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Examining Links from Civic Engagement to Daily Well-Being from a Self-Determination  
Theory Perspective

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**Abstract**

Civic engagement may benefit individuals who engage in it, yet empirical evidence is lacking. We examined whether civic engagement was associated with well-being in a seven-day daily diary study of 276 college students. Based on self-determination theory, we hypothesized that satisfaction of basic psychological needs mediates the link between civic engagement and well-being. Four types of civic engagement – helping, pro-environmental behavior, volunteering, and charitable giving – were examined as separate predictors and as a composite predictor of daily well-being. The composite was associated with higher well-being across days, and basic needs satisfaction had a significant indirect effect on this association. Helping and pro-environmental behavior were linked to daily well-being directly and indirectly through basic needs satisfaction. No effects were evident for volunteering or charitable giving. Results suggest that civic engagement may enhance well-being, although some types of civic engagement may enhance well-being more than others.

Keywords: life satisfaction; vitality; affect; mental health; community service; prosocial behavior

Examining Links from Civic Engagement to Daily Well-Being from a Self-Determination  
Theory Perspective

Civic engagement – political and prosocial contributions to community and society – is essential for healthy democracy: Engaged citizens can solve social problems and enhance the well-being and equity of communities and society (Levine, 2013). Whether civic engagement benefits individuals who engage in it, however, is an age-old question. Civic engagement has long been considered a key ingredient to a life well-lived; Aristotle (350 B.C./1985) described active engagement in civic life as necessary for achieving flourishing and happiness, and contemporary theorists argue that civic engagement enhances well-being (Flanagan & Bundick, 2011; Hart et al., 2014). However, empirical evidence has not sought to identify the role of different types of civic engagement, and proposed mechanisms explaining the association are not well understood. Our study used daily diary data from 276 college students to test links from four types of civic engagement (i.e., helping behavior, pro-environmental behavior, volunteering, charitable giving) to well-being. Utilizing a daily diary design offers an examination of close temporal associations, testing whether civic behavior predicts elevated same day well-being. To better understand processes at play, we drew from self-determination theory (SDT) to examine the extent to which civic engagement promotes well-being through satisfying basic psychological needs (Deci & Ryan, 2000; Weinstein & Ryan, 2010).

**Defining Civic Engagement and Well-Being**

Contemporary theorizing argues that civic engagement is multifaceted and as such, multiple dimensions should be examined to gain full understanding of the construct (Amnå, 2012; Haste & Hogan, 2006; Sherrod & Lauckhardt, 2009; Wray-Lake et al., 2016). Civic behaviors are diverse and include (but are not limited to) voting, political campaigning,

protesting or boycotting, volunteering or community service, pro-environmental behavior, charitable giving, and informal helping. Taking a multidimensional approach to civic engagement is advantageous for identifying whether some types of civic engagement are more strongly associated with well-being than others.

Day-to-day civic engagement is not often examined, yet studying daily civic engagement may enhance understanding of short-term outcomes of these behaviors. Our study prioritized civic behaviors that are plausibly enacted on one or more days over a one-week period. We excluded political behaviors that are relatively infrequent in the general population and among youth (Jennings & Niemi, 2014; Syvertsen et al., 2011) and likely difficult to assess on a daily level. The four types of civic engagement we measured – helping behavior, pro-environmental behavior, volunteering, and charitable giving – have close conceptual overlap with prosociality, as both civic and prosocial domains involve behaviors intended to benefit others (Padilla-Walker & Carlo, 2014; Wray-Lake & Syvertsen, 2011). Helping behavior, volunteering, pro-environmental behaviors, and charitable giving have shown daily or short-term fluctuations (Aknin et al., 2013; Bissig-Olson et al., 2013; Martela & Ryan, 2015; Steger et al., 2008; Weinstein & Ryan, 2010). Thus, these behaviors are appropriate for a daily diary study.

Subjective well-being is also widely understood to be multidimensional, comprised of distinguishable but highly interrelated components such as positive affect, low negative affect, and life satisfaction (Diener, 2000). These three measures of well-being are often combined into a single higher-order construct (e.g., Weinstein & Ryan, 2010). Subjective vitality – the perception of feeling energetic and alive – is also a key component of well-being (Ryan & Frederick, 1997), fluctuating in relation to psychological and physical factors, including variations in satisfactions of autonomy, competence, and relatedness (Ryan & Deci, 2008). Diary

designs are often used to capture individuals' daily variability in well-being (Sheldon et al., 1996; Weinstein & Ryan, 2010).

### **Linking Civic Engagement to Well-Being**

The idea that engaging in civic actions benefits individuals' well-being has some empirical support. Helping behaviors have been linked to increases in daily well-being in college students (Martela & Ryan, 2015; Weinstein & Ryan, 2010), and acts of kindness have been correlated with improved well-being in children (Layous et al., 2012). Pro-environmental behaviors are theorized to enhance well-being (Kasser, 2009; Venhoeven et al., 2013), and cross-sectional evidence revealed a positive correlation between pro-environmental behaviors and happiness, life satisfaction, and positive affect (Brown & Kasser, 2005). Materialism and consumer behaviors, which conflict with pro-environmental behaviors, were consistently negatively associated with well-being in meta-analysis (Dittmar et al., 2014). Volunteering has been the most commonly studied form of civic engagement. Evidence with older adults shows robust effects of volunteering on mental health and well-being (Borgonovi, 2008; Jenkinson et al., 2013; Wilson & Musick, 1999). A randomized control trial of adolescents found that volunteering increases cardiovascular health (Schreier et al., 2013), but little work has linked volunteering to youth well-being. Charitable giving boosts well-being among children across diverse cultural contexts, and this link holds cross-sectionally, longitudinally, and experimentally (Aknin et al., 2013; Dunn et al., 2008).

The current study builds on this body of research by examining multiple types of civic engagement simultaneously, employing a daily diary design, focusing on young adults, and testing a theory-driven hypothesis about mechanisms. First, types of civic engagement are often studied in isolation, which contributes to a bifurcation of findings across studies and a lack of

cohesive evidence for the hypothesis. Our study can offer some clarity on whether certain types of civic engagement benefit well-being more than others. In addition, a combined civic engagement construct has not been systematically examined, which leads to largely untested theoretical assumptions that civic engagement promotes well-being (Hirshorn & Settersten, 2013). Second, although correlational, these designs offer some inference regarding naturally occurring cause and effect relationships, providing insight into how day-to-day life experiences such as civic engagement affect well-being (Bolger et al., 2003; Emmons, 1991). Daily diary studies also tend to avoid biases due to global evaluations and judgments, for which self-report and social desirability biases can be stronger (Steger et al., 2008). Controlling for alternative explanations such as global values and social desirability bias can further strengthen tests of the civic engagement-well-being hypothesis. Positive relationships are related to higher well-being (Ryan & Deci, 2017) and particularly, relationships characterized by democratic climates where youth have positive bonds and feel heard and respected, have been linked to greater civic engagement (Campbell, 2008). Thus, we also controlled for family and university democratic climate to more accurately assess associations of interest. Third, whether the link between civic engagement and well-being holds for young people in particular is unclear, yet has important implications for developmental theory and policy. Developmental theory suggests that for youth grappling with identity and the transition to adulthood, civic engagement should be especially useful for promoting well-being because it provides a sense of autonomy, agency, and responsibility (Flanagan & Bundick, 2011; Hart et al., 2014). Policy recommendations have emphasized the need to expand civic engagement opportunities for young adults to properly invest in their health and well-being (Institute of Medicine (IOM), 2014), and many universities actively consider new policies and funding initiatives to increase civic engagement on their

campuses (Flanagan & Levine, 2010). Thus, whether civic engagement promotes well-being is an especially relevant question for young people and the contexts that seek to support them.

### **Self-Determination Theory**

Self-determination theory (SDT) offers reason to believe that certain behaviors promote well-being by fulfilling basic psychological needs. SDT posits that individuals have three basic psychological needs – autonomy, competence, and relatedness – and that satisfying these needs is a necessary condition for human flourishing (Ryan & Deci, 2017). Experimental, cross-sectional, and daily diary studies support the SDT proposition that well-being is enhanced when these psychological needs are satisfied (e.g., Reis et al., 2000; Ryan & Deci, 2001; Sheldon et al., 2010). For example, experimental evidence showed that individuals who engaged in activities that fulfilled autonomy and relatedness had greater increases in well-being than individuals who engaged in neutral activities (Sheldon et al., 2010).

A wealth of research bolsters the view that psychological needs satisfaction is a mechanism that explains how personally satisfying experiences lead to thriving; this mediational pathway has been demonstrated across a range of behaviors such as work, achievement, exercise, and helping behavior (Ryan & Deci, 2017). For example, intrinsic work values and job characteristics (Vansteenkiste et al., 2007; Van den Broeck et al., 2008) and attachment security in close relationships (LaGuardia et al., 2000) have been linked to psychological needs satisfaction, which in turn is linked to higher well-being. Intrinsic pursuits, including prosocial behaviors such as helping and community-oriented behaviors like volunteering and caring, are more likely to fulfill basic psychological needs than extrinsic pursuits such as achievement of wealth or power (Deci & Ryan, 2000; Gagné, 2003): Theorists have argued that helping behavior and benevolence toward others is often done for its own sake, and people find these behaviors

inherently satisfying (Ryan & Hawley, 2016). Thus, based on SDT theory, psychological needs satisfaction may partly explain the association between civic engagement (mostly an intrinsic pursuit) and well-being.

Using a daily diary design, prosocial behavior has been associated with well-being, as mediated through psychological needs satisfaction (Martela & Ryan, 2015; Weinstein & Ryan, 2010). Among two Chinese samples, correlational and experimental evidence suggested that relatedness need satisfaction mediated the link between charitable donations and well-being (Jiang, Zeng, Zhang, & Wang, 2016). Volunteering and pro-environmental behavior have been studied from a SDT perspective, with research documenting the role of self-determined motivation in predicting positive outcomes of these behaviors (e.g., Finkelstein et al., 2005; Pelletier, 2002), yet a mediating role of needs satisfaction has not been directly examined. Thus, the hypothesis that psychological needs satisfaction mediates the link between civic engagement and well-being has been empirically supported for some types of civic engagement. Perhaps not all civic actions equally fulfill psychological needs and enhance well-being, and such nuanced findings would be theoretically informative.

### **Current Study**

In summary, theory and some prior research suggests that civic engagement can promote well-being, but evidence is inconclusive. We extend existing literature by examining multiple types of civic engagement simultaneously as well as a composite civic engagement score to test the hypothesized association between civic engagement and well-being. We also tested the theoretically-derived hypothesis that associations between civic engagement and well-being are explained partly by psychological needs satisfaction. We assessed these aims by utilizing a longitudinal daily diary design and controlling for demographics, social desirability, values, and

family and school climate to rule out alternative explanations.

## Method

### Participants and Procedure

Participants were recruited through the psychology subject pool at a private liberal arts university in the northeastern United States. After obtaining informed consent, participants completed an initial 30-45 minute survey online with demographics, values, attitudes, and behaviors. Participants completed the initial survey during a sign up week; then all participants were sent the first daily survey on a Monday. Daily survey links were sent at days end for seven consecutive days. Participants received extra credit in courses for participating. Approximately half of the sample was recruited at the end of the fall 2014 semester, and the other half was recruited at the beginning of the spring 2015 semester. A *t*-test indicated that well-being on day one was higher for the spring sample ( $M = 2.35$ ) than the fall sample ( $M = 2.10$ ),  $t(264) = 2.39$ ,  $p = .001$ ; thus semester was controlled.

The initial survey was completed by 276 college students ages 18 to 23 ( $M = 20.03$ ,  $SD = 1.22$ ), excluding three participants who were over 24. Twenty-one participants did not report age, and the mean was substituted for their ages. On day 7, 63% ( $n = 176$ ) were still participating. The sample was 78% female and 60% White, 29% Asian, 6% Hispanic, and 4% Black.

### Measures

**Civic engagement.** Individuals were asked how much five items represented their behavior each day on a 7-point scale from *not at all* to *extremely*: Helping a person in need, protecting environment, acting environmentally responsibly, volunteering for an organization or cause, and making a charitable donation. Given their high correlation ( $r = .74$  to  $.88$  across days), the two environmental behaviors were combined. Each day, participants described their most

significant civic behavior that day. Volunteering typically occurred through campus organizations; daily pro-environmental behaviors often involved recycling and conserving resources; helping others commonly included providing emotional or academic support to friends but also spontaneously helping unknown others; and charitable donations mostly involved giving money (but sometimes goods) to organizations and causes. See Table 1 for examples. Each type of civic engagement was examined separately, and items were also combined into a composite for analyses.

**Subjective well-being** was measured by positive affect, negative affect, and life satisfaction. Daily well-being was a composite of several scales: Positive affect and negative affect were measured by the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988). Participants rated their daily experience of 20 emotions on a scale of *very slightly or not at all* (1) to *extremely* (5). Positive affect (PA) and negative affect (NA) items were averaged separately; negative affect items were reverse-scored (PA  $\alpha$  range = .91 - .93; NA  $\alpha$  range = .90 - .92). We used the satisfaction with life scale (Diener et al., 1985), in which participants rated agreement each day with five items on a scale from *strongly disagree* (1) to *strongly agree* (7;  $\alpha$  range = .89 - .93). Subjective vitality was measured with Ryan and Frederick's (1997) 6-item scale; participants rated how much each statement was true of them that day on a scale from *not at true* (1) to *very true* (7;  $\alpha$  range = .92 - .94). Within each day, all four constructs loaded onto a single factor in a principal components analysis (Eigenvalues = 2.26–2.59, all other Eigenvalues < 1), with the exception of day 7 (Eigenvalues = 2.19 and 1.10). Supplemental analyses showed that patterns of associations with civic engagement were the same for SWB and vitality. Thus, we combined all measures into one construct for parsimony.

**Basic psychological needs satisfaction.** We used the 24-item Basic Needs Satisfaction

Scale (Gagné, 2003). Response options ranged from not at *all true* (1) to *very true* (7).

Participants were asked to think about how they felt today, and scale items were each day. Items measured autonomy, relatedness, and competence, with items such as “I feel my choices express who I really am,” “I feel that the people I care about also care about me,” and “I feel capable at what I do” ( $\alpha$  range = .93–.95). Given strong positive correlations among the three psychological needs ( $r$  range = .46 to .67) and theory that the constructs are closely and reciprocally related (Ryan & Deci, 2017), we created one scale for psychological needs satisfaction.

**Control variables.** Control variables came from the initial survey. Demographics included gender (*male*=1, *female*=0), age in years, ethnicity, and financial security. Based on small sample size, Hispanic and Black categories were combined with the “other” ethnicity category. Asian and Other Ethnicity were entered as dummy variables, with White as the reference group. Financial security was measured by asking individuals to describe their financial situation by selecting one of four response options: having a hard time / just enough / no problem buying things I need and being able to buy anything I want. Day of the week was included as 6 dummy variables, with Saturday as the reference group. *Fall* (0) or *spring* (1) semester was included as a covariate. Social desirability was measured with a 7-item Crowne and Marlowe scale (Ray, 1984;  $\alpha$  = .71). Community aspirations were taken from 5 items on the Aspiration Index (Kasser & Ryan, 2001;  $\alpha$  = .91). Models also controlled for democratic family climate (Stattin, Persson, Burk, & Kerr, 2011;  $\alpha$  = .93) and democratic university climate (Flanagan, Syvertsen, & Stout, 2007;  $\alpha$  = .79).

### **Analysis Plan**

We estimated multilevel mixed-effects models using Stata. We fit two-level models with occasions (days) nested within persons and a random intercept. In multilevel models, level 2 or

between-person predictors are time-invariant and assumed not to fluctuate over time. Level 2 effects predict variance in the dependent variable (DV) at the intercept and can be interpreted as associations aggregated over time, similar to cross-sectional regression coefficients. Level 1 or within-person predictors are time-varying, illustrating whether a predictor at each time point is associated with variance in a DV at that same time point. Control variables were time-invariant and estimated at level 2. Civic engagement and psychological needs satisfaction were time-varying and estimated at both levels. Level 2 effects are aggregated across daily assessments; accounting for them enables more accurate estimation of level 1 effects. Level 1 predictors were group-mean centered and interpreted as individuals' daily fluctuation from their own average. Multilevel models handle missing data by allowing participants to contribute partial data, utilizing participants' data for any occasions to which they contributed.

Three sets of models were estimated. Each model was first estimated with the four types of civic engagement entered simultaneously and then again with the civic engagement composite variable. First, we estimated models with civic engagement predicting well-being to examine evidence for the primary hypothesis. Next, two sets of models tested basic needs satisfaction as a potential mediator: civic engagement predicting the DV of psychological needs satisfaction and then civic engagement and basic needs satisfaction simultaneously entered as predictors of well-being. Indirect effects were calculated using bootstrapped standard errors (with 5000 bootstrapped samples) in the Stata `ml_mediation` procedure to examine evidence of needs satisfaction as a mediator between civic engagement and well-being. All models included the same level-2 covariates: gender, race/ethnicity, financial security, fall vs. spring semester survey sample, day of the week, social desirability, community aspirations, democratic family climate, and democratic university climate.

## Results

### Descriptives

As a first step, we descriptively examined intraclass correlation coefficients in unconditional models (i.e., no predictors) to describe the amount of variance at level 2 (differences between individuals, on *average*) versus level 1 (within-person, *daily* associations). The ICC for well-being indicated that 65% of variance was between individuals and 45% was within individuals. The ICC for psychological needs satisfaction indicated that 57% of variance was between individuals and 43% was within. Given that daily civic engagement is rarely examined, we also examined ICCs for each type of civic engagement: helping behavior had 35% of variance between individuals, pro-environmental behavior had 60% of variance between individuals, volunteering had 37% of variance between individuals, and charitable giving had 48% of variance between individuals; the remaining variance for each variable was within individuals. Thus, all constructs showed substantial fluctuation across days. Throughout the results, level 1 effects are referred to as daily associations and level 2 effects as average associations for ease of interpretation.

Means and correlations among types of civic engagement are shown in Table 2. Types of civic engagement were moderately positively correlated, with a high association between volunteering and charitable giving. The most commonly reported behavior was helping behavior, and the least reported was charitable giving. Well-being was positively correlated with all types of civic engagement, except charitable giving. Psychological needs satisfaction was positively correlated with pro-environmental and helping behavior, but was not related to volunteering or charitable giving.

### Civic Engagement and Well-Being

In multilevel models, daily ( $b = .046, p < .001$ ) and average ( $b = .095, p < .05$ ) helping behavior predicted higher well-being. The same was found for daily ( $b = .065, p < .091$ ) and average ( $b = .078, p < .05$ ) pro-environmental behavior. On days when youth reported more helping or pro-environmental behavior, they also reported higher well-being on those days. Higher helping and pro-environmental behavior on average was also associated with higher well-being across days. In contrast, volunteering was not related to daily ( $b = .016, p = .21$ ) or average ( $b = .049, p = .38$ ) well-being, after accounting for other types of civic engagement and controls. Charitable giving was also not associated with daily ( $b = -.027, p = .08$ ) or average ( $b = -.100, p = .10$ ) well-being.

The average civic engagement composite predicted higher well-being ( $b = .027, p < .01$ ), meaning higher civic engagement on average was associated with higher well-being across days. Daily civic engagement was not associated with daily well-being ( $b = .004, p = .79$ ).

### **Basic Needs Satisfaction as Mediator**

To test the hypothesis that civic engagement promotes well-being in part through basic psychological needs satisfaction, we first estimated mixed models with civic engagement predicting psychological needs satisfaction to establish a link between the predictors and mediator (Kenny et al., 2003). First, helping and pro-environmental behaviors were most strongly associated with needs satisfaction; results indicated that daily helping ( $b = .048, p < .001$ ) and pro-environmental ( $b = .061, p < .01$ ) behaviors were positively associated with daily needs satisfaction, and youth on average engaged in more helping ( $b = .146, p < .01$ ) and pro-environmental ( $b = .117, p < .01$ ) behaviors reported higher needs satisfaction on average. Volunteering was not associated with psychological needs satisfaction on a daily level ( $b = .009, p = .63$ ) or on average ( $b = -.068, p = .32$ ). On days when youth donated to charity, they reported

lower psychological needs satisfaction on that day ( $b = -.050, p < .05$ ), yet there was no level 2 association ( $b = -.088, p = .23$ ). Thus, results suggest that only helping and pro-environmental behavior are viable candidates for the hypothesized mediation by psychological needs satisfaction.

The civic engagement composite was only associated with psychological needs satisfaction on average ( $b = .029, p < .01$ ), indicating that civic engagement predicted higher needs satisfaction across days. The daily civic engagement composite was not related to daily needs satisfaction ( $b = -.020, p = .342$ ).

Next, we included both civic engagement and psychological needs satisfaction as predictors of well-being to determine whether patterns were consistent with the mediation hypothesis. In the model examining types of civic engagement, psychological needs satisfaction predicted same day well-being ( $b = .462, p < .001$ ) and well-being on average ( $b = .666, p < .001$ ); coefficients were very similar in the composite civic engagement model (see Table 3). On days when youth felt their psychological needs were satisfied, well-being was higher on those days, and higher needs satisfaction on average was associated with higher well-being on average.

We then estimated indirect effects for the paths between civic engagement and well-being through psychological needs satisfaction. For helping and environmental behavior, indirect effects were significant at level 1 ( $b = .024(.007), p = .001; b = .031(.01), p < .01$ ) and level 2 ( $b = .095(.02), p < .001; b = .091(.02), p < .001$ ), respectively, and thus the patterns were consistent with the mediation hypothesis on average and at the daily level. Indirect effects were not significant for volunteering ( $b_{level 1} = .007(.009), p = .42; b_{level 2} = .013(.03), p = .69$ ) or for charitable donations ( $b_{level 1} = -.009(.01), p = .34; b_{level 2} = .021(.03), p = .51$ ), suggesting no evidence for needs satisfaction as mediator. For composite civic engagement, the level 2 indirect

effect was significant ( $b = .021(.006)$ ,  $p < .001$ ) but not the level 1 effect ( $b = -.009(.009)$ ,  $p = .33$ ), suggesting that civic engagement may link to higher well-being through higher needs satisfaction on average, but not on a daily level.

In the final models, all of the significant civic engagement parameters were reduced in size after accounting for psychological needs satisfaction. Level 1 effects for informal helping and pro-environmental behavior remained statistically significant; level 2 effects for informal helping, pro-environmental behavior, and the civic engagement composite were reduced to non-significance. Volunteering on average was associated with higher well-being, only in the model that included needs satisfaction ( $b = .097$ ,  $p < .01$ ).

### **Discussion**

Results offered evidence suggesting that civic engagement was associated with higher well-being, on average across days, and this association may be mediated in part through psychological needs satisfaction. However, results also offered important nuance by demonstrating that certain types of civic engagement (i.e., helping and pro-environmental behaviors) were more strongly related to well-being than others, as indicated by daily associations. Given that few studies have examined multiple types of civic engagement in relation to well-being, particularly not in a daily design, findings advance and specify the theoretical claim that civic engagement may benefit mental health (Flanagan & Bundick, 2011; Hart et al., 2014). Our study builds on related work linking helping and benevolent behavior to daily well-being and identifying psychological needs satisfaction as a mediator (Martela & Ryan, 2015; Weinstein & Ryan, 2010), yet non-significant results with volunteering and charitable giving were unexpected. Taken together, findings have implications for theory and practice related to civic engagement.

Helping and pro-environmental behaviors were related to higher daily well-being, whereas volunteering and charitable giving were not. Perhaps helping and environmental behaviors are more reinforcing to daily well-being because they can fold into the rhythms of everyday life more seamlessly and spontaneously. For example, many helping behaviors (e.g., assisting a stranger with carrying a heavy load, giving advice to someone in need) and pro-environmental behaviors (e.g., taking the stairs instead of elevator, recycling) need not require extensive time or advanced planning to carry out. These everyday behaviors are likely to be enacted volitionally and exercise individuals' natural desires to be prosocial, hallmarks of intrinsic motivation (Ryan & Deci, 2017). Helping and pro-environmental behaviors, especially when autonomously enacted and intrinsically motivated, should function to satisfy needs for autonomy, competence, and relatedness. Indeed, our results were consistent with the interpretation that psychological needs satisfaction partly mediates links between helping and pro-environmental behaviors and well-being.

Notably, volunteering overall was not linked to well-being at the daily level or across days. This lack of findings is surprising given a wealth of research among older adults showing that volunteering is associated with better mental health (Borgonovi, 2008; Jenkinson et al., 2013; Wilson & Musick, 1999) and a daily diary study of German employees finding lower negative affect on days following volunteering (Mojza et al., 2011). Given that few studies have examined links from volunteering to daily well-being, perhaps the temporal timing of the association is important to consider. For instance, volunteering for organizations or events may involve tedious details, frustration, exhaustion, or boredom (Jansen, 2010) – feelings that would not be conducive to well-being that day. Over time, as volunteers see the results of their efforts, well-being may accumulate, as suggested by the one average-level effect in our study and by

long-term longitudinal studies that have found volunteering predicted lower depression years later (Kim & Pai, 2010; Wray-Lake et al., 2017). In line with this view, our results further showed that the composite civic engagement variable was only associated with well-being when aggregated across days, but was not linked to daily well-being. Studies that vary the temporal timing of measurement occasions would be useful for testing the hypothesis that some types of civic engagement are associated with immediate boosts in well-being, whereas other types of civic engagement have benefits to well-being that take longer to unfold.

Charitable giving had non-significant bivariate and multivariate associations with well-being; these findings contrast with robust evidence that charitable giving boosts well-being (Aknin et al., 2013; Dunn et al., 2008). For example, neural evidence has shown that charitable giving stimulates reward processing regions of the brain, and voluntary giving tends to produce “warm glow” feelings (Harbaugh et al., 2007). Perhaps these boosts to well-being are momentary and fleeting, and do not show up in an end of day survey. Again, studies that vary temporal timing would add clarity to the pattern of associations. It is also possible that associations between charitable donations and well-being are specific only to happiness or positive affect, which has been a focus of prior studies (Aknin et al., 2013; Dunn et al., 2008). Neither daily charitable giving nor daily volunteering was commonly endorsed by students in our sample. Thus, these measures may suffer from floor effects in our seven-day study, decreasing our ability to detect significant associations.

The mediational analyses were consistent with the idea that basic psychological needs satisfaction may play a mediating role for helping behavior, pro-environmental behavior, and civic engagement (the composite) in relation to well-being. These findings align with self-determination theory (Ryan & Deci, 2017) and multiple empirical studies (e.g., LaGuardia et al.,

2000; Jiang et al., 2016; Martela & Ryan, 2015; Van den Broeck et al., 2008; Vansteenkiste et al., 2007; Weinstein & Ryan, 2010) demonstrating that personally satisfying experiences benefit well-being through satisfying psychological needs of autonomy, competence, and relatedness. The hypothesized mediation pattern was not found for volunteering and charitable giving, neither of which were even bivariately associated with needs satisfaction. Perhaps volunteering and charitable giving do not satisfy needs for autonomy, competence, and relatedness among college students, across a seven-day time frame, or for all individuals equally. Regarding the latter, volunteering and charitable giving may have more complex and individually-varying motivations than helping and pro-environmental behavior, given that these behaviors tend to require more time, resources, or initiative and may be enacted for a wide range of reasons (Bekkers & Wiepking, 2010; Clary & Snyder, 1999; Cornelis et al., 2013). Research on volunteering motivations has shown that some volunteer to build relationships and help others (e.g., Gage & Thapa, 2012), goals that tend to enhance psychological needs satisfaction and thus boost well-being (Ryan et al., 2013). However, others volunteer for status, recognition, self-interest, or external pressures (e.g., Stukas et al., 2016), motivations that are typically at odds with well-being and thwart psychological needs satisfaction (Kasser, 2016). However, a motivational explanation must be tempered by recognition that all behaviors, including helping and pro-environmental behavior, have diverse underlying motivations (e.g., de Groot & Steg, 2010; Weinstein & Ryan, 2010). Finally, some may posit that volunteering or charitable giving only satisfy certain psychological needs. For example, Jiang et al. (2016) showed that charitable donations were related specifically to higher satisfaction of relational needs. This explanation is less plausible in our study, as volunteering and charitable giving were bivariately unrelated to all three psychological needs. Taken together, our findings should be replicated and extended to

other samples to determine the scope of evidence for the idea that only certain civic behaviors link to well-being through psychological needs satisfaction.

The findings should be considered in light of several limitations. Although a daily diary design can offer reliable information about dynamic associations among constructs that unfold over time (Bolger et al., 2003), this study cannot determine causality. The opposite causal direction is plausible, such that individuals who feel psychologically healthy may be much more likely to participate in civic activities (Li & Ferraro, 2005; Thoits & Hewitt, 2001). Our sample of majority female college students lacks generalizability to other ages and demographic groups. Future studies should determine whether civic engagement benefits well-being of different individuals equally by analyzing differences by demographics, social background, culture, and life circumstances. Finally, limitations of mediational analyses should be acknowledged: Mediational analysis is prone to false positives, and to the extent that we have omitted key third variables, claims about mediation should be interpreted with caution (Fiedler et al., 2011; Judd et al., 2014). This concern is lessened by theory and past evidence pointing to the mediating role of psychological needs satisfaction (Ryan & Deci, 2017). Finally, perhaps daily measures elicit civic actions that are smaller or more incremental, whereas past-year civic measures may bring to mind longer-term, well-planned, and more organized actions. Thus, daily and long-term measures may capture different aspects of civic engagement that are not directly comparable.

These findings contribute to theoretical perspectives about individuals' experiences of civic engagement and serves as a springboard for future research. First, our findings call for greater recognition of the psychological benefits of civic engagement, which should be more explicitly incorporated into civic engagement theory and further tested in research. Second, not all types of civic engagement may be equally needs satisfying or promotive of well-being among

young people. Further research on potential explanations and moderators underlying these differences would be a useful next step. Future research might also test hypotheses with political behavior. Third, our findings partially support the idea that psychological needs satisfaction is one possible mechanism through which civic engagement functions to promote well-being (Martela & Ryan, 2015; Weinstein & Ryan, 2010). Yet, the remaining direct associations from some types of civic engagement to well-being suggest that there is room for examining other mechanisms. Direct physiological and neurological responses may be at play: Studies have shown that volunteering reduces cardiovascular stressors in adolescence (Schreier et al., 2013) and charitable giving produces neural activity indicative of a warm glow (Harbaugh et al., 2007). In other words, perhaps doing good feels good in the moment. Lyubomirsky and Layous (2013)'s positive activity model describes multiple potential mediators in addition to needs satisfaction between positive activities (like civic engagement) and well-being, such as positive thoughts, emotions, and actions.

These results may be most relevant to college student populations. College students may have unique opportunities to engage in civic behaviors because they often live in close proximity to similar-aged peers with which they form community and because there are a plethora of visible and active organizations and causes on college campuses (Youniss & McIntosh, 2010). Given that young adulthood has often been seen as a period of heightened vulnerability to stress and psychopathology (Schulenberg et al., 2004), identifying behaviors that boost daily well-being is valuable for understanding how to promote well-being among college students in this age range. Future work could more precisely determine whether these associations generalize more broadly to young adults and to other age groups.

Together the evidence suggests that everyday civic behaviors may have some benefit for

college students' well-being and supports policy statements that call for greater attention to civic engagement as a strategy to promote health among young adults (IOM, 2014). At the same time, this study promotes recognition that civic engagement is not a panacea for well-being, and not all types of civic engagement are going to promote well-being equally well. By implication, colleges and other organizations that work with college students may consider offering support in selecting civic opportunities that are psychologically rewarding (Billig, 2011), which in turn could better enhance well-being. Youth could also be coached on how to take advantage of spontaneous opportunities to show benevolence toward others and the environment. Considering civic engagement as an intervention strategy to promote well-being has untapped potential that should be further explored, as well-being is crucial to the health and functioning of society.

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Table 1. *Participant Reported Examples of Daily Civic Engagement*

Daily Civic Engagement	Examples
Volunteering	<p>“I volunteered with [organization] by helping children through our local partnership organization with their homework.”</p> <p>“I volunteered and helped make puzzle books kids for children in the hospital. The people in my club and I each made a few pages each to put into puzzle books to send to kids that are in the hospital to enjoy.”</p> <p>“I went to volunteer at foodlink (a food bank) with [sorority]. We were sorting the food they would be giving out.”</p>
Pro-environmental Behavior	<p>“I brought a reusable thermos and water bottle to campus today and did not create any extra waste on campus, as I also brought food in reusable containers.”</p> <p>“Recycled, turn off lights/fan when leaving room, conserve shower water.”</p> <p>“I act environmentally responsible every day by recycling and picking up my own trash. Today was different because I picked up some trash along the snow. There were some candy wrappers there.”</p>
Helping Behavior	<p>“I offered to pay for somebodies meal who had forgotten their wallet.”</p> <p>“I listened to my friend who was upset and tired and made her feel better so that she could go back to studying efficiently.”</p> <p>“I baked my friend cookies because she has 4 midterms and she was really stressing. I gave them to her and she loved them!”</p>
Charitable Giving	<p>“Today I donated a bunch of my old toys to some kids in the inner city for Christmas.”</p> <p>“Today I made a donation to a D3 football player who I have played against in the past. He was selected to be in an allstar game in [location] but could not pay for the trip alone. A go fund me page was started for him and I made a contribution to it.”</p> <p>“I gave a homeless man some funds for food.”</p>

Table 2. Means and correlations among civic engagement variables, aggregated across days

	1.	2.	3.	4.	5.	6.
1. Volunteering	1.79(1.08)					
2. Pro-environmental behavior	0.46***	2.38(1.30)				
3. Helping behavior	0.55***	0.48***	2.84(1.34)			
4. Charitable donations	0.71***	0.55***	0.55***	1.64(1.08)		
5. Well-being	0.18***	0.24***	0.27***	0.10	2.27(0.73)	
6. Basic needs satisfaction	0.08	0.24***	0.28***	0.05	0.84***	4.79(0.89)

*Note.* Values down the diagonal represent means with standard deviations in parentheses.

\*\*\* $p < .001$ .

Table 3. Hierarchical linear models linking civic engagement to daily basic needs satisfaction and daily well-being

	Basic Needs Satisfaction		Daily Well-Being (Civic Engagement Only)		Daily Well-Being (with Basic Needs Satisfaction)	
	Level 1	Level 2	Level 1	Level 2	Level 1	Level 2
<b>Civic Indicators</b>						
Helping behavior	.048(.01)***	.146(.05)**	.046(.01)***	.095(.04)*	.024(.01)***	-.002(.02)
Pro-environmental	.061(.02)**	.117(.02)**	.065(.02)***	.078(.04)*	.036(.01)**	.000(.02)
Volunteering	.009(.02)	-.068(.07)	.016(.01)	.049(.06)	.012(.01)	.097(.03)**
Charitable giving	-.050(.02)*	-.088(.07)	-.027(.02)	-.100(.06)	-.004(.01)	-.040(.04)
<b>Basic Needs Satisfaction</b>	--	--	--	--	.462(.02)***	.666(.03)***
<b>Control Variables</b>						
Male	--	.095(.12)	--	.103(.1)	--	.038(.06)
Age	--	-.024(.04)	--	-.045(.03)	--	-.030(.02)
Asian <sup>a</sup>	--	.000(.16)	--	.011(.13)	--	.016(.08)
Other Ethnic Minority <sup>a</sup>	--	-.167(.15)	--	-.126(.12)	--	-.016(.07)
Sunday	--	-.127(.07)	--	-.168(.05)***	--	-.107(.04)**
Monday	--	-.227(.07)**	--	-.164(.05)***	--	-.057(.04)
Tuesday	--	-.120(.07)	--	-.061(.05)	--	-.004(.04)
Wednesday	--	.014(.07)	--	-.031(.05)	--	-.035(.04)
Thursday	--	.120(.08)	--	.079(.05)	--	.025(.04)
Friday	--	.024(.07)	--	.065(.05)	--	.055(.04)
Semester (Fall=1)	--	.243(.1)*	--	.246(.08)**	--	.079(.05)
Financial security	--	.190(.06)***	--	.160(.05)**	--	.034(.03)
Social desirability	--	-.013(.04)	--	-.010(.03)	--	-.002(.02)
Community aspirations	--	.096(.05)*	--	.000(.04)	--	-.062(.02)**
Family democratic climate	--	.243(.07)***	--	.298(.06)***	--	.134(.03)***
University democratic climate	--	.078(.06)	--	.025(.05)	--	-.025(.03)
<b>CE Composite<sup>bc</sup></b>	-.020(.02)	.029(.01)**	.004(.01)	.027(.01)**	.013(.01)	.009(.01)
<b>Basic Needs Satisfaction<sup>b</sup></b>	--	--	--	--	.477(.02)***	.656(.03)***

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . <sup>a</sup>White was the reference group. <sup>b</sup>These parameters were estimated in a separate model, with all the same control variables listed above; coefficients for covariates are not pictured to avoid redundancy. <sup>c</sup>CE = Civic Engagement.