




The perks of being grateful to partners: Expressing gratitude in relationships predicts relational self-efficacy and life satisfaction during the COVID-19 pandemic

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Abstract

Being grateful to one's partner matters for a diverse range of interpersonal and individual well-being outcomes. However, there is little investigation on the psychological benefits of expressing gratitude to partners during the coronavirus 2019 (COVID-19) pandemic. Using a short-term longitudinal design, this study of undergraduate students ($M_{\text{age}} = 20.31$; $SD_{\text{age}} = 1.81$; $n = 268$) in the United States explores the link between expressing gratitude in romantic relationships, subsequent relationship self-efficacy, life satisfaction, psychological well-being, and the COVID-19 anxiety. Results demonstrated that expressing gratitude in relationships positively predicted subsequent relationship self-efficacy and life satisfaction even after controlling for age, gender, ethnic background, trait gratitude, and auto-regressor effects. These findings show that relational gratitude had incremental validity in predicting relational self-efficacy and subjective well-being above and beyond the effects of demographic factors and dispositional gratitude. This research emphasizes the

psychological payoffs of cultivating gratitude in relational contexts.

KEYWORDS

expressing gratitude in relationships, life satisfaction, relationship self-efficacy, well-being

INTRODUCTION

The psychosocial challenges of the on-going COVID-19 pandemic have triggered mental health problems and have threatened people's psychological and relational well-being globally (Xiong et al., 2020). Compared with other populations, younger people and students are particularly at risk for developing mental health issues because of the emotional distress associated with school closures, postponement of examinations, lower self-efficacy with remote modes of learning, and social isolation due to health protocols to stop the spread of the virus (Jones et al., 2021; Xiong et al., 2020). Recent studies show that the COVID-19 situation has exacerbated the prevalence of mental health problems in young people, including increased symptoms of anxiety and depression, drug use, post-traumatic stress disorder, and suicidal ideation (Jones et al., 2021). Nonetheless, there is also research identifying important psychological resources that can buffer young people's well-being against the adverse impacts of the pandemic, such as grit (Datu & Fincham, 2022), mindfulness practices (Schachter et al., 2022), meaning in life and self-efficacy (Zhou & Huo, 2022), kindness (Datu et al., 2022), and self-compassion (Tendhar et al., 2022).

The capacity to notice and appreciate positive aspects of life has been identified as a protective factor for young people's well-being when faced with the social stressors and challenges of the COVID-19 pandemic (Geier & Morris, 2022). Prior to the pandemic, gratitude had gained the attention of researchers due to its ability to promote positive psychological outcomes (Jans-Beken et al., 2020; Portocarrero et al., 2020), buffer negative ones (Lambert et al., 2012; Wood, Maltby, Gillett, et al., 2008), and maintain interpersonal connections and relationships (Gordon et al., 2012; Lambert & Fincham, 2011; Park et al., 2019).

Although past research documents the beneficial impacts of gratitude on personal and relational well-being, most extant data have focused on a generalized form of gratitude (i.e. trait or dispositional gratitude; Emmons & McCullough, 2003; Wood, Maltby, Stewart, et al., 2008). Few studies have examined domain-specific forms of gratitude (e.g. relational gratitude; Lambert et al., 2010) in predicting personal and relational well-being outcomes. Moreover, there is virtually no research on how specific forms of gratitude operate within the context of the COVID-19 pandemic, where health protocols, social restrictions, and quarantine measures to curb the spread of the virus have posed tremendous challenges in people's lives, affecting their psychological well-being (Xiong et al., 2020). Finally, the past reliance on cross-sectional data poses a challenge in establishing temporal linkages between domain-specific forms of gratitude and students' well-being outcomes. Examining domain-specific forms of gratitude during the pandemic can help researchers and practitioners pinpoint distinct sources of gratitude, which can help refine gratitude-based interventions and programs for students.

Thus, using a short-term longitudinal design with undergraduate students in the United States, the present study examines how relational gratitude predicts life satisfaction,

well-being, relationship self-efficacy, and COVID-19 anxiety, while controlling for the influence of age, gender, ethnicity, trait gratitude, and auto-regressor effects. The said outcomes variables were selected to reflect the spectrum of well-being which students have experienced during the COVID-19 pandemic. The inclusion of positive (i.e. life satisfaction and psychological well-being), negative (i.e. COVID-19 anxiety), and relational (i.e. relationship self-efficacy) well-being outcomes can provide researchers and practitioners with a more holistic and comprehensive understanding of how a domain-specific form of gratitude can contribute to students' mental health amid the challenges and stressors of the global pandemic.

STATE, TRAIT, AND RELATIONAL GRATITUDE

Gratitude is defined as a moral trait and emotional experience associated with expressing thankfulness or appreciation of people, events, or things (Emmons & McCullough, 2003). Generally, there are two broad categories of gratitude: state gratitude and trait gratitude (Wood, Maltby, Stewart, et al., 2008). *State gratitude* is a temporary affective state that is usually triggered by the awareness that one has received a gift, favor, or help that is perceived as valuable, costly, or altruistic, which in turn motivates reciprocity of the act (Wood, Maltby, Stewart, et al., 2008). Several studies investigate state gratitude as benefit-triggered gratitude because it is roused by receiving a favor (e.g. Lambert & Fincham, 2011; Wood et al., 2010). On the other hand, *trait or dispositional gratitude* reflects stable individual differences and can be described as a broad or general life orientation of noticing and being thankful for positive things in the world (Wood, Maltby, Stewart, et al., 2008; Wood et al., 2010). Unlike state or benefit-triggered gratitude, trait gratitude may or may not involve a giver or a benefactor because it may arise from one's abilities (e.g. being grateful for completing a task) or naturally occurring positive events in life (e.g. gratitude for waking-up in the morning; Wood et al., 2010). Trait gratitude is a generalized tendency of appreciating all sorts of gifts in life, especially those that are seen as valuable or meaningful to a person, including the presence of a cherished other, which is termed *relational gratitude* (Lambert & Fincham, 2011). Hence, relational gratitude encompasses a domain-specific form of gratitude directed to a significant other.

The role of generalized gratitude in relationships has received considerable research attention (Wood et al., 2010). Results of these investigations show positive associations between trait gratitude and relational outcomes, including self-reported (Wood, Maltby, Gillett, et al., 2008) and peer-reported quality of relationships (Emmons & McCullough, 2003), formation and maintenance of relationships (Algoe et al., 2008; Gordon et al., 2012), and relationship connection and satisfaction (Algoe et al., 2010). More specific forms of gratitude have been identified in the context of personal relationships (Lambert et al., 2010; Lambert & Fincham, 2011). In particular, Lambert et al. (2010) proposed the construct of relational gratitude, which includes a heightened awareness and subjective appreciation of one's intimate partner or friend as well as the expression of this appreciation about the other person's presence and supportive behaviors. Relational gratitude, however, is not limited to romantic relationships as it may include close friendships (Lambert et al., 2010).

Relational gratitude has been associated with concurrent and longitudinal communal strength or the degree of felt responsibility for a partner's needs (Lambert et al., 2010; Lambert & Fincham, 2011). Similar results were found in an experimental investigation that compared the expression of gratitude to a friend, thinking grateful thoughts about a friend, thinking about daily activities with a friend, and recalling positive interactions with a friend.

Expressing gratitude increased communal strength among friends significantly more than the other conditions (Lambert et al., 2010). In a series of investigations involving cross-sectional, longitudinal, and experimental research designs, Lambert and Fincham (2011) found that expressing gratitude to a romantic partner or a close friend was associated with increased comfort in voicing relationship concerns and greater appreciation of the other person. Gordon et al. (2012) noted that engaging in gratitude expressions to one's romantic partner could bolster self-reported commitment and responsive behaviors. More recently, cross-sectional and longitudinal studies show that receiving expressions of gratitude from a romantic partner buffer insecurely attached individuals from experiencing low levels of relationship satisfaction and commitment (Park et al., 2019). Such effects were also found to enhance insecurely attached individuals' feelings of being cared for by their partner for up to 3 months, which eventually led to higher levels of relationship satisfaction and commitment (Park et al., 2019). However, within the context of COVID-19 health crisis, the role of specific forms gratitude in predicting undergraduate students' well-being is unknown. Thus, anchored on the tenets of the find-bind-and-remind theory (Algoe, 2012), we examined how relational gratitude could predict psychological and relational well-being outcomes.

THE FIND-REMINDE-AND-BIND THEORY

We used the *find-remind-and-bind theory of gratitude* (Algoe, 2012) to rationalize the associations of relational gratitude with psychological (i.e. life satisfaction, well-being, and the COVID-19 anxiety) and relational (i.e. relationship self-efficacy) well-being. This theory posits that positive emotions such as gratitude serve an evolutionary purpose in establishing and maintaining reciprocally altruistic relationships (Algoe, 2012). Gratitude's evolutionary value lies in its capacity to proffer opportunities (e.g. receiving a favor or a benefit) to either find new or reflect of existing high-quality interpersonal connections, which in turn binds people more closely. This framework also emphasizes how perceived responsiveness of the giver can bolster care, concern, and understanding to the recipient, which strengthens social ties.

Research lends considerable support on the basic tenets of the *find-bind-and-remind* model (Algoe, 2012). For example, individuals who are grateful for their partners' efforts and support are likely to attune to their romantic partners' needs (Lambert et al., 2010) and share relationship concerns to their partners (Lambert & Fincham, 2011)—conditions that can facilitate not only growth in intimate relationships but also well-being outcomes. Grateful individuals have better romantic relationship satisfaction (Algoe et al., 2010), social ties (Emmons & McCullough, 2003), and effective communication in relationships (Lambert & Fincham, 2011). Given the implications of gratitude for improving relational processes and outcomes, it makes sense to believe that gratitude may also relate to better relationship self-efficacy—confidence in preventing and resolving interpersonal conflicts with one's partner (Baker et al., 2016; Fincham et al., 2000), which was associated with marital satisfaction (Fincham et al., 2000) and lower relationship dissolution (Baker et al., 2016).

In addition, this model postulates gratitude as a positive adaptive emotion, typically brought forth by the kindness of another, is central to peoples' well-being and longevity (Algoe, 2012). In general, gratitude allows individuals to be mindful of the positive aspects of life despite undesirable and challenging situations such as critical illnesses (Emmons & McCullough, 2003; Sirois & Wood, 2017) and a global pandemic (Datu et al., 2022; Jiang, 2022). It is argued that gratitude expressions facilitate healthy emotion regulation strategies by encouraging alternative

and adaptive patterns of thinking about undesirable events as well as recalling positive and negative memories (Stone & Schmidt, 2020).

Aside from relationship self-efficacy, we also examined the associations of relational gratitude with positive (i.e. life satisfaction and well-being) and negative (i.e. COVID-19 anxiety) aspects of well-being. Life satisfaction is a person's overall cognitive appraisal of the quality of life (Diener et al., 1985). Well-being, on the other hand, was conceptualized in terms of the positive indicators of mental health over the past two weeks (e.g. vigor and positive emotions; Topp et al., 2015). COVID-19 anxiety reflects the extent to which participants felt anxious during the COVID-19 pandemic outbreak (Lee, 2020). Examining both positive and negative domains of psychological well-being can provide a more holistic and comprehensive understanding of students' mental health during the COVID-19 health crisis. Given the beneficial impacts of generalized gratitude before (e.g. Fritz et al., 2019; Froh et al., 2008; Lambert et al., 2012) and during the pandemic (e.g. Datu et al., 2022; Jiang, 2022; Puente-Díaz & Cavazos-Arroyo, 2022), we anticipate that higher levels of relational gratitude will be associated with greater subsequent life satisfaction and subjective well-being, and negatively associated with COVID-19 anxiety, even after controlling for trait gratitude, participants' socio-demographic characteristics, and auto-regressor effects.

GRATITUDE AND WELL-BEING OUTCOMES

Even before the COVID-19 pandemic, research documented the benefits of gratitude in promoting well-being and thwarting maladaptive outcomes (e.g. Jans-Beken et al., 2020; Portocarrero et al., 2020; Wood et al., 2010). In general, individuals who report higher levels of gratitude are more likely to experience increased life satisfaction (Datu & Mateo, 2015), positive emotions such as happiness and optimism (Datu & Mateo, 2020; Froh et al., 2008), subjective and psychological well-being (Portocarrero et al., 2020), academic self-efficacy (Datu & Mateo, 2020), perceived social support (Wood, Maltby, Gillett, et al., 2008), prosocial behaviors (Yost-Dubrow & Dunham, 2018), healthy eating patterns (Fritz et al., 2019), and better physical health (Jans-Beken et al., 2020). Gratitude was linked to lower levels of negative affect (Froh et al., 2008), negative illness cognitions (Sirois & Wood, 2017), and symptoms of stress, anxiety, and depression (Jans-Beken et al., 2020; Lambert et al., 2012), even after controlling for personality traits (Wood, Maltby, Gillett, et al., 2008).

Gratitude-based interventions implemented before the pandemic have been effective in increasing positive affect, improving physical health and sleep quality, as well as lowering negative affect (Emmons & McCullough, 2003; Fritz et al., 2019; Froh et al., 2008). These interventions typically have participants write gratitude journals or count their blessings for a short period, usually about two weeks. Other gratitude interventions also have been shown to strengthen interpersonal connections (Emmons & McCullough, 2003), improve satisfaction in romantic relationships (Algoe et al., 2010), and increase comfort in expressing relationship concerns (Lambert & Fincham, 2011).

Given its beneficial impacts on personal and relational well-being, several gratitude-based interventions have also been implemented to address COVID-19 pandemic mental health challenges. In one online gratitude-based intervention involving Filipino undergraduate students, weekly gratitude interventions (e.g. listing five things, events, or people that one is grateful for) were found to significantly increase positive emotions (Datu et al., 2022). In another sample of Mexican college students, recalling positive memories prior the pandemic (i.e. during secondary

school) for which they were grateful also led to higher optimism (Puente-Díaz & Cavazos-Arroyo, 2022). Employing a 10-week gratitude journaling activity during the pandemic, university students from the U.S. reported significant increases in mental well-being compared with those assigned to a control condition (Geier & Morris, 2022). Further, participants from mainland China who reported higher levels of gratitude in a 14-day intervention also reported lower COVID-19-related stress on the day of the gratitude activity (Jiang, 2022). Finally, in an experimental study comparing a week-long online gratitude writing intervention with an expressive writing intervention and a control group, those in the gratitude intervention experienced lower levels of stress and negative affect, unlike participants in the other groups (Fekete & Deichert, 2022).

Although the abovementioned interventions during the on-going health crisis have shown the promising psychological payoffs linked to gratitude, they focus on measuring domain-general forms of gratitude. The evidence on how domain-specific forms of gratitude such as relational gratitude track well-being outcomes remains scarce. Investigating the links of domain-specific forms of gratitude to psychological functioning is important to understand specific contexts of gratitude expression that might facilitate effective social and psychological well-being.

THE PRESENT STUDY

Although past investigations document associations between gratitude and personal and relational well-being outcomes before (Jans-Beken et al., 2020; Portocarrero et al., 2020; Wood et al., 2010) and during the COVID-19 outbreak (Fekete & Deichert, 2022; Puente-Díaz & Cavazos-Arroyo, 2022), these studies focused on generalized or dispositional gratitude. To our knowledge, no study has examined the role of relational gratitude within the context of the on-going pandemic, despite evidence supporting its beneficial impacts on personal (Lambert & Fincham, 2011; Park et al., 2019) and relational well-being (Algoe et al., 2008, 2010; Gordon et al., 2012; Lambert et al., 2010; Lambert & Fincham, 2011).

Likewise, previous gratitude studies heavily relied on cross-sectional data and have not documented the incremental value of domain-specific forms of gratitude above and beyond trait gratitude. The present study, therefore, examines the longitudinal associations between relational gratitude and undergraduate students' life satisfaction, psychological well-being, relationship self-efficacy, and COVID-19 anxiety, while controlling for the influence of trait gratitude, age, gender, ethnicity, and auto-regression effects.

METHODS

Participants and procedures

The sample comprised 268 undergraduate students ($M = 19.97$; $SD = 1.57$) from a public university in Florida, United States. There were 239 female and 29 male students. Participants comprised White/Caucasian ($n = 173$), Latino or Hispanic ($n = 57$), African-American ($n = 16$), Asian or Pacific Islander ($n = 12$), and other ethnic backgrounds ($n = 10$). In the second phase of data collection, there were 181 participants ($n_{\text{male}} = 15$; $n_{\text{white/caucasian}} = 118$; $M_{\text{age}} = 20.21$; $SD_{\text{age}} = 1.70$) who completed the online survey. There was a 1-month interval between the first

and second waves of data collection that took place during the COVID-19 pandemic. Further, this study was part of a larger project that examined longitudinal antecedents of well-being among undergraduate students in the United States.

Prior to administering the survey, the authors secured approval from the Institutional Review Board of the second author's university. Students who participated in this study received a small amount of course credit.

Measures

Relational gratitude

The three-item Expression of Gratitude in Relationship Measure (Lambert et al., 2010) was used to assess the extent to which participants experience and express gratitude to their romantic partners. A sample from this measure includes "I express my gratitude for the things that my partner/friend does for me". Items were rated using a 5-point scale (1 = *Never*; 5 = *Very frequently*). Cronbach's alpha coefficients of this scale at the first and second waves of data collection were .92 and .94, respectively.

Dispositional gratitude

The Gratitude Questionnaire—Six-Item Form (McCullough et al., 2002) was used to assess the extent to which participants are inclined to express gratitude. A sample item in this scale includes "I have so much in life to be thankful for." Items were rated on a 7-point Likert scale (1 = *Strongly disagree*; 7 = *Strongly agree*). Cronbach's alpha coefficient for this scale at the first wave of data collection was .81.

Life satisfaction

The three-item life satisfaction subscale of the Concise Measure of Subjective Well-Being (Suh & Koo, 2011) was used to assess participants' perception of life satisfaction. A sample item in this scale includes "I am satisfied with the personal (e.g., achievements, personality, and health) aspects of my life." Items were rated on a 7-point Likert scale (1 = *Strongly disagree*; 7 = *Strongly agree*). Cronbach's alpha coefficients for this subscale at the first and second waves of data collection were .91 and .95, respectively.

Well-being

To assess overall well-being, the five-item WHO-5 Well-Being Index (WHO, 1998) was used. A sample item in this scale includes "I have felt cheerful and in good spirits." Items were marked on a 6-point scale (0 = *At no time*; 5 = *All of the time*). Cronbach's alpha coefficients for this index at the first and second waves of the survey were .92 and .95, respectively.

Relationship self-efficacy

The seven-item Relationship Efficacy Measure (Fincham et al., 2000) was used to assess participants' confidence in dealing with conflicts and problems they faced with their intimate partners. A sample item in the scale includes "When I put my mind to it I can resolve just about any disagreement that comes up between my partner and I." Items were marked on a 7-point Likert scale (1 = *Strongly disagree*; 7 = *Strongly agree*). Cronbach's alpha coefficients for the first and second waves of data were .92 and .95, respectively.

COVID-19 anxiety

The five-item Coronavirus Anxiety Scale (Lee, 2020) was used to assess participants' sense of apprehensions regarding the COVID-19 pandemic outbreak. A sample item includes "I felt dizzy, lightheaded, or faint, when I read or listened to news about the coronavirus (COVID-19)." Items were rated using a 5-point scale (0 = *Not at all*; 4 = *Nearly every day*). Cronbach's alpha coefficients for this scale for the first and second waves of data were .86 and .83, respectively.

Data analyses

Before conducting statistical analyses, we explored the pattern of missing data in this study. Given that Little's missing completely at random (MCAR) test showed that missing data were not missing completely at random, the missing responses in this dataset were not ignorable. To address this, we adopted a multiple imputation approach and used 10 imputed datasets in performing descriptive and inferential statistical analyses. In the final statistical models, we reported the pooled estimates which averaged the parameter estimates in 10 imputed datasets.

First, we calculated descriptive statistics and Cronbach's alpha reliability coefficients of all variables. Second, Pearson-*r* correlational analyses were carried out to assess the associations among relational gratitude, dispositional gratitude, relationship self-efficacy, and well-being outcomes. Third, after fulfilling key prerequisites (e.g. normality assumption, homoscedasticity, and absence of multivariate outliers), we used hierarchical regression analyses to assess whether relational gratitude predicts subsequent well-being outcomes after controlling for age, gender, ethnic backgrounds, dispositional gratitude, and auto-regressor effects. Specifically, demographic covariates such as age, gender, and ethnic backgrounds were entered in Step 1, dispositional gratitude and auto-regressor effects were entered in Step 2, and relational gratitude was entered in Step 3. These analyses were conducted using SPSS-28.

RESULTS

Table 1 shows the results of descriptive statistical, reliability, and correlational analyses. All subscales had good reliability coefficients. Further, Time 1 relational gratitude was positively correlated with relationship self-efficacy and well-being outcomes such as life satisfaction and well-being concurrently and after 1 month (see Table 1).

TABLE 1 Descriptive statistics, reliability, and correlational analyses among relational gratitude, dispositional gratitude, relational self-efficacy, and well-being outcomes.

<i>r</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Time 1 relational gratitude	4.73	0.52	(.92)										
2. Time 2 relational gratitude	4.73	0.58	.48***	(.94)									
3. Time 1 life satisfaction	5.57	1.22	.32***	.27***	(.91)								
4. Time 2 life satisfaction	5.71	1.32	.40***	.33***	.48***	(.95)							
5. Time 1 well-being	4.05	1.05	.29**	.27**	.40***	.44***	(.92)						
6. Time 2 well-being	3.98	1.17	.26***	.30***	.40***	.56***	.55***	(.95)					
7. Time 1 relationship self-efficacy	5.70	1.09	.30***	.17*	.36***	.31***	.24***	.21**	(.83)				
8. Time 2 relationship self-efficacy	5.70	1.13	.40***	.38***	.28**	.44***	.25***	.34***	.58***	(.85)			
9. Time 1 gratitude	5.88	1.00	.21***	.23**	.29***	.31***	.23***	.15	.37***	.39***	(.81)		
10. Time 1 COVID-19 anxiety	0.38	0.63	-.10	-.04	-.10	-.13	-.18**	-.14	-.10	-.09	-.06	(.86)	
11. Time 2 COVID-19 anxiety	0.29	0.62	-.17*	-.27**	-.21**	-.25***	-.19***	-.21**	-.26***	-.21*	-.11	.52***	(.83)

Note: Cronbach's alpha coefficients are located across the diagonal.

p* < .05. *p* < .01. ****p* < .001.

As relevant statistical assumptions (e.g. univariate normality, absence of multivariate outliers, and linear associations between relational gratitude and outcomes) were satisfied, hierarchical regression analyses were performed (see Table 2). Results showed that Time 1 relational gratitude positively predicted Time 2 life satisfaction and Time 2 relationship self-efficacy even after controlling for demographic covariates, dispositional gratitude, and auto-regressor effects. Similarly, Time 1 dispositional gratitude and auto-regressor variables (i.e. Time 1 life satisfaction and Time 1 relationship self-efficacy) positively predicted Time 2 relationship self-efficacy and Time 2 life satisfaction. However, Time 1 relational gratitude and Time 1 dispositional gratitude did not predict Time 2 psychological well-being and Time 2 COVID-19 anxiety after controlling for the effects of the abovementioned covariates. Only Time 1 psychological well-being and Time 1 COVID-19 anxiety positively predicted Time 2 psychological well-being and Time 2 COVID-19 anxiety. These demographic and psychological predictors accounted for 31.0 per cent to 44.20 per cent of the variance in well-being outcomes after two months follow-up. Results of post-hoc power analysis indicated that this research had high statistical power for all regression models.

DISCUSSION AND CONCLUSIONS

There is considerable evidence showcasing the emotional, psychological, and social benefits of domain-general gratitude. However, little is known about how gratitude in specific interpersonal contexts may increase understanding of such benefits over and beyond that of domain-general gratitude. The present study is the first to examine whether gratitude in relationships may contribute to social and well-being outcomes during the COVID-19 health crisis. Using a short-term longitudinal design, it examined whether relational gratitude contributes to understanding life satisfaction, well-being, relationship self-efficacy, and COVID-19 anxiety, after taking into account general levels of gratitude.

A key finding of this investigation revolves around the association of expressing gratitude in relationships with higher life satisfaction even after controlling for relevant demographic covariates, trait gratitude, and auto-regressor effects. This suggests that students who actively find ways to appreciate their partners are likely to feel content in life. Relational gratitude can potentially relate to higher subjective well-being as it may facilitate opportunities to achieve basic psychological needs for relatedness (Lyubomirsky & Layous, 2013) and proactive efforts to maintain healthy interpersonal ties (Algoe, 2012), which in turn bolster happiness. By frequently expressing gratitude to one's romantic partner, it is possible for respondents to be more mindful or aware of the positive aspects of their relationship including the support, companionship, and affection that they receive, and thus, lead to greater contentment in life, despite challenges and adversities experienced during the COVID-19 pandemic.

Indeed, recent investigations provide support on the psychological payoffs of having intimate relationships during the pandemic such as higher well-being, quality of life, and life satisfaction (Sisson et al., 2022; Tsang et al., 2023). On the other hand, ambiguities in emotional expression among collegiate students in romantic relationships during the pandemic were found to be negatively associated with subjective well-being (Wang et al., 2022). Although the findings of the present study coheres with recent evidence on how gratitude promotes well-being during the pandemic outbreak (Datu et al., 2022; Fekete & Deichert, 2022; Jiang, 2022), we believe that it is the first research of its kind to demonstrate a longitudinal link between domain-specific gratitude and life satisfaction amid this health crisis.

TABLE 2 Hierarchical regression analyses of demographic covariates, dispositional gratitude, and relational gratitude as predictors of relationship self-efficacy, well-being, life satisfaction, and COVID-19 anxiety.

Model	Predictors	B	SE	t	R ²	ΔR ²
1	Step 1				.042	.042
	Age	.05	.05	1.01		
	Gender	.19	.26	0.75		
	Ethnic backgrounds	.06	.05	1.25		
	Step 2				.414	.372***
	Age	.07	.04	1.81		
	Gender	.05	.22	0.21		
	Ethnic backgrounds	.02	.04	0.49		
	Dispositional gratitude	.23**	.08	2.95		
	T1 relationship self-efficacy	.53***	.07	7.91		
	Step 3				.442	.028**
	Age	.08*	.04	2.10		
	Gender	−.01	.22	−0.05		
	Ethnic backgrounds	.02	.04	.46		
	Dispositional gratitude	.20**	.08	2.69		
T1 relationship self-efficacy	.46***	.07	6.81			
T1 relational gratitude	.51*	.19	2.65			
2	Step 1				.011	.011
	Age	.01	.06	0.18		
	Gender	.08	.32	0.23		
	Ethnic backgrounds	.04	.06	0.76		
	Step 2				.284	.273***
	Age	.06	.06	1.17		
	Gender	.11	.29	0.39		
	Ethnic backgrounds	−.04	.05	−0.83		
	Dispositional gratitude	.25*	.10	2.56		
	T1 life satisfaction	.51***	.09	5.56		
	Step 3				.318	.034**
	Age	.07	.05	1.33		
	Gender	.01	.28	0.03		
	Ethnic backgrounds	−.04	.05	−0.75		
	Dispositional gratitude	.21*	1.00	2.12		
T1 life satisfaction	.42***	.09	4.79			
T1 relational gratitude	.68**	.22	3.09			
3	Step 1				.015	.015
	Age	.02	.05	0.30		
	Gender	−.04	.26	−0.15		

TABLE 2 (Continued)

Model	Predictors	B	SE	t	R ²	ΔR ²
	Ethnic backgrounds	.09	.06	1.55		
	Step 2				.331	.316***
	Age	.03	.05	0.66		
	Gender	.21	.23	0.89		
	Ethnic backgrounds	.06	.05	1.21		
	Dispositional gratitude	.01	.09	0.10		
	T1 well-being	.63***	.08	8.35		
	Step 3				.334	.003
	Age	.03	.05	0.76		
	Gender	.17	.23	0.03		
	Ethnic backgrounds	−.04	.05	0.72		
	Dispositional gratitude	−.01	.09	−0.08		
	T1 well-being	.60***	.08	7.42		
	T1 relational gratitude	.24	.19	1.27		
4	Step 1				.007	.007
	Age	−.01	.03	−0.14		
	Gender	.09	.14	0.63		
	Ethnic backgrounds	.02	.02	0.82		
	Step 2				.297	.29***
	Age	.002	.02	0.07		
	Gender	.02	.13	0.13		
	Ethnic backgrounds	.01	.02	0.39		
	Dispositional gratitude	−.05	.04	−1.15		
	T1 COVID-19 anxiety	.51***	.06	8.76		
	Step 3				.310	.013
	Age	−.001	.02	−0.06		
	Gender	.03	.13	0.25		
	Ethnic backgrounds	.01	.02	0.43		
	Dispositional gratitude	−.04	.05	−0.79		
	T1 COVID-19 anxiety	.50***	.06	8.78		
	T1 relational gratitude	−.14	.09	−1.47		

Note: Model 1 = Time 2 relationship self-efficacy as outcome; Model 2 = Time 2 life satisfaction as outcome; Model 3 = Time 2 well-being as outcome; Model 4 = Time 2 COVID-19 anxiety as outcome; only unstandardized coefficients are shown in the table.

* $p < .05$. ** $p < .01$. *** $p < .001$. † $p < .10$.

Further, this study shows that expression of gratitude towards an intimate partner relates to better relationship self-efficacy when controlling for demographic covariates, dispositional gratitude, and auto-regressor effects. This result indicates that appreciating a romantic partner's

efforts relates to higher perceived confidence in navigating conflicts and issues in their relationships. It is likely that this domain-specific form of gratitude may relate to better relationship self-efficacy as it can help individuals comfortably express concerns in relationships (Gordon et al., 2012) and stay committed to their partners (Park et al., 2019). Additionally, going by the social learning theory of Bandura (2008), frequent expressions of gratitude to one's romantic partner may be considered as a form of positive mastery experience that could strengthen a person's beliefs that he or she can successfully resolve and even prevent future relationship conflicts or struggles (i.e. relationship self-efficacy). Identifying and communicating to one's partner the positive aspects of a relationship can provide a first-hand experience and a useful "framework" of successfully expressing one's feelings and emotions to a significant other, which may make a person feel competent in handling a relational misunderstanding or miscommunication in the future. However, as these mechanisms are speculative, future research is needed to test social psychological processes that underpin the association of relational gratitude with later self-efficacy beliefs in specific interpersonal contexts.

By contrast, although both forms of gratitude relate to better life satisfaction, neither relational nor dispositional gratitude was linked to subsequent well-being. There are a few reasons that might account for these divergent findings. As we used a measure (i.e. WHO-5 Well-Being Index) that captures the emotional dimension of well-being—which is more fluctuating and less stable than life satisfaction (Diener et al., 1985), it is likely that both dispositional and relational gratitude might have inconsistent and unpredictable relationships to affective well-being. Further, it is possible that both forms of gratitude might have distal effects on emotional well-being, underscoring the importance of psychological processes that mediate the complex links of gratitude to diverse dimensions of psychological well-being. For example, do fulfillment of basic psychological needs of relatedness and sense of purpose mediate the associations of gratitude with well-being outcomes?

Further, both relational and dispositional gratitude did not predict later COVID-19 anxiety, corroborating recent evidence on the non-significant effects of gratitude on the same variable among Filipino undergraduate students (Datu et al., 2022). There are a few reasons that might account for the non-significant links of relational gratitude to this outcome. First, it is likely that the interval between the first and second phases of data collection might be too short to detect any significant associations between this domain-specific form of gratitude and mental health functioning. Second, it is possible that romantic relationship contexts may not always offer concrete pathways to lower anxiety in the context of the pandemic crisis. Third, it is plausible that there are psychological processes that might mediate the links of relational gratitude to anxiety. For example, expressing appreciation towards one's partner might relate to better capacity to reframe setbacks in relationships as opportunities to improve interpersonal problem-solving skills, which may be linked to lower anxiety during the pandemic outbreak. Consistent with the contextual perspective of positive psychological processes and outcomes (McNulty & Fincham, 2012), it is important to consider how specific contexts or situations might attenuate the psychological rewards linked to expression of character strengths such as gratitude. Clearly, this research reinforces equivocal evidence on the psychological impacts of gratitude interventions (Cregg & Cheavens, 2021).

Broadly speaking, our findings on the links of expressing gratitude in a romantic relationship context to life satisfaction and relationship self-efficacy above and beyond the effects of dispositional gratitude, demographic factors, and auto-regressor effects, partly support *find-bind-and-remind theory* (Algoe, 2012). Appreciating intimate partners' efforts, in other words, may not only relate to higher awareness of high-quality relationships but also to boost a sense of connectedness

with them. It is not surprising that gratitude expression can activate one's recall of positive experiences with specific people given the link of gratitude to effective emotion regulation approaches such as constructively modifying the interpretation of negative events or situations (Stone & Schmidt, 2020). Indeed, this study highlights how relational gratitude may serve as an engine for better perceived satisfaction of life amid the challenges of the COVID-19 pandemic outbreak.

Notwithstanding these novel findings, it is important to note that McNulty and Fincham (2012) have cautioned against the assumption that character strengths or positive psychological constructs such as gratitude, forgiveness, and kindness are beneficial to interpersonal relationships regardless of context. They noted that ostensive and excessive expressions of character strengths in unfavorable situations (e.g. troubled marriages and unstable relationships) can lead to negative outcomes (McNulty & Fincham, 2012). Indeed, examining the associations between gratitude as well as personal (i.e. psychological well-being and physical health) and relational (i.e. commitment, sexual satisfaction, and aggression) well-being among a large sample of married couples in the U.S., Cazzell et al. (2022) found that feelings of gratitude greater than the spousal support provided by the partner led to maladaptive outcomes (e.g. high levels of aggression). This study suggests that more gratitude may not always be beneficial. Likewise, even though some studies support the effectiveness of gratitude interventions in promoting well-being (Algoe et al., 2010; Emmons & McCullough, 2003), others report small to non-significant effects on psychological outcomes such as life satisfaction and stress (Koay et al., 2020) as well as symptoms of depression and anxiety (Cregg & Cheavens, 2021).

The findings of this study also need to be interpreted in the light of a number of relevant limitations. Even though the study supports a direction of effect from relational gratitude to life satisfaction and relational self-efficacy, this support is correlational. As such, it cannot offer insights on how gratitude in relational contexts causes changes in interpersonal behaviors and beneficial outcomes. This shortcoming can be addressed through conducting experimental studies that involve manipulating the extent to which one expresses gratitude towards their intimate partners. Because we used a regression-based approach in assessing the associations of relational gratitude with each well-being outcomes, findings might provide limited insights into how relational gratitude predicts multiple well-being outcomes and relational self-efficacy. Future research can adopt more rigorous analytic approaches such as random-intercept cross-lagged panel modeling approach to offer more precise estimates on the within- and between-person changes in relational gratitude and well-being over time. Although our sample of students was relatively diverse, the majority were still Caucasians residing in a Western country and predominantly female, so results may not be generalizable to students in non-Western cultural contexts. In future research, it is important to explore whether relational gratitude might have a comparable pattern of associations with social and well-being outcomes in more culturally and ethnically diverse samples. There is also a chance that common method bias might have contributed to the findings of this research as we relied on self-reported measures of relational gratitude and well-being outcomes. While relational gratitude is an individualized experience of thankfulness for one's partner, future research might profitably use alternative approaches in assessing this construct using dyadic assessments to provide more robust insights on the relational processes and links between expressing gratitude in relationships and well-being outcomes.

Notwithstanding the above limitations, this study has key implications for existing positive psychological research and practice. In terms of theory, the study provides a unique contribution to the gratitude literature by providing evidence on the incremental validity of relational

gratitude in predicting life satisfaction and relationship self-efficacy above and beyond the effects of trait or dispositional gratitude and other key covariates. Demonstrating the incremental value associated with domain-specific gratitude can enrich our understanding of specific contexts or situations in which gratitude might yield more beneficial or even detrimental psychological consequences. As regards practice, this research emphasizes the importance of cultivating gratitude in romantic relationship contexts to foster well-being outcomes. Psychologists, counselors, and other mental health professionals are encouraged to integrate gratitude-enhancing exercises in implementing psychological services to support couples who are struggling with relationship conflicts during this COVID-19 health crisis.

CONFLICT OF INTEREST STATEMENT

There was no conflict of interest in the conduct of this research.

DATA AVAILABILITY STATEMENT

Data will be available upon request to the corresponding author.

ETHICS STATEMENT

The researchers complied with the required ethical guidelines set by the APA. No potential psychological risk was induced during the data collection phase.

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