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# Parents' Perceptions of College Student Posttraumatic Growth During COVID-19

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**Abstract**

It is undeniable that COVID-19 has impacted all aspects of college student and family life. However, the posttraumatic growth (PTG) framework suggests there are opportunities for growth after traumatic or highly stressful events. To explore PTG in college students during the COVID-19 pandemic, this study recruited parents of college students ($N$ = 1655) from across the U.S. Hierarchical multiple regression analyses revealed that when parents reported that their student experienced more positive impacts of COVID-19 on their relationships and health, received more career support, and when parents reported that their own well-being improved, they were more likely to report that their student experienced PTG. Additionally, parent gender, student first-generation status, and student year in school were also associated with PTG. This is consistent with past research; when parents were well supported during the pandemic, their college students did better and were more likely to uphold academic and graduation plans. Findings underscore the important role of both university resources such as career support, and family resources such as parental well-being in buffering the negative effects of the pandemic and supporting PTG.

**Keywords:** college students; COVID-19; parenting; posttraumatic growth; well-being

## 1. Introduction

COVID-19 had an undeniable impact on all aspects of college student life. The pandemic was particularly disruptive for university students due to campus shutdowns, the transition to online learning, and the widespread return to family homes for students living on campus [1,2]. In the spring of 2020, over 1300 colleges and universities across the United States (U.S.) moved to fully online instruction [1].

Past research has documented the significant adverse effects of COVID-19 on college students' well-being, including physical and mental health challenges, difficulties with learning online, worries about income, career outlook and personal finances [3,4]. More specifically, a meta-analysis of 28 studies examining the mental health of college students during COVID-19 revealed that during COVID-19 there was an increased prevalence of stress, anxiety, and depression among university students as well as an overall increase in symptoms among the U.S. population [5].

Several studies have found that specific groups of students were especially vulnerable to these negative effects. Previous research revealed that women reported lower well-being as well as higher rates of anxiety and depression when compared to their male counterparts [6]. Similarly, first-generation college students experienced higher rates of generalized anxiety disorder and major depressive disorder during the COVID-19 pandemic than continuing generation students [7,8]. First-generation college students



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also had significant concerns about having enough money to continue their education, experienced barriers to academics, challenges with personal well-being, and increased family responsibilities [9]. They were also less likely than continuing generation students to seek support from family and friends for mental health and emotional concerns during the pandemic [10]. Additionally, students of color were shown to be disproportionately negatively impacted by the economic, academic, and psychological stresses associated with the pandemic [11]. The unequal impact COVID-19 had on racial and ethnic minorities as compared with White individuals has been discussed in the general population as well; structural inequalities in health, and working and living conditions were likely exacerbated by the COVID-19 pandemic [12].

### 1.1. Family Relationships and Support

Prime et al. [13] proposed a model whereby close family relationships were a protective factor, protecting against the risks presented to children and families by COVID-19. However, there is little empirical research published on the impact of COVID-19 on families of college students. One recent study found that, consistent with Prime et al.'s [13] contention, when parents and families were well supported during the pandemic, their college students did better and were more likely to uphold academic and graduation plans [14]. Social support from family was found to be the only significant individual contributor to a better quality of life during COVID-19, for both male and female college students [15]. Furthermore, students with fewer COVID-19 related stressors (e.g., financial, work, or academic) and close, emotionally supportive relationships with their parents reported greater happiness and life satisfaction [16]. Overall, family support was critical in shaping the well-being and resilience of college students during the COVID-19 pandemic. However, the inverse was also true; when students experienced relational challenges within the family system, such as low autonomy (due to limited privacy or parental hovering) while living at home during the pandemic, their coping skills and mental health declined [17]. Disparities in family support also emerged; first-generation college students reported that their communication with parents was less supportive than it was for their continuing generation peers during the pandemic [10].

### 1.2. Posttraumatic Growth

The posttraumatic growth (PTG) framework suggests that there are opportunities for positive transformation after traumatic or highly stressful events. Specifically, PTG refers to the positive cognitive and emotional changes that can emerge as individuals cope with and adapt to extremely stressful life circumstances or traumatic events [18–20]. The PTG framework is particularly relevant to the study of the COVID-19 pandemic [21]. In fact, even in the very early stages of the pandemic, scholars have found evidence of PTG in the general population [22]. A systematic literature review found that much of the variability reported in PTG was attributable to worries about the impact of COVID-19 on physical and mental health; however, there were mixed findings regarding the direction of those relationships, and little data on the prevalence of PTG [21]. More specifically, research about PTG among college students and emerging adults in the U.S. is scarce.

Tedeschi and Calhoun [18] identified three broad domains of growth that one may experience after a major stressor or traumatic event, such as COVID-19: (1) changes in perception of self (e.g., a worker who suddenly realized their own vulnerability when they lost their job during COVID-19, but then figured out other ways to financially support their family, resulting in feeling stronger and more confident); (2) shifts in interpersonal relationships (e.g., college students being forced to move home as a result of campus closures, and families then needing to renegotiate their relationships as they share spaces

and resources); and (3) changes in philosophy of life (e.g., a father who contracted COVID-19 was released from the hospital and started appreciating daily family experiences like mealtimes or phone calls from his college student).

While COVID-19 introduced many unexpected challenges for college students and their families, the pandemic also created experiences that supported the development of resilience and personal and relational growth. The existing literature suggests that college students commonly report low, but meaningful, levels of PTG in the aftermath of adversity [23,24]. About 20% of a sample of college students followed for one year of the pandemic reported PTG. In addition, positive affect, social support, and social skills were positively associated with PTG [25]. A survey study of PTG among young adults found that family connectedness, resilience, Post-Traumatic Stress Disorder (PTSD) symptoms, and worries specifically related to COVID-19 were all positively associated with PTG, while both depression and distress tolerance were negatively associated with PTG [23]. Another study found that first-generation college students who reported high levels of PTG also reported high levels of concern about the COVID-19 pandemic and its potential impact on themselves and others. In contrast, PTG served as a protective factor for continuing generation students [26].

While adolescents and emerging adults are generally reliable in reporting their own health and well-being, scholars have noted concerns about the validity of self-reported PTG measures due to recollection bias or inflated self-improvement reflections [27]. As a result, some researchers and practitioners recommend the use of proxy reports (e.g., information collected from parents, teachers, or counselors) to supplement or corroborate self-reported assessments [28]. The effectiveness of parent-proxy reports for measuring growth after trauma has been previously established across a range of populations, including studies of college students encountering extremely stressful life experiences [29] and younger children who are cancer survivors [30,31]. In the present study, the utilization of parent-proxy reports of PTG provides a validated metric of growth from a parent who was also experiencing the COVID-19 pandemic.

### *1.3. Current Study*

To contribute to the limited literature on PTG among college students in the U.S., the current study was designed to explore PTG among a national sample of parents of U.S. college students during the COVID-19 pandemic. The wide range in how countries responded to the COVID-19 pandemic makes it essential to focus research within a specific context; for this study, we focused on the U.S. context. More specifically, this study was designed to explore two research questions: (1) how are demographic characteristics, the impact of COVID-19 on the family, sources of student support, parent emotional support, and parent changes in well-being associated with PTG, and (2) do parent changes in well-being moderate the association between the COVID-19 relationship, financial, and health impacts and PTG? Due to limited existing research, there were no hypotheses.

## 2. Materials and Methods

In partnership with the Association of Higher Education Parent/Family Program Professionals (AHEPPP), parents of college students were recruited to participate in a 15 min online survey in Fall 2021. AHEPPP shared a customizable research invitation with over 200 partner institutions across both the U.S. and Canada. Individual parent and family program directors then emailed tailored recruitment messages to parents of students. At some institutions, parents automatically receive communication from parent and family programs; other institutions require parents to opt in. Informed consent was obtained from all participants involved in the study. Upon survey completion, participants

had an option to enter into a drawing for one of 15 $75 electronic gift cards. The final analytic sample (parents who completed at least 67% of the survey) included 1655 parents of undergraduate students at 4-year U.S. institutions from 50 states and 13 countries. Because there was just a small number of participants identifying as transgender or nonbinary (n = 11), analyses were limited to participants identifying as male or female to avoid any impacts on reliable final estimates. Parents were primarily female (84.5%), White (87.6%), had at least a bachelor's degree (76.9%), and had a household income above $100,000 (57.5%; 6.9% less than $50,000 a year and 18.3% $50,000 to $99,999 a year). Their students were primarily first (36.7%) and second (26.2%) year students (21.9% third year and 15.1% fourth year or higher), enrolled in public (84.2%) U.S. colleges/universities. In addition, 8.0% of parents reported that their student was living at home with family at the time of data collection.

### *2.1. Measures*

#### 2.1.1. Posttraumatic Growth

PTG was measured using 10 items adapted from the Parent-Proxy-Reported Posttraumatic Growth scale [31]. Parents were prompted with, "We know COVID-19 has been really hard for families. Some families have also talked about learning and growing during COVID-19". The question stem invited parents to, "Please share more about how COVID-19. . ." And then questions included, for example, ". . .has helped my student learn to deal better with their problems". Parents responded using a 5-point Likert-type scale (1 = Strongly Agree to 5 = Strongly Disagree). All items were reverse-coded, and a composite mean score was created with lower scores indicating lower PTG and higher scores indicating higher PTG (Cronbach's $\alpha$ = 0.91).

#### 2.1.2. COVID-19 Impact

Parents responded to eight questions to share, "In what ways has COVID-19 affected. . ." their students on a 5-point scale, with 1 = "In a very positive way" to 5 = "In a very negative way". Lower scores indicate a positive impact and higher scores indicate a negative impact of COVID-19. An exploratory factor analysis (EFA) was conducted to examine the structure of the eight items assessing the perceived impact of COVID-19 on students' health and family functioning. Eigenvalues of $\geq$1 were used to interpret the number of factors in the dataset. The initial analysis suggested a three-factor solution. Two items—"In what ways has COVID-19 affected your student's academic experience?" and ". . .your student's involvement in school activities?"—were initially loaded on the same factor as the health-related items but were conceptually misaligned. In addition, those items had substantial conceptual overlap with the support questions. Those two items were subsequently excluded from further analysis.

Based on the final factor structure of the remaining six items, three subscales were computed by summing two items within each domain. The relationship impact subscale included: ". . .communication with your college student" and ". . .your overall relationship with your college student". The financial impact subscale included: ". . .your family's financial status" and ". . .the way you manage money now". The health impact subscale included: ". . .your student's mental health" and ". . .your student's physical health".

#### 2.1.3. Student Support

Using 12 checklist items, parents indicated which career support (5 items, e.g., online career fair), academic support (5 items, e.g., virtual meeting with an academic advisor), and health support (2 items, e.g., telehealth for mental health) resources and opportunities their students had participated in since March 2020. A count of the number of selected supports was computed.

#### 2.1.4. Parent Emotional Support

Parents responded to the eight-item NIH Toolbox Item Bank v2.0-Emotional Support (Ages 18+)-Fixed Form [32], reporting on their social support in the past month ($\alpha$ = 0.97), for example, "You have someone who understands your problems". Response options ranged from 1 = Never to 5 = Always. A composite mean score was calculated, with higher scores indicating greater perceived support.

#### 2.1.5. Parent Well-Being Change (PWC)

Parents reported perceived changes in their well-being by reflecting on how their current experiences compared to one year prior. They responded to three questions, "Now think about this time last year: . . .has your overall physical health/overall sense of well-being/personal relationships with close friends changed?" Each item was rated on a 3-point scale ranging from 1 = Improved, 2 = Stayed the same, to 3 = Gotten worse. All items were reverse-coded so that higher scores reflected more positive changes. A composite score was then calculated by summing the three items, with higher scores indicating greater improvement in parent well-being (Cronbach's $\alpha$ = 0.67).

#### 2.1.6. Covariates

Covariates included parents' gender, race, household income, parent education, students' grade level, and living arrangement. Gender was coded as a binary variable (1 = female; 0 = male). First-generation status was determined based on parental education; if the parent had not completed a four-year college degree, the student was identified as a first-generation college student (1 = first generation; 0 = continuing generation). Race was recoded as a binary variable (1 = White; 0 = People of Color). Parents reported the family's total annual household income for the previous year on a 7-point scale (1 = Less than $25,000 to 7 = $150,000 or more). Living arrangement was coded as a binary variable (1 = student was living at home with family; 0 = student was not living at home with family).

### *2.2. Data Analysis Plan*

All analyses were conducted in R (version 4.5.0) [33]. To account for the power of a large sample size, a *p*-value of 0.01 is used throughout. First, to begin to explore the first research question, exploratory analyses including descriptive statistics and bivariate correlations (see Table 1) were computed. Normality assumptions were assessed via skewness and kurtosis using descriptive statistics, histograms, and boxplots.

Next, missing data were carefully reviewed. Single-item measures such as the covariates were treated as missing if the item was missing. For almost all composite scores (i.e., PTG, COVID-19 relationship impact, COVID-19 financial impact, COVID-19 health impact, parental emotional support, PWC), the presence of any missing items resulted in the composite being coded as missing, which was intended to reduce potential bias introduced by item-level missingness. The exception was career, academic, and health support, which were computed as a count of checked items, where missing reflects "not applicable". Overall, the extent of missing data was acceptable. Income had the highest proportion of missingness (17.4%; *n* = 288), followed by PTG (1.9%; *n* = 31). For all other variables, the proportion of missing data was very low (ranging from 0% to 1.02% of responses). To address missing data, we conducted multiple imputation with the composite scores and covariate variables as the basis for the imputation model using the mice package in R [34]. Five imputed datasets were generated with 20 iterations per chain, based on a specified predictor matrix and imputation methods. The results were pooled across the five imputations using the miceadds package [35], which implements methods consistent with Rubin's rules [36].

**Table 1.** Means, standard deviations, and correlations of key study variables ($n$ = 1655).

| Variable | *M* | *SD* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. PTG | 3.26 | 0.73 | | | | | | | | |
| 2. COVID-19 Impact: Relationship | 5.02 | 1.46 | −0.46 * | | | | | | | |
| 3. COVID-19 Impact: Financial | 6.15 | 1.17 | −0.15 * | 0.16 * | | | | | | |
| 4. COVID-19 Impact: Health | 6.45 | 1.54 | −0.31 * | 0.39 * | 0.20 * | | | | | |
| 5. Career Support | 0.29 | 0.64 | 0.12 * | −0.09 * | 0.02 | −0.05 | | | | |
| 6. Academic Support | 0.93 | 0.85 | 0.06 | −0.05 | 0.01 | 0.08 * | 0.22 * | | | |
| 7. Health Support | 0.41 | 0.63 | 0.01 | −0.01 | 0.02 | 0.23 * | 0.06 | 0.17 * | | |
| 8. Parent Emotional Support | 4.17 | 0.84 | 0.05 | −0.02 | −0.18 * | −0.12 * | −0.04 | −0.02 | −0.09 * | |
| 9. Parent Well-being Change | 6.25 | 1.35 | 0.15 * | −0.14 * | −0.14 * | −0.18 * | −0.03 | −0.04 | −0.02 | 0.23 * |

* $p < 0.01$.

To examine the associations between the outcome variable of PTG with key predictors, including COVID-19 relationship, financial, and health impacts; number of sources of career, academic, and health student supports; parent emotional support; and PWC, a series of hierarchical multiple regression analyses using the imputed datasets were conducted using Rubin's rules [36]. Hierarchical regression models were employed to evaluate predictors' unique contribution to PTG while controlling for other variables. Importantly, predictors may exhibit weak or non-significant bivariate correlations yet contribute meaningfully in multiple regression models due to suppression or confounding effects [37]. Therefore, we included all specified predictors in the hierarchical multiple regression even though they may not have had a significant bivariate correlation with PTG.

Prior to conducting analyses for the second research question, the hierarchical multiple regression analyses to test moderation, all continuous predictors were mean-centered to reduce multicollinearity, as the final model included interaction terms [38]. Predictors were entered stepwise. In Model 1, covariates (sex, first-generation status, race, grade, household income, and living arrangement) were entered to understand the demographic effects on PTG. In Model 2, variables representing COVID-19 impact (relationship, financial, and health) were added to examine their associations with PTG beyond demographic factors. In Model 3, sources of student support (career, academic, and health) were entered to determine whether access to multiple forms of support explained additional variance in PTG after controlling for demographics and the impact of COVID-19. In Model 4, parent emotional support was added to evaluate its unique contribution above and beyond sources of student support. In Model 5, PWC was added to test its association with PTG. Finally, in Model 6, interaction terms between PWC and each COVID-19 impact variable (i.e., PWC × relationship impact, PWC × financial impact, PWC × health impact) were entered to assess whether PWC moderated the associations between COVID-19 impact and PTG. Model comparisons for imputed data were conducted using the Likelihood Ratio (LR) method [39]. This approach repeatedly fits the full and null models (nested in the full model) across all imputations, averages the parameter estimates, and computes the model likelihood under those constraints.

## 3. Results

Findings for the first research question are presented in Table 1. To explore the second research question, a series of hierarchical multiple regression models using imputed datasets were conducted to examine the predictors of posttraumatic growth (PTG), with results presented in Table 2. The D3 statistics comparing model fit, implemented in the mitml package [40], are presented in Table 3.

**Table 2.** Hierarchical regression models predicting PTG.

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| | *B(SE)* | *B(SE)* | *B(SE)* | *B(SE)* | *B(SE)* | *B(SE)* |
| (Intercept) | 3.579 ** (0.118) | 3.409 ** (0.112) | 3.443 ** (0.112) | 3.458 ** (0.113) | 3.458 ** (0.112) | 3.478 ** (0.113) |
| Female | 0.283 ** (0.05) | 0.236 ** (0.044) | 0.224 ** (0.044) | 0.222 ** (0.044) | 0.224 ** (0.044) | 0.227 ** (0.044) |
| First-Gen | −0.119 * (0.046) | −0.115 * (0.04) | −0.106 * (0.04) | −0.104 * (0.04) | −0.106 * (0.04) | −0.105 * (0.04) |
| White | −0.205 ** (0.056) | −0.043 (0.051) | −0.039 (0.05) | −0.042 (0.051) | −0.044 (0.05) | −0.046 (0.05) |
| Grade | −0.044 * (0.016) | −0.033 (0.014) | −0.043 * (0.014) | −0.044 * (0.014) | −0.045 * (0.014) | −0.044 * (0.014) |
| Household Income | −0.043 * (0.015) | −0.035 (0.014) | −0.036 (0.014) | −0.038 (0.014) | −0.038 (0.014) | −0.04 * (0.014) |
| Living at Home | −0.017 (0.067) | −0.043 (0.059) | −0.037 (0.059) | −0.033 (0.059) | −0.033 (0.059) | −0.032 (0.059) |
| COVID: Relationship | | −0.19 ** (0.012) | −0.184 ** (0.012) | −0.185 ** (0.012) | −0.182 ** (0.012) | −0.183 ** (0.012) |
| COVID: Finance | | −0.038 * (0.014) | −0.04 * (0.014) | −0.038 * (0.014) | −0.034 (0.014) | −0.031 (0.015) |
| COVID: Health | | −0.075 ** (0.011) | −0.078 ** (0.012) | −0.076 ** (0.012) | −0.073 ** (0.012) | −0.076 ** (0.012) |
| Career Support | | | 0.099 ** (0.026) | 0.1 ** (0.026) | 0.102 ** (0.026) | 0.102 ** (0.026) |
| Academic Support | | | 0.023 (0.019) | 0.023 (0.019) | 0.025 (0.019) | 0.023 (0.019) |
| Health Support | | | 0.024 (0.026) | 0.026 (0.026) | 0.024 (0.026) | 0.029 (0.026) |
| Emotional Support | | | | 0.021 (0.019) | 0.009 (0.02) | 0.007 (0.02) |
| Parent Well-being Change (PWC) | | | | | 0.038 * (0.012) | 0.034 * (0.012) |
| PWC × COVID: Relationship | | | | | | −0.006 (0.008) |
| PWC × COVID: Finance | | | | | | 0.015 (0.009) |
| PWC × COVID: Health | | | | | | 0.019 (0.007) |
| | **Model Fit Statistics** | | | | | |
| $R^2$ | 0.045 | 0.267 | 0.276 | 0.277 | 0.281 | 0.286 |
| $R^2$ Adj. | 0.042 | 0.263 | 0.271 | 0.271 | 0.275 | 0.279 |
| AIC | 3611.5 | 3180.9 | 3165.4 | 3166.1 | 3157.9 | 3151.9 |
| BIC | 3654.8 | 3240.4 | 3241.2 | 3247.3 | 3244.4 | 3254.8 |
| Log.Lik. | −1797.765 | −1579.461 | −1568.695 | −1568.051 | −1562.926 | −1556.973 |
| RMSE | 0.72 | 0.63 | 0.62 | 0.62 | 0.62 | 0.62 |

** $p < 0.001$, * $p < 0.01$. $R^2$ = proportion of variance explained; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; Log.Lik. = log-likelihood; RMSE = root mean square error.

**Table 3.** Model comparison D3 statistics test results.

| Step | Model Comparison | *F* | *df*1 | *df*2 | *p* | *RIV* |
|---|---|---|---|---|---|---|
| 1 | Model 1 vs. Model 2 | 130.995 | 3 | 588.199 | <0.000 | 0.110 |
| 2 | Model 2 vs. Model 3 | 6.946 | 3 | 6437.705 | <0.000 | 0.030 |
| 3 | Model 3 vs. Model 4 | 1.234 | 1 | 5259.837 | 0.267 | 0.028 |
| 4 | Model 4 vs. Model 5 | 10.227 | 1 | 888100 | 0.001 | 0.002 |
| 5 | Model 5 vs. Model 6 | 3.783 | 3 | 3522.248 | 0.010 | 0.042 |

*df*1 = the number of predictors added between the two models. *df*2 = approximate residual degrees of freedom. *RIV* = relative increase in variance due to missing data.

The initial covariate-only model (Model 1), accounted for 4.5% of the variance in PTG ($R^2 = 0.045$). Several demographic variables were significantly associated with PTG (see Table 2). Specifically, being female was positively associated with PTG, while identifying as White, being the parent to a first-generation college student, student grade level, and household income were negatively associated with PTG. Living at home was not significantly related to PTG.

Adding COVID-19 impact variables (Model 2) significantly improved model fit, increasing the explained variance to 26.7% ($R^2 = 0.267$), compared to the covariate-only model (Model 1). The addition of support resources (Model 3) further improved model fit, though the gain in variance explained was modest ($R^2 = 0.276$). Emotional support (Model 4) did not significantly improve the model or contribute additional explanatory power. However, the inclusion of PWC (Model 5) did significantly improve model fit, resulting in a small but meaningful increase in explained variance ($R^2 = 0.281$). Finally, the addition of the interaction terms (Model 6) also significantly improved model fit, explaining 28.6% of the variance in PTG ($R^2 = 0.286$). Model fit indices also supported the selection of Model 6. It had the lowest Akaike Information Criterion (AIC) and the highest log-likelihood among

all models, indicating better model fit. Root mean square error (RMSE) remained stable from Model 2 onward, suggesting consistent residual variance across models (see Table 2).

Although Model 6 was selected as the final model due to its superior fit (see Table 3), none of the interaction terms were significant. Thus, model 5 is useful for interpreting the main effects of key predictors (See Table 2). Being female was positively associated with PTG, while being a parent to a first-generation college student, and student grade level, were negatively associated with PTG. Among the COVID-19 impact variables, relationship impact and health impact were negatively related to PTG. Notably, number of career supports was positively associated with PTG, while number of academic supports and health supports were not significant predictors. PWC was also positively associated with PTG, indicating that parents who reported greater improvements in their own well-being over the past year tended to report higher PTG for their college student.

From Model 6, the interactions between PWC and COVID-19 relationship, financial, and health impact were not significant. The interaction between PWC and health impact approached significance ($\boldsymbol{B} = 0.019$, $p < 0.05$), suggesting a potential moderating effect whereby greater improvements in parent well-being may buffer the negative association between COVID-19 health disruptions and PTG.

## 4. Discussion

The PTG framework [18] lends itself to the study of the impact of COVID-19 on college students. COVID-19 was undoubtedly a highly stressful event for college students and their families, as schools shut down and families were forced to pivot not only their expectations for what their students' college experience would be, but also how they were taking classes, earning money, paying for school, and in some cases even having to rethink their major to one they believed would be more beneficial for finding a future career. Findings from the current study are critical for understanding how we can better support college students and their families during times of stress through the challenges they may experience as they transition to and through college.

Career support was positively associated with PTG, but academic and health support did not seem to support PTG. For many students, COVID-19 created challenges for their career development pathway [41]. Some students expressed uncertainty about future employment opportunities, some students lost their jobs, they watched family members and friends lose jobs, and witnessed broader shifts in future employment opportunities [42,43]. For example, some young people were questioning whether there would be an entertainment industry, others decided they wanted to be in a helping profession after seeing all of the helpers who were supporting individuals and families in many ways during the COVID-19 pandemic [44].

The perceived impact of COVID-19 on relationships and health were negatively associated with PTG. When parents reported that their student was impacted by COVID-19 in more positive ways, they reported more PTG for their student as well. Students who experienced the stresses of COVID-19 while equipped with supports and resources perhaps experienced less distress associated with adversity or were better able to adapt to the adversity and use it as something positive to support growth and learning. As a result, these students reported more PTG or positive changes as a result of these COVID-19 relationship and health impacts. The measure of COVID-19 financial impact was significantly associated with PTG until PWC was added to the model. This is not surprising given the negative correlation between COVID-19 financial impact and PWC; financial strain can undoubtedly have a negative impact on parent well-being, which was the stronger influence on PTG.

Being female was positively associated with PTG, while identifying as first-generation, year in school, and household income (only in Model 6) were negatively associated with

PTG. The observed gender differences are consistent with findings from a meta-analysis of benefit finding and growth that revealed women engage in more benefit finding (measured as PTG and Stress-Related Growth) than men [45]. Previous research has shown that first-generation students who reported higher levels of PTG also experienced a greater impact of COVID-19, a pattern not present in their continuing generation peers [26]. However, in the general population of adults, a systematic review [21] revealed inconsistent findings across studies regarding the associations between PTG and demographic variables. These differences are likely attributable to the differential impacts (e.g., health, employment, or finances) of COVID-19 on the lives of individuals. The same would be true for students who were traversing college environments; there is undoubtedly extreme heterogeneity in how college students and their families were impacted by COVID-19. Further compounding this impact, racial and ethnic minority students, low-income students, and first-generation students, are navigating an environment that, in general, was not historically designed to support them.

Students who were further along in college, perhaps were experiencing more anxiety than students who were just starting college, thereby impacting their PTG. With graduation pending and uncertainty about their post-college plans, plans that may have shifted from when they first started college and that may have been upended as a result of the pandemic, these students were in the midst of these stressors and may not yet have had time for growth. For instance, a student who was interested in science or art may not have been able to complete those lab or studio classes during remote learning [44]. Alternatively, the transition to college during the COVID-19 pandemic may have been significantly more stressful for first-year students, requiring more adaptation and growth as they started their college journey in a very different way than expected. More research is needed to fully parse the association between age and the life stage at which individuals experience highly stressful events and the subsequent development of PTG (e.g., [46]).

Notably, PWC was significantly associated with PTG. It is reasonable that when parents were doing better, they could better support their students' growth. Given that this finding is based on parent reports, however, it is also possible that parents with higher well-being perceived their children as doing better, and therefore reported greater PTG for their child. Regardless, these results underscore the importance of adopting a family perspective, as families can serve as both a critical source of support [14] and, at times, a source of stress when facing disruptions or changes [47]. The interaction between PWC and COVID-19 health impact was marginally significant. While greater improvements in parent well-being may help buffer the negative effect of COVID-19 health impacts on PTG, this requires further investigation.

*Limitations and Future Directions*

This study makes an important contribution to the college student development literature by exploring parents' perspectives of how students were doing and considering how parents' own well-being impacted their students' PTG. However, there are a few limitations to note. First, the study relied on parent-reported data, which may introduce bias due to reliance on parents' perceptions of their college students' experiences. Future research should employ a family-level approach, collecting data from parents and their students, to examine whether parents and college students report similar experiences and to explore how their shared environment and experiences impact their own well-being, and how their own well-being influences the other and the larger family system. Such an approach would enhance our understanding of PTG in the context of the family system.

Second, while this study identified critical cross-sectional associations, the study design did not allow us to explore predictive or causal relationships. Additionally, despite

modifying the *p*-value to account for the large sample size, some associations which were statistically significant may still be considered relatively low. Longitudinal studies are needed to track the development of PTG over time, including how both stressors and growth shape students' and families' experiences. Findings are also somewhat inconsistent with previous research which has suggested that greater adversity provides more opportunities for PTG [e.g., 23]. Future research perhaps needs more nuanced measures of stressors and adversity and the many ways those different experiences and the students' own coping skills impact PTG in college students.

While this study offers a valuable snapshot of how college students and their families were impacted by COVID-19, our sample is not representative of all college students and their families or all types of institutions. The study was limited to parents of undergraduate students attending 4-year institutions, and parent participants were those who had either opted into email messages or were at least occasionally reading the email messages coming from the parent/family program at their student's institution. Moreover, parents of first-generation college students were underrepresented. While these students often face greater adversity navigating higher education than their continuing generation peers, families play a critical role in their success [48]. Future research should include more diverse samples of students and families across different institutional types, including community colleges and vocational programs, and should expand the representation of first-generation college students to enhance generalizability.

Overall, findings suggest that from the perspective of parents of college students, COVID-19 impacted college students' PTG. However, findings also underscore the important role of college and university resources such as career support, and family resources such as parental well-being in buffering the negative effects of the pandemic and supporting PTG. Supporting college student development requires a systemic approach, particularly during times of stress.

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## References

1. Smalley, A. Higher Education Responses to Coronavirus (COVID-19). National Conference of State Legislatures. 2020. Available online: https://www.ncsl.org/education/higher-education-responses-to-coronavirus-covid-19 (accessed on 29 January 2026).
2. Williams, C.D. Residence Halls and Residence Life After COVID-19. HigherEd Jobs. Available online: https://www.higheredjobs.com/Articles/articleDisplay.cfm?ID=2265 (accessed on 5 June 2020).

3. Kecojevic, A.; Basch, C.H.; Sullivan, M.; Davi, N.K. The impact of the COVID-19 epidemic on mental health of undergraduate students in New Jersey, cross-sectional study. *PLoS ONE* **2020**, *15*, e0239696. [CrossRef]
4. Lederer, A.M.; Hoban, M.T.; Lipson, S.K.; Zhou, S.; Eisenberg, D. More than inconvenienced: The unique needs of US college students during the COVID-19 pandemic. *Health Educ. Behav.* **2021**, *48*, 14–19. [CrossRef]
5. Wang, C.; Wen, W.; Zhang, H.; Ni, J.; Jiang, J.; Cheng, Y.; Zhou, M.; Ye, L.; Feng, Z.; Ge, Z.; et al. Anxiety, depression, and stress prevalence among college students during the COVID-19 pandemic: A systematic review and meta-analysis. *J. Am. Coll. Health* **2021**, *71*, 2123–2130. [CrossRef]
6. Hoyt, L.T.; Cohen, A.K.; Dull, B.; Castro, E.M.; Yazdani, N. "Constant stress has become the new normal": Stress and anxiety inequalities among US college students in the time of COVID-19. *J. Adolesc. Health* **2021**, *68*, 270–276. [CrossRef]
7. Chirikov, I.; Soria, K.M.; Horgos, B.; Jones-White, D. Undergraduate and Graduate Students' Mental Health During the COVID-19 Pandemic. Retrieved from the University Digital Conservancy. 2020. Available online: https://hdl.handle.net/11299/215271 (accessed on 29 January 2026).
8. Soria, K.M.; Kelling, C.; Mossinghoff, M.; Beahm, R. First-generation college students' mental health during the COVID-19 pandemic. *J. First-Gener. Stud. Success* **2022**, *2*, 97–117. [CrossRef]
9. Davis, C.R.; Hartman, H.; Turner, M.; Norton, T.; Sexton, J.; Méndez, D.; Méndez, J. "Listen to the feedback of students": First-generation college students voice inequalities in schooling brought on by the COVID-19 pandemic. *J. Coll. Stud. Retent. Res. Theory Pract.* **2024**, *26*, 151–175. [CrossRef]
10. Jeong, H.J.; Kim, S.; Lee, J. Mental health, life satisfaction, supportive parent communication, and help-seeking sources in the wake of COVID-19: First-generation college students (FGCS) vs. non-first-generation college students (non-FGCS). *J. Coll. Stud. Psychother.* **2023**, *37*, 71–86. [CrossRef]
11. Reyes-Portillo, J.A.; Warner, C.M.; Kline, E.A.; Bixter, M.T.; Chu, B.C.; Miranda, R.; Nadeem, E.; Nickerson, A.; Peralta, A.O.; Reigada, L.; et al. The psychological, academic, and economic impact of COVID-19 on college students in the epicenter of the pandemic. *Emerg. Adulthood* **2022**, *10*, 473–490. [CrossRef] [PubMed]
12. Tai, D.B.G.; Shah, A.; Doubeni, C.A.; Sia, I.G.; Wieland, M.L. The disproportionate impact of COVID-19 on racial and ethnic minorities in the United States. *Clin. Infect. Dis.* **2021**, *72*, 703–706. [CrossRef]
13. Prime, H.; Wade, M.; Browne, D.T. Risk and resilience in family well-being during the COVID-19 pandemic. *Am. Psychol.* **2020**, *75*, 631–643. [CrossRef]
14. Dworkin, J.; Cai, Q.; LeBouef, S.; Hruska, E. College family coping and disruptions during COVID-19: A consideration of the ABC-X model of family stress. *J. Comp. Fam. Stud.* **2023**, *53*, 502–522. [CrossRef]
15. Cahuas, A.; Marenus, M.W.; Kumaravel, V.; Murray, A.; Friedman, K.; Ottensoser, H.; Chen, W. Perceived social support and COVID-19 impact on quality of life in college students: An observational study. *Ann. Med.* **2023**, *55*, 136–145. [CrossRef]
16. Gallegos, M.I.; Zaring-Hinkle, B.; Bray, J.H. COVID-19 pandemic stresses and relationships in college students. *Fam. Relat.* **2022**, *71*, 29–45. [CrossRef]
17. Hall, S.S.; Zygmunt, E. "I hate it here": Mental health changes of college students living with parents during the COVID-19 quarantine. *Emerg. Adult.* **2021**, *9*, 449–461. [CrossRef]
18. Tedeschi, R.G.; Calhoun, L.G. *Trauma and Transformation: Growing in the Aftermath of Suffering*; SAGE Publications: Thousand Oaks, CA, USA, 1995.
19. Tedeschi, R.G.; Calhoun, L.G. The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *J. Trauma. Stress* **1996**, *9*, 455–471. [CrossRef]
20. Tedeschi, R.G.; Calhoun, L.G. Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychol. Inq.* **2004**, *15*, 1–18. [CrossRef]
21. Bovero, A.; Balzani, S.; Tormen, G.; Malandrone, F.; Carletto, S. Factors associated with post-traumatic growth during the COVID-19 Pandemic: A systematic review. *J. Clin. Med.* **2023**, *13*, 95. [CrossRef]
22. Wall, C.L.; Carson, J.; Brown, G. COVID-19 relates to both PTSD and PTG in a non-clinical population, why? *J. Loss Trauma* **2023**, *28*, 61–73. [CrossRef]
23. Hyun, S.; Wong, G.T.F.; Levy-Carrick, N.C.; Charmaraman, L.; Cozier, Y.; Yip, T.; Liu, C.H. Psychosocial correlates of posttraumatic growth among US young adults during the COVID-19 pandemic. *Psychiatry Res.* **2021**, *302*, 114035. [CrossRef]
24. Lipp, N.S.; O'bRien, K.M. Bereaved college students: Social support, coping style, continuing bonds, and social media use as predictors of complicated grief and posttraumatic growth. *OMEGA-J. Death Dying* **2022**, *85*, 178–203. [CrossRef] [PubMed]
25. Van der Hallen, R.; Godor, B.P. COVID-19 pandemic-related posttraumatic growth in a small cohort of university students: A 1-year longitudinal study. *Psychiatry Res.* **2022**, *312*, 114541. [CrossRef]
26. Governale, A.; McTighe, K.; Cechova, V. Psychological reactions to COVID-19: Ambiguous loss, posttraumatic growth, and coronavirus impact among college students. *Psychol. Trauma Theory Res. Pract. Policy* **2024**, *16*, 201. [CrossRef]
27. Park, C.L.; Lechner, S.C. Measurement issues in assessing growth following stressful life experiences. In *Handbook of Posttraumatic Growth*; Calhoun, L.G., Tedeschi, R.G., Eds.; Routledge: Oxfordshire, UK, 2006; pp. 47–67. [CrossRef]

28. Eiser, C.; Morse, R. Can parents rate their child's health-related quality of life? Results of a systematic review. *Qual. Life Res.* **2001**, *10*, 347–357. [CrossRef]
29. Park, C.L.; Cohen, L.H.; Murch, R.L. Assessment and prediction of stress-related growth. *J. Personal.* **1996**, *64*, 71–105. [CrossRef] [PubMed]
30. Clawson, A.H.; Jurbergs, N.; Lindwall, J.; Phipps, S. Concordance of parent proxy report and child self-report of posttraumatic stress in children with cancer and healthy children: Influence of parental posttraumatic stress. *Psycho-Oncol.* **2013**, *22*, 2593–2600. [CrossRef] [PubMed]
31. Koutná, V.; Blatný, M.; Jelínek, M. Concordance of child self-reported and parent proxy-reported posttraumatic growth in childhood cancer survivors. *Cancers* **2021**, *13*, 4230. [CrossRef]
32. National Institutes of Health. NIH Toolbox-Emotional Battery Emotional Support (Ages 18 and over) Fixed Form v2.0. 2016. Available online: https://www.healthmeasures.net/index.php?option=com_instruments&view=measure&id=641 (accessed on 29 January 2026).
33. R Core Team. *R: A Language and Environment for Statistical Computing*; R Foundation for Statistical Computing: Vienna, Austria, 2025; Available online: https://www.R-project.org/ (accessed on 29 January 2026).
34. van Buuren, S.; Groothuis-Oudshoorn, K. mice: Multivariate imputation by chained equations in R. *J. Stat. Softw.* **2011**, *45*, 1–67. [CrossRef]
35. Robitzsch, A.; Grund, S. Miceadds: Some Additional Multiple Imputation Functions, Especially for 'Mice'. R Package Version 3.19-4. 2025. Available online: https://CRAN.R-project.org/package=miceadds (accessed on 29 January 2026).
36. Rubin, D.B. *Multiple Imputation for Nonresponse in Surveys*; John Wiley & Sons: Hoboken, NJ, USA, 1987. [CrossRef]
37. Tzelgov, J.; Henik, A. Suppression situations in psychological research: Definitions, implications, and applications. *Psychol. Bull.* **1991**, *109*, 524–536. [CrossRef]
38. Aiken, L.S.; West, S.G.; Reno, R.R. *Multiple Regression: Testing and Interpreting Interactions*; SAGE Publications: Thousand Oaks, CA, USA, 1991.
39. Meng, X.-L.; Rubin, D.B. Performing likelihood ratio tests with multiply-imputed data sets. *Biometrika* **1992**, *79*, 103–111. [CrossRef]
40. Grund, S.; Robitzsch, A.; Luedtke, O. mitml: Tools for Multiple Imputation in Multilevel Modeling. R Package Version 0.4-5. 2023. Available online: https://github.com/simongrund1/mitml (accessed on 29 January 2026).
41. Driver, S.; Bullock-Yowell, E. The impact of psychological distress due to COVID-19 on college student career development. *Swiss Psychol. Open* **2022**, *2*, 3. [CrossRef]
42. Aucejo, E.M.; French, J.; Ugalde Araya, M.P.; Zafar, B. The impact of COVID-19 on student experiences and expectations: Evidence from a survey. *J. Public Econ.* **2020**, *191*, 104271. [CrossRef]
43. McCurdy, A.L.; Fletcher, A.C.; Alligood, B.N. Financial, resource, and psychological impacts of COVID-19 on U.S. College students: Who is impacted and what are the implications for adjustment and well-being? *Child. Youth Serv. Rev.* **2023**, *149*, 106932. [CrossRef]
44. Cai, Q.; Dworkin, J.; Hruska, E.; Vasquez, K.; LeBouef, S. The impact of COVID-19 on families and experiences with higher education over time. In Proceedings of the National Council on Family Relations, Minneapolis, MN, USA, 19 November 2022.
45. Helgeson, V.S.; Reynolds, K.A.; Tomich, P.L. A meta-analytic review of benefit finding and growth. *J. Consult. Clin. Psychol.* **2006**, *74*, 797. [CrossRef]
46. Brooks, M.; Lowe, M.; Graham-Kevan, N.; Robinson, S. Posttraumatic growth in students, crime survivors and trauma workers exposed to adversity. *Personal. Individ. Differ.* **2016**, *98*, 199–207. [CrossRef]
47. Son, C.; Hegde, S.; Smith, A.; Wang, X.; Sasangohar, F. Effects of COVID-19 on college students' mental health in the U.S.: Interview survey study. *J. Med. Internet Res.* **2020**, *22*, e21279. [CrossRef] [PubMed]
48. LeBouef, S.; Dworkin, J. First-generation college students and family support: A critical review of empirical research literature. *Educ. Sci.* **2021**, *11*, 294. [CrossRef]