/or kurtosis statistic exceeded an absolute value 1.96). Non-transformed raw scores of the variables were used for these correlations. To evaluate statistical models, the outcome variables were corrected for deviations from normality. A box-cox transformation was conducted for GPA and a square root transformation for depression, anxiety, and stress.

To assess the Full Life hypothesis, participants were assigned to "happiness groups" (i.e., Full Life, Empty Life, Hedonic Life, and Eudaimonic Life) based on their Hedonia and Eudaimonia scores. Following Huta and Ryan's (2010) method of stratifying Full Life, Empty Life, Hedonic Life, and Eudaimonic Life groups, a median split was applied to the raw, untransformed scores of both the Hedonia and Eudaimonia scales. Individuals were then assigned to groups as follows: individuals with scores at or above the median on both Hedonia and Eudaimonia were assigned to the Full Life group; those with scores below the median on both variables were assigned to the Empty Life group; those with a Hedonia score at or above the median and a Eudaimonia score below the median were assigned to the Hedonic Life group; finally, individuals with a Eudaimonia score at or above the median, and a Hedonia score below the median were assigned to the Eudaimonic Life group.

To test the Full Life hypothesis in relation to GPA, Analysis of Variance (ANOVA) was performed. As it was hypothesized that the Full Life group would have the best GPA among the students, planned a-priori contrasts were conducted comparing the Full Life to all the other groups combined (Empty, Hedonic, and Eudaimonic Life), to each of the other groups separately, to the Low Eudaimonia groups combined (Empty Life and Hedonic Life), and to the Low Hedonia groups combined (Empty Life and Eudaimonic Life). These comparisons were protected from Type I error in a family-wise fashion using Bonferroni correction. Post-hoc Tukey corrected pair-wise comparisons were also conducted to evaluate whether groups other than the Full Life group differed from each other. Second, given the greater power derived from using continuous variables, GPA was regressed on to Hedonia and

Eudaimonia. Residuals were carefully examined for normality and influential cases. To account for the effect of influential cases a robust regression method was applied with non-transformed GPA as the outcome variable.

Next, a Multivariate Analysis of Variance (MANOVA) was conducted to determine differences in negative emotional states (i.e., depression, anxiety, and stress) among the happiness groups. A discriminant function analysis was conducted to further examine significant omnibus results.

For all analyses, assumptions inherent to the tests (e.g., normality, equality of variance, equality of covariance matrices) were verified during the analyses. Additionally, effect sizes were calculated using η^2 for ANOVAs and regression analyses and partial η^2 for MANOVAs.

Results

Hedonic and Eudaimonic Motives

Based on the 7-point Likert scale, the median Hedonia score in the overall sample was 5.2; the median Eudaimonia score was 6.0. Hedonia and Eudaimonia were not significantly correlated with each other, $r_s = .09$, $p = .34$. This was expected as the questionnaire was developed specifically to distinguish hedonic from eudaimonic motives, and correlations of similar magnitude have been reported in previous studies utilizing this questionnaire (e.g., Huta & Ryan, 2010).

Age was positively skewed in our sample thus Spearman's rho was calculated to evaluate the association between age and the raw happiness variables. Age was significantly associated with Eudaimonia, $r_s = .20$, $p = .03$, such that older students tended to rate themselves higher on the Eudaimonia items of the HEMA questionnaire. Although this finding differs from Huta and Ryan (2010) who found that age was not related to Eudaimonia, in our sample the magnitude of the association is weak, as demonstrated by the small effect size. Consistent with Huta and Ryan (2010), Hedonia was not significantly correlated with age, $r_s = .13$, $p = .15$.

Using a median split of both scales generated four HEMA groups; 35 individuals (29.4%) fell into the Full Life group (scores at or above the median on both Hedonia and Eudaimonia scales), 30 (25.2%) into the Eudaimonia Life group (scores at or above the median on Eudaimonia, but below the median on Hedonia), 31 (26.1%) into the Hedonic Life group (scores below the median on Eudaimonia, but at or above the median on Hedonia), and 23 (19.3%) fell into the Empty Life group (scores below the median on both Hedonia and Eudaimonia scales).

Academic Outcomes

The mean (SD) end of semester GPA was 2.98 (0.76), equivalent to a B letter grade. GPA ranged from 0.86 to 4.00 and the distribution was negatively skewed.

Depression, Anxiety, and Stress

Most of our sample fell within the normal range for depression, anxiety, and stress (67.8%, 65.5%, and 70.1%, respectively), although a notable number of students scored in the Severe or Extremely Severe ranges for Depression (12.6%), Anxiety (11.5%), and Stress (6.9%) (1995). There were significant positive relations among the DASS scales, such that individuals who scored higher on one scale also tended to score higher on the other two scales. Moderate-high effect sizes were observed in the relations between Depression and Anxiety ($r_s = .59, p < .001$) and Depression and Stress ($r_s = .61, p < .001$). The relation between Anxiety and Stress was of large magnitude ($r_s = .67, p < .001$).

The Relation between Happiness Motives and College Outcomes

Happiness motives and academic achievement.—The present study investigated whether the happiness constructs, that is, hedonic and eudaimonic motives for activities, were related to academic achievement, as defined by end of semester GPA. Eudaimonia was significantly correlated with GPA, $r_s = .24, p = .01$. Individuals who scored higher on Eudaimonia tended to have higher GPAs. No significant relation was observed between Hedonia and GPA ($r_s = -.16, p = .08$).

Using the box-cox transformed GPA score as the outcome variable, a one-way ANOVA revealed significant differences in GPA as a function of the four happiness groups, $F(3, 115) = 4.06, p < .01, \eta^2 = .10$, of medium to large effect (see Figure 1). To explore the hypothesis of the Full Life individuals having the best GPA outcome within this student sample, the mean GPA of the Full Life group was compared to the mean of all the other groups (Empty, Hedonic, and Eudaimonic). Planned a-priori pair-wise contrasts were also conducted comparing the Full Life group to each of the other groups (Empty, Hedonic, and Eudaimonic). Additionally, to obtain a more complete picture of how Full Life individuals compare to other constellations of students, the Full Life group was compared to the mean of the Low Hedonia groups (Empty Life and Eudaimonic Life) and the mean of the Low Eudaimonia groups (Empty Life and Hedonic Life). These planned contrasts revealed significant per comparison differences between the Full Life group and the Empty Life group ($p = 0.03$) and the Full Life group and the mean of the Low Eudaimonia groups ($p = 0.04$) such that the Full Life group had higher GPA. These significant per-comparison results do not survive Bonferroni correction for multiple comparisons however, and should therefore be interpreted with caution. To evaluate whether groups other than the Full Life groups differed from each other, post-hoc Tukey-corrected pairwise comparisons were conducted and revealed that the Eudaimonic Life group mean GPA of 3.27 was significantly higher compared to the Empty Life group mean GPA of 2.68 ($p < .05$). None of the other Tukey-corrected pairwise comparisons were significant, including the Eudaimonic and Full life group. Results remained significant after controlling for age.

The relationship between eudaimonic and hedonic motives for action and GPA was further explored via regression analysis, using both Hedonia and Eudaimonia as continuous explanatory variables of GPA. After examining the residuals of the model predicting the box-cox transformed GPA variable, at least one influential case remained. The regression was subsequently conducted using STATA's robust regression option with non-transformed

GPA as the outcome variable to account for these influential cases. This yielded a model that significantly predicted GPA ($F_{2,116} = 5.05, p = 0.008$). There was a significant main effect of Eudaimonia on GPA, controlling for Hedonia ($t_{116} = 2.82, p = 0.006$). The main effect of Hedonia on GPA, controlling for Eudaimonia, was not significant ($t_{116} = -1.87, p = 0.063$). After controlling for age these results remained significant. Results also remained unchanged after controlling for socioeconomic status, which was defined as the income-to-needs ratio (Barch et al., 2016).

Happiness motives and negative emotional states.—There was a significant negative correlation between Eudaimonia and Depression ($r_s = -.41, p < .001$) and Eudaimonia and Stress ($r_s = -.24, p = .03$), such that as Eudaimonia increases, Depression and Stress decrease. No significant association was observed between Eudaimonia and Anxiety, $r_s = -.12, p = .25$. Similarly, there were no significant associations between Hedonia and Depression, Anxiety, or Stress ($r_s = -.16$ to $-.06$, all $ps > .10$).

Mean Depression, Anxiety, and Stress among the four happiness groups are displayed in Figure 2. To assess whether the happiness groups differed in negative emotional states (i.e., depression, anxiety, and stress), a MANOVA was performed entering the three square root transformed DASS subscales as outcome variables. The overall model was significant and had a medium effect size, $V = .24, F = 2.39, p < .05$, partial $\eta^2 = .08$.¹

We performed a discriminant function analysis to further examine the interactions among the negative emotional state variables and how they differ among the four groups (Field, 2009). Three discriminant functions were revealed: the first explained 98.4% of the variance, canonical $R^2 = .48$; the second explained 1.2% of the variance, canonical $R^2 = .06$; and the third was very small explaining only 0.4% of the variance. These discriminant functions, in combination, significantly differentiated the groups, $\Lambda = .76, \chi^2(9) = 22.32, p < .01$, but removing the first function indicated that the second and third functions did not significantly differentiate groups, $\Lambda = .99, \chi^2(4) = 2.79, p > .05$, therefore, only the first function is discussed in more detail. This function demonstrates that depression and stress follow a similar pattern whereby the highest levels are seen in the Empty Life group and the lowest levels in the Full and Eudaimonic Life groups, with intermediate levels in the Hedonic Life group (Figure 2).

Discussion

The current study explored to what extent happiness motives were associated with outcomes relevant to college students, specifically academic achievement (as measured by end of semester GPA) and negative emotional states (as defined by levels of depression, anxiety, and stress) in a sample of ethnically and socioeconomically diverse urban college students. Hedonic and eudaimonic motives for activities were investigated both separately and jointly. Combined effects of happiness orientations on academic achievement and negative emotional states were assessed by separating the sample into four happiness groups that

¹In light of the finding that individuals who did not complete the DASS were older than those who did complete the measure, a MANCOVA was run, with three square root transformed DASS subscales as outcome variables, and age as a covariate. No change in findings was observed. Similarly, no changes to the results were observed when controlling for SES.

varied in levels of hedonic and eudaimonic motives: the Full Life, the Eudaimonic Life, the Hedonic Life, and the Empty Life.

It was predicted that GPA would be positively associated with eudaimonic motives and that the Full Life group would have the highest GPA. Results showed that, indeed, higher levels of Eudaimonia were associated with higher GPA, while Hedonia was not associated with GPA. Furthermore, the data suggest that the GPA of individuals living the Full Life was higher than those living the Empty Life, and those low in Eudaimonia overall, although these results should be treated with caution as they did not survive correction for multiple comparisons. The prediction that the Full Life group would have the highest GPA of all groups was not supported. The Eudaimonic Life group had a mean GPA equivalent to a B+, which was not significantly different from the Full Life group, which had a mean GPA equivalent to a B letter grade. The association between happiness motives and GPA was further explored using continuous levels of Hedonia and Eudaimonia as predictors of GPA. Higher Eudaimonia was associated with higher GPA, but Hedonia and GPA were not significantly related. This may indicate that although eudaimonic motives are particularly important for academic achievement, hedonic motives do not interfere with it.

This finding adds to the literature because in prior work, happiness has been characterized as a concept with no direct relation to scholastic success and has even been used as a discriminant validation factor in the development of the widely used subjective wellbeing questionnaire (Lyubomirsky & Lepper, 1999). Our results show that parsing happiness into its separate hedonic and eudaimonic components, and by looking at the integration of these constructs by defining them as motives for action helps provide a clearer understanding of the association between happiness and academic success. The finding from the current study is supported by Okun, Levy, Karoly, and Ruehlman (2009), who used structural equation modeling to show that commitment to college mediated the relation between dispositional happiness and GPA. Furthermore, goal striving was also positively correlated to both dispositional happiness and GPA (Okun et al., 2009). Eudaimonic motives encompass striving for excellence and the desire to develop the best in oneself and may be reflected in goal striving and commitment to college. It is possible that college students who are able to engender eudaimonic motives in their lives build a fertile foundation for a successful college trajectory.

In addition to academic success, we also evaluated negative emotional states with respect to hedonic and eudaimonic motives. It was predicted that higher hedonic and eudaimonic motives would be associated with lower depression, anxiety, and stress. Our results demonstrated that in our sample, higher Eudaimonia, but not Hedonia was associated with lower Depression. This finding is in line with a study by Telzer, Fuligni, Lieberman, and Galván (2014), which showed that neural sensitivity to eudaimonic and hedonic rewards differentially predicted adolescent depressive symptoms over time, such that individuals who have greater ventromedial activity in response to eudaimonic decisions are more likely to have a decline in depressive symptoms over time (Telzer et al., 2014). In another study, Henderson et al. (2013) looked at hedonic and eudaimonic behaviors in relation to negative emotional states. They found that hedonic behaviors, but not eudaimonic behaviors, were negatively associated with depression and stress. Their study differed from the present study

in two important ways. First, they assessed behaviors rather than motives for action. It is possible that motives versus behaviors have different effects; the shared and unique contributions of hedonic and eudaimonic motives versus behaviors to emotional outcomes are yet to be explored. Second, their sample consisted of community dwelling adults, who may benefit from different happiness orientations. It is possible that a hedonic orientation may not exert a protective effect on depression and stress in college, but that in an academic environment, a eudaimonic orientation is more important for emotional outcomes.

It was also predicted that emotional outcomes, specifically the negative emotional states, depression, anxiety, and stress, would differ among happiness groups, and that compared to other groups, the Full Life would be associated with the best emotional outcomes (i.e., lowest depression, anxiety, and stress). The groups differed significantly in emotional outcomes, but it is unclear if Full Life individuals indeed garner the most benefit. The discriminant function analysis showed that close to 98% of variance among groups is accounted for by differences in Depression and Stress. Specifically, Depression and Stress trends among the groups follow a similar direction: there is an increasing trend in both Depression and Stress from the Full and Eudaimonic Life, to the Hedonic and to the Empty Life groups. Full and Eudaimonic Life individuals were almost identical with respect to self-reported Depression, Anxiety, and Stress.

Few other studies have investigated the combined effect of these distress constructs in relation to hedonic and eudaimonic motives specifically, and more broadly, have not incorporated both positive and negative aspects of emotional functioning when examining relations to these orientations. This study investigated stress and psychological distress, which does not account for the presence of positive dimensions of wellbeing. These are also essential to consider. Peterson et al. (2005) found that simultaneous pursuit of pleasure (hedonia), meaning (eudaimonia), and engagement (flow) was associated with the highest degree of life satisfaction—one aspect of wellbeing. Furthermore, Huta and Ryan (2010) in their validation study of the HEMA questionnaire, which was also utilized to assess hedonic and eudaimonic motives in the present study, demonstrated that among the four happiness groups, individuals living the Full Life were highest in positive affect, life meaning, elevating experience, and vitality. Specifically, they found that Full Life individuals differed significantly from Empty Life individuals in these constructs. In light of the complexity of wellbeing as a construct, future studies should look at hedonic and eudaimonic motives in association with a comprehensive assessment of wellbeing that incorporates psychological, physical, social, spiritual, and economic factors.

Overall, the present study suggests that eudaimonic motives are particularly important for emotional outcomes in this diverse college population. With college life being associated with the pressure to succeed, individuals with high eudaimonic motives may hold an advantage. In light of these results, interventions that seek to increase eudaimonic motives, in particular, could be used strategically in the academic setting to support student outcomes. Huta (2015) suggests authenticity, meaning, excellence, and growth as steps towards eudaimonia, implicating one route to pursuing eudaimonia in practice. This intervention approach is particularly important to address in diverse student populations, who may disproportionately be met with barriers to success in higher education. Understanding

possible sources of stress and psychological distress in this population may provide further insight into how these interventions may be structured. Previous research has focused on issues of identity (e.g., feelings of not belonging, or not deserving to participate in higher education) and associations with emotional outcomes (Cokley, McClain, Enciso, & Martinez, 2013) with implications that interventions may be fruitful. For example, Walton and Cohen (2011) showed that a brief social-belonging intervention improved academic outcomes, cutting the achievement gap between African-American and European-American students in half, in addition to demonstrating improvements in multiple health and wellbeing outcomes observed over a three-year period post-intervention. Another longitudinal study looked at the effects of a skills support program on academic motivation and achievement in economically and educationally disadvantaged first generation college students (Wibrowski, Matthews, & Kitsantas, 2016). The authors found that students in the program were able to significantly improve motivation compared to baseline and achieve higher GPA in the end of the first, second, and third years of college compared to regularly admitted students. Strategies that focus on modifying thoughts and behaviors related to happiness have also been shown to be effective in increasing happiness and resilience (Lyubomirsky & Della Porta, 2010). One study, for example, showed that a well-being intervention significantly improved eudaimonic well-being in a mixed sample of city employees and students (Mills, Fullagar & Culbertson, 2016). These examples show that interventions can improve achievement and motivation in diverse student populations and that changes in happiness-related constructs are also possible. Thus, interventions that incorporate strategies to engender eudaimonic motivation specifically may support students in their efforts toward academic success, especially if they are fine-tuned to circumstances that are salient to diverse populations.

There are several limitations to this study that warrant discussion. First, any conclusions about potential causality should be made with caution. While we defined academic success and negative emotional states (i.e., levels of depression, anxiety, and stress) as outcomes of hedonic and eudaimonic motives, it is possible that such motives result from academic success, and stress and psychological distress. However, as our happiness measure was phrased to assess trait-like, or longstanding motives for action, and GPA was not collected until the end of the semester, there is evidence to suggest that happiness exerted an effect on GPA and not vice versa. As such, future work should explore the influence of eudaimonic and hedonic motives for action across time.

Furthermore, although it was demonstrated that eudaimonic motives are significantly associated with academic achievement, it was quantified solely via the GPA of one semester, and it is unclear to what extent this example of achievement may translate to other areas of life, or whether it is applicable to life outside of college in the long term. Future studies should therefore follow urban college students longitudinally and examine college retention and graduation GPA as comprehensive measures of academic success, and include other common life success indices such as health, income, altruistic behaviors, and employment.

In this context, it is also important to further investigate the interplay of eudaimonic and hedonic motives across time. Evidence suggests that hedonic motives are grounded in the present, while eudaimonic motives may contribute to long-term goals (Huta, 2016). It may,

therefore, be of particular interest to examine how the willingness to sacrifice basic present-grounded pleasure needs in exchange for reaching a desired future state may be particularly relevant to the achievement of such future-oriented outcomes (Huta, 2016).

Another important limitation of this study is the sample size. For our measure of depression, anxiety, and stress we only collected data from 87 students; nevertheless, we found a significant effect of happiness-related motives on stress and psychological distress, which adds to the literature especially in light of our diverse population. Future work with larger samples should explore how the effects of hedonic and eudaimonic motives may differ across different cultural and socioeconomic populations. Of note is also that the internal consistency of the HEMA scale was in the lower range of acceptable Cronbach alpha values (i.e., 0.79 for Hedonia and 0.75 for Eudaimonia). In Huta and Ryan's (2010) validation study of the HEMA scale alpha values were 0.85 and 0.82, respectively. It is possible that in our culturally diverse college sample answers to HEMA items were more variable. Future studies should look at the psychometric properties of the measure in minority populations more closely.

It should also be re-emphasized that our measure of hedonia and eudaimonia is assessing motives for activities rather than hedonic and eudaimonic behaviors. It is arguable that motives alone do not lead to outcomes, but rather that behaviors exert an effect on outcomes. While motives are certainly an integral part of actions, there are other factors that influence what individuals do despite their intentions. Such extraneous factors may include life circumstances, influence of other people, and illness. Nevertheless, hedonic and eudaimonic motives are conceivably related to the amount of time spent engaging in behaviors mirroring hedonic and eudaimonic pursuits. Future studies should measure both motives and behaviors and relate them to each other and to a variety of life outcomes to identify if motives and activities are both useful predictors of long-term life success.

Despite these limitations this study contributes to the literature and several strengths should be pointed out. First, this study used objective measures of academic success (i.e., GPA derived from academic records) while self-report is the norm in this area of research. Furthermore, the sample is culturally and ethnically diverse, which allows for more generalizable conclusions of the applicability of the findings as previous studies of this kind have been conducted at universities with a predominantly White population.

In conclusion, this study identified that in a diverse urban college population levels of eudaimonic motives may influence both GPA and emotional outcomes, both of which are important indicators of college success. It also appears that hedonic motives may not be associated with college success. As completion of a college degree is essential for both private and public gains, it is a priority for institutions of higher education to identify students at-risk and implement interventions that will not only empower students to succeed during their pursuit of higher education, but also beyond the educational setting. Efforts to foster eudaimonic motives for action in the college setting provides one promising intervention approach.

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Figure 1.
Mean (± 1 SE) GPA by happiness groups.

Figure 2.
Mean (± 1 SE) depression, anxiety, and stress score by happiness group.

Table 1.

Demographic characteristics of participants, overall and among happiness groups.

	Total (n = 119) ^a		Full Life (n = 35)		Eudaimonic Life (n = 30)		Hedonic Life (n = 31)		Empty Life (n = 23)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age	21.24	3.16	21.42	2.83	22.09	4.19	20.59	2.51	20.73	2.74
MR T-Score	51.16	7.25	50.17	7.83	51.52	7.91	52.10	6.57	50.95	6.52
	N	%	N	%	N	%	N	%	N	%
Female	71	59.7	24	68.6	18	60.0	18	58.1	11	47.8
Hispanic or Latino	42	35.3	16	45.7	10	33.3	7	22.6	9	39.1
Race										
Asian	34	28.6	9	25.7	7	23.0	13	41.9	5	21.7
Black/African American	20	16.8	6	17.1	3	10.0	4	12.9	7	30.4
White	26	21.8	7	20.0	9	30.0	6	19.4	4	17.4
Other	37	31.1	13	37.1	9	30.0	8	25.8	7	30.4
Bedrooms per household										
Studio	1	0.8	1	2.9	0	0	0	0	0	0
One	15	12.6	6	17.1	4	13.3	3	9.7	2	8.7
Two	42	35.3	12	34.3	8	26.7	10	32.3	12	52.2
Three	28	31.9	10	28.6	15	50.0	7	22.6	6	26.1
Four or more	23	19.3	6	17.1	3	10.0	11	35.5	3	13.0
Household income										
<\$10,000	4	3.4	1	2.9	1	3.3	1	3.2	1	4.3
\$10,000 - \$24,999	27	22.7	6	17.1	9	30.0	6	19.4	6	26.1
\$25,000 - \$39,999	29	24.4	12	34.3	6	20.0	7	22.6	4	17.4
\$40,000 - \$69,999	28	23.5	5	14.3	8	26.7	9	29.0	6	26.1
\$70,000 - \$99,999	17	14.3	5	14.3	5	16.7	4	12.9	3	8.7
>\$100,000	13	10.9	6	17.1	1	3.3	4	12.9	2	11.8

^aNs may differ due to missing values.

N = frequency; SD = standard deviation; GPA = Grade Point Average; MR = Matrix Reasoning

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