

ORIGINAL ARTICLE

Parenthood during the COVID-19 pandemic: Post-traumatic growth amongst university students

Anna Harwood-Gross^{1,2}  | Yoav S. Bergman³  |

Ruth Pat-Horenczyk¹  | Miriam Schiff¹  | Rami Benbenishty^{1,4} 

¹Hebrew University of Jerusalem, Jerusalem, Israel

²Metiv, Israel Psychotrauma Center, Herzog Medical Center, Jerusalem, Israel

³Ashkelon Academic College, Ashkelon, Israel

⁴Andres Bello National University, Santiago, Chile

Correspondence

Anna Harwood-Gross, Paul Baerwald School of Social Work and Social Welfare, Hebrew University of Jerusalem, Mount Scopus, Jerusalem 91905, Israel.

Email: anna.harwood-gross@mail.huji.ac.il

Abstract

This study sought to investigate a positive dimension of coping with the COVID-19 pandemic, that of post-traumatic growth (PTG). This study investigated coping difficulties and PTG amongst parent and nonparent students in Israeli Universities. A total of 4022 parents (3648 Jews and 374 Palestinian-Arab Citizens [PACs]) and 14,651 nonparents (12,010 Jews and 2641 PACs) completed measures of coping, social support and PTG. Parents demonstrated significantly higher levels of coping and PTG. Amongst parents, fathers coped slightly better than mothers; however, while Jewish mothers demonstrated greater PTG than Jewish fathers, PAC fathers had significantly greater PTG than both PAC mothers and Jewish parents. These findings, while specific to COVID-19, indicate that PTG should be studied in greater depth in different ethnic and minority groups in order to develop enhanced understanding and facilitate promotion of post-traumatic growth, in addition to the prevention of COVID-19-related distress.

KEYWORDS

coronavirus, ethnicity, parenthood, post-traumatic growth

INTRODUCTION

The SARS-CoV-2 pandemic (COVID-19) has raged worldwide causing millions of deaths, disabilities, and economic hardship (WHO, 2021). Early findings have indicated that the potentially debilitating effects of the disease and consequent social restrictions have had a negative impact on mental health (Salari et al., 2020; Tasso et al., 2021). Increased levels of anxiety, depression, somatization, and distress have been widely reported amongst most populations (Jackson et al., 2021; Papp & Kouros, 2021) including children (Racine et al., 2020) and their parents (Russell et al., 2020).

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The following study was designed to assess the association between parenting and post-traumatic growth in addition to the mental health burdens more widely studied. The study compared Israeli and Palestinian-Arab Citizen (PAC) students who were and were not parents and attempted to elucidate whether parenting, and in turn ethnicity, contributed to the psychological growth experienced due to the struggle with COVID-19.

The effect of COVID-19 on the family

The pandemic affected family structures via professional and economic hardships in addition to the unique stressors pertinent to parents and children. Uncertainty in employment (Mimoun et al., 2020), socioeconomic difficulties (Garcini et al., 2022), and the extreme stress experienced by many helping professions (Williamson et al., 2020) affected families worldwide. In addition, families with children faced even greater pressures with these occupational hardships compounded by a lack of schooling and childcare. Across Europe it was reported that between 30% and 45% of the time that children were in online education settings due to COVID-19 lockdowns, parents were present during their studies, and that over 40% of parents reported worry and stress regarding their child's homeschooling (Thorell et al., 2021).

Despite numerous indications of increased “caregivers burden” (Davenport et al., 2020), parental stress (Orgilés et al., 2020) and parenting-related exhaustion (Marchetti et al., 2020) early in the pandemic, these conclusions were drawn on a presumption that parenthood places a unique and increased burden and emotional strain. As the literature demonstrates, better and worse parental well-being is both temporal (Einav et al., 2020; Nelson et al., 2013) and contextual (Negraia & Augustine, 2020) with many factors contributing to the complex relationship. None of the aforementioned studies included nonparents for comparison, nor measured potential positive consequences or benefits and to the best of our knowledge, this comparison is lacking in the scientific literature. Thus, despite the presumed added psychological burdens on parents, until parents and nonparents in similar social conditions are scientifically compared, it is difficult to make any definitive statements.

Since the initial preparation of this study, a large comparison of similarly aged parents and nonparents demonstrated higher post-traumatic stress symptoms in relation to the pandemic amongst parents, though this relied on participants relating to the “worst or most stressful event” during the pandemic rather than the pandemic overall (Wamser-Nanney et al., 2021). On the contrary, a closer examination of a recent study in Israel found that having children was a predictor of greater psychological quality of life during the pandemic though this was not examined further and data were only collected during the first month of the pandemic (Horesh et al., 2020). However, these studies did not assess post-traumatic growth.

Student parents during COVID-19

For parents juggling familial and external responsibilities, a subgroup which may be uniquely effected by the pandemic is that of university students (López-Castro et al., 2021). Drastic changes in learning location and course delivery combined with the loss of campus resources (such as counseling and supportive services) placed an increased strain on students (Hagedorn et al., 2021). Students reported difficulties with maintaining academic standards and increased anxiety and depression appeared to further impact academic achievement (Barbosa-Camacho et al., 2022). This population faced a loss of group support when their studies moved online and when compared with similar cohorts who graduated prior to the pandemic, they showed increased stress, depression and anxiety (Roche et al., 2022).

The increased difficulty for students during the pandemic added to the previously identified difficulty that student parents face. Parenthood has been identified as a risk factor for noncompletion of studies amongst university and college students, with over half of student parents in the USA reported

to drop out prior to completing their studies (Ho & Wei, 2011). Indeed, in a recent study entitled “If I spent five hours giving birth then I can do this final,” a qualitative analysis of parent students demonstrated the multifaceted impact of parenting on studies with experience overcoming adversity and increased motivation coupled with increased challenges and barriers to completing their education (Hotez et al., 2020). These challenges, combined with the fallout from the pandemic, may also have impacted mothers to a greater degree than fathers given the supposed greater burdens during COVID-19 placed on women, specifically in the field of childcare and home education (Peck, 2021). University students were required to study and work from home, children remained at home as schools and daycare centers shuttered and the traditional educational resources and support systems such as libraries and tutorials became inaccessible. While to the best of our knowledge, there has not been a study on noncompletion of studies amongst parents during the pandemic, many parents were reported to take unpaid leave or quit occupational positions due to a loss of childcare (Wamser-Nanney et al., 2021), under these conditions, it could be assumed that academic studies were also sidelined. Whereas the move to work-from-home enhanced productivity for some professions (Choudhury et al., 2021), scholarship may have a unique status, being especially vulnerable to being deprioritized when competing with the demands of parenting in the pandemic. Academic parents have described reducing work to the most necessary and urgent responsibilities when faced with pandemic-related lack of childcare, ultimately leaving research and scholarship to fall in their priority hierarchies (Bender et al., 2022).

Israeli Jewish and Palestinian-Arab student parents

In Israel, whilst parents and nonparents can be considered two distinct groups, especially regarding the effects of the pandemic, so too are Israel's Arab and Jewish citizens given the disparity in living conditions, government, and cultural contexts (Braun-Lewensohn et al., 2021). In the current pandemic, PACs appear to have suffered from greater levels of COVID-19-related distress and disturbances in well-being compared with Jewish citizens, though levels of individual resilience were similar for both groups (Kimhi et al., 2020). The two populations are predicted to also differ in the effect of the pandemic on student parents. Interestingly, in the latter study, as in Horesh et al.'s study on an Israeli population (2020), family size was a significant predictor of lower COVID-19-related anxiety, but only amongst Jewish citizens. The authors did not address this difference. Parenthood is believed to be an added burden for PACs in preventing ease of COVID-19 vaccine uptake due to the difficulties in transporting and caring for large families prevalent in the community (Rosen et al., 2021) but childcare and familial support in raising offspring has been demonstrated to be more accessible for PACs compared with Israeli Jewish parents (Feldman et al., 2001) adding complexity to this prediction. There has not yet been a study comparing Jewish Israeli and PAC parents' responses to the COVID-19 pandemic.

Increased stress, increased psychological growth?

Compared with the detrimental effects of the pandemic, less is known about positive psychological growth during COVID-19. Whereas risk factors for distress are greater understood, less is known about predictors of psychological growth or positive change during and following the pandemic. While increased challenges require a greater ability to adapt by regulating arousal and acting constructively and effectively in altering and decreasing stress (hereon known as “coping”) (Compas et al., 2001), better coping has been repeatedly linked to lower levels of COVID-19 distress and growth (Park et al., 2021). The ability to identify positive change following crises can promote well-being following potentially traumatic events (Bonanno, 2004) and stressful situations can be an opportunity for positive psychological growth in addition to associated difficulties. This positive growth has been conceptualized by the term, Post-Traumatic Growth (PTG; Tedeschi & Calhoun, 1996).

Post-Traumatic Growth refers to the positive psychological changes and growth which characterizes a potential post trauma adaptation trajectory and may occur following potentially traumatic events and result in an outcome beyond what was present prior to the event (Tedeschi et al., 2004). The concept of PTG has been the subject of hundreds of studies and is based on a natural phenomenon rather than that solely induced by therapeutic interventions (Tedeschi & Moore, 2020). By adapting one's cognitive schema to account for the detrimental effect of COVID-19, the pandemic, as in other potentially traumatic events (Barlow & Hetzel-Riggin, 2018), can be a catalyst for the development of PTG. The development of PTG in response to the COVID-19 pandemic has been studied recently amongst young adults (Hyun et al., 2021; Kowalski et al., 2021) following indications, even at the beginning of the pandemic, that "that which does not kill us, makes us stronger" (Tamiolaki & Kalaitzaki, 2020). Post-Traumatic Growth can be characterized by a greater appreciation of life and future possibilities, enhanced personal strength and growth in relationships and spirituality (Tedeschi et al., 2004). Factors which can promote PTG include personality characteristics such as optimism or hardiness, support and religiosity (Chan et al., 2016), and level of distress experienced (Dekel et al., 2012). In the current context of the COVID-19 pandemic, positive world beliefs (Vazquez et al., 2021) and marital status (Li et al., 2022) have been demonstrated to contribute to the experience of COVID-19-related PTG and PTG has demonstrated to be common amongst parents (Stallard et al., 2021) though this was not compared with nonparents. For Jews and PACs in Israel, positive psychological change following exposure to the regional conflict has not been widely studied with almost no comparison studies reported (Ayer et al., 2017). Moreover, although the relationship between PTSD symptoms and PTG has been reported as similar for both ethnic groups though PACs may have lower PTG stability (Hall et al., 2015).

There have been indications that females may experience stressful events as more burdensome, while also experiencing greater positive growth than males in similar situations (Li et al., 2021) though the difference is often small (Vishnevsky et al., 2010) and in some studies, nonexistent (Kim et al., 2007). Unpacking this difference, it has been suggested that while both genders have similar potential for psychological growth following traumatic situations, males require greater resources and community help (Shigemoto et al., 2020). Social support has been identified as particularly crucial to students and their ability to cope with stress during (Quintiliani et al., 2022) and prior to the pandemic (Brewer et al., 2019) and overall has been identified as particularly beneficial to the promotion of PTG (Cao et al., 2018).

This study studied PTG amongst students in Israel during the COVID-19 pandemic and sought to examine whether parenthood placed a greater burden on coping compared to nonparent students and whether student parents had greater or reduced PTG.

Parent and nonparents students in Israeli Universities were compared on levels of self-reported coping and PTG. Given the complexities of the current population, Jewish and PAC students in Israeli Universities, it was hypothesized that amongst parents there may be further differences amongst these sectors in addition to potential differences between mothers and fathers. Due to the conflicting research surrounding parenthood, COVID-19 and PTG and the lack of research comparing Israeli and PAC students during the pandemic, there were no a priori hypotheses, rather the study was designed as exploratory.

METHOD

Participants

A sample of 18,513 students from six universities in Israel responded to a multisite COVID-19-related survey studying the impact of COVID-19 on functioning. Following each university's ethical approval, the questionnaire was delivered as a link to all students. No compensation was offered. The Dean's office in each university distributed the questionnaire link in Hebrew and Arabic, to all students via

their institutional e-mail addresses. Three reminders were sent. The questionnaire was anonymous. An informed consent form was presented first, and only students who marked “agree” were referred to the questionnaire. Data collection took place in the midst of the pandemic, between September and November, 2020. During most of that time there were guidelines instructing citizens to “stay at home,” and for part there was a total lockdown.

The sample included 4022 students who were parents (3648 Jews and 374 PACs) and 14,651 students who were not parents (12,010 Jews and 2641 PACs). Demographics can be seen in Table 1.

Measures

The questionnaire was compiled initially from measures in Hebrew. It was then translated by two mother tongue Palestinian Arabic speakers (who also spoke high-level Hebrew) and then a third mother tongue Palestinian Arabic speaker checked for coherence between the two measures.

Demographics

Participants were asked about their age (at next birthday), gender (female, male), ethnicity (Jewish or Arab), family status (either in a relationship, married, engaged or living with partner or not in a relationship), economic status (whether they were better or worse off following the COVID-19 outbreak) religiosity (religious or secular), and number of children (recoded to whether they were parents).

Coping

Coping was measured by asking participants to rate themselves regarding their perceived level of coping with the COVID-19 pandemic. They were asked to “Please rate yourself on a scale ranging from 1 “not coping at all, in crisis” to 10 “coping extremely well”. Following the suggestion of Eddy et al. (2019) for a single item measure, it was adjusted to the specific context and reflected a global assessment of coping with the COVID-19 pandemic. This measure of coping was used in several other studies (Schiff et al., 2020, 2022). Single item measures of coping have been introduced to shorten questionnaires and when questions are concise and clear have shown considerable reliability and validity.

Social support

We used the Brief form of the Perceived Social Support Questionnaire (Kliem et al., 2015). This valid and widely used scale (Lin et al., 2019) includes six items, e.g., “I receive a lot of understanding and security from others.” Responses are provided on a 5-point scale ranging from 1 “not true at all” to 5 “very true.” Higher scores indicate higher perceived social support. Cronbach's α in the present study = 0.85. A composite score of perceived support was created by averaging the six items.

Post-traumatic growth

The Post-Traumatic Growth Inventory- Short Form (PTGI-SF; Cann et al., 2010) measures the degree to which a person feels that they have achieved positive growth following a traumatic event (in the current research, the COVID-19 pandemic). The PTGI-SF was recently used in a similar population to study PTG in the context of the COVID-19 pandemic (Hyun et al., 2021). Post-traumatic growth

TABLE 1 Means and standard deviations for demographic and test variables divided by parent status and ethnicity

	Total sample (<i>n</i> = 18,673)		Parent (<i>n</i> = 4022)		Nonparents (<i>n</i> = 14,651)		Difference between parents and non-parents
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Age							
Jews (<i>n</i> = 11,914)	30.11	9.38	42.02	11.01	26.49	4.62	$t_{4005.69} = -82.69, p < 0.001$
PACs (<i>n</i> = 3613)	25.27	7.04	38.44	9.37	23.41	4.03	$t_{388.18} = -30.37, p < 0.001$
Total	29.33	9.22	41.69	10.91	25.93	4.67	
Gender % Female							
Jews	53.8%		56.3%		53%		$\chi^2_1 = 11.62, p = 0.001$
PACs	65%		64.1%		65.7%		$\chi^2_1 = 0.33, p = 0.57$
Total	55.7%		57%		55.3%		
Economic status							
Jews	2.48	0.84	2.56	0.76	2.45	0.86	$t_{5556.07} = -6.5, p < 0.001$
PACs	2.03	0.89	2.12	0.82	2.01	0.9	$t_{2447} = -2.1, p = 0.04$
Total	2.4	0.86	2.52	0.78	2.37	0.88	
% in relationship							
Jews	52.8%		93.15%		40.57		$\chi^2_1 = 3103.57, p < 0.001$
PACs	25.3%		96.26%		15.35%		$\chi^2_1 = 1132.03, p < 0.001$
Total	48.4%		93.44%		36.02%		
PTGI total							
Jews	17.5	11.28	19.58	11.26	16.85	11.21	$t_{12388} = -11.53, p < 0.001$
PACs	24.68	11.97	28.23	11.01	24.16	12.02	$t_{419.91} = -5.96, p < 0.001$
Total	18.66	11.7	20.39	11.52	18.16	11.70	
PTGI relating to others							
Jews	3.35	2.78	3.87	2.82	3.19	2.78	$t_{12184} = -11.33, p < 0.001$
PACs	3.88	2.79	4.80	2.72	3.74	2.78	$t_{2329} = -6.16, p < 0.001$
Total	3.44	2.80	3.95	2.81	3.29	2.78	
PTGI new possibilities							
Jews	3.60	2.72	3.77	2.64	3.55	2.75	$t_{5015.84} = -3.98, p < 0.001$
PACs	4.82	2.79	5.37	2.71	4.74	2.81	$t_{2339} = -3.65, p < 0.001$
Total	3.8	2.77	3.92	2.69	3.76	2.8	
PTGI personal strength							
Jews	4.29	3.04	4.99	3.01	4.07	3.02	$t_{12223} = -14.49, p < 0.001$
PACs	5.73	2.88	6.42	2.28	5.63	2.95	$t_{473.19} = -5.42, p < 0.001$
Total	4.52	3.06	5.13	2.98	4.35	3.06	
PTGI spiritual change							
Jews	2.13	2.57	2.63	2.75	1.98	2.5	$t_{4484.96} = -11.29, p < 0.001$
PACs	5.01	3.31	5.81	3.0	4.89	3.33	$t_{416.52} = -4.87, p < 0.001$
Total	2.59	2.90	2.92	2.92	2.5	2.89	
PTGI appreciate life							
Jews	4.27	2.81	4.51	2.82	4.2	2.8	$t_{12292} = -5.25, p < 0.001$
PACs	5.49	2.76	5.99	2.74	5.42	2.75	$t_{2353} = -3.34, p = 0.001$
Total	4.70	2.84	4.65	2.84	4.42	2.83	

TABLE 1 (Continued)

	Total sample (<i>n</i> = 18,673)		Parent (<i>n</i> = 4022)		Nonparents (<i>n</i> = 14,651)		Difference between parents and non-parents
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Coping							
Jews	6.92	2	7.38	1.89	6.78	2.01	$t_{5877.25} = -15.8, p < 0.001$
PACs	6.39	2.34	6.83	2.1	6.32	2.34	$t_{482.76} = -4.12, p < 0.001$
Total	6.84	2.07	7.33	1.91	6.7	2.09	
Support							
Jews	3.68	0.76	3.81	0.75	3.64	0.75	$t_{12293} = -11.08, p < 0.001$
PACs	3.13	0.84	3.29	0.89	3.11	0.83	$t_{2391} = -3.56, p = 0.001$
Total	3.59	0.8	3.76	0.78	3.54	0.79	

is measured in five domains: relating to others (i.e., I have a greater sense of closeness with others; Cronbach α 's = 0.73), new possibilities (i.e., I established a new path for my life; $\alpha = 0.65$), personal strength (i.e., I know I can better handle difficulties; $\alpha = 0.76$), spiritual change (i.e., I have a better understanding of spiritual matters; $\alpha = 0.76$), and appreciation of life (i.e., I have changed my priorities about what is important in life; $\alpha = 0.73$). Each subscale is measured using two questions rating the level of change from 0 (none) to 5 (greatly) and a total score is achieved by summing responses. Responses can range from 0 to 10 for each subscale and 0 to 50 for total PTGI score. While there is no established cut-off scores, guidelines suggest that for each question, 0–2 be considered “None-to-Low PTGI” and 3–5 “Moderate-to-High PTGI” thus for each subscale a score higher than 6 could be considered “Moderate-to-High PTGI” and for a total score, a score above 30 could be considered “Moderate-to-High PTGI” (Jansen et al., 2011).

Data analysis

All statistical analyses were performed with SPSS 25.0 for Windows (SPSS). Statistical threshold for significance for all measures was set at $p < 0.05$ and partial eta squared was used as a measurement of effect size. To examine the effect of parenthood on the experience of coping and PTG as related to the experience of the COVID-19 pandemic, a multivariate analysis of covariance (MANCOVA) was conducted. Coping, social support and total PTG were included as dependent variables and parenthood was included as the dichotomous independent variable. Given the evidence that age and gender (Cao et al., 2018; Vishnevsky et al., 2010) are significant predictors of PTG and economic status and relationship status implicated in the experience of a global pandemic, they were included as covariates.

Based on the significant results of the MANCOVA, further analyses were carried out to determine whether there was difference amongst parents. Ethnicity and gender were entered as independent variables in addition to the interaction effect between them whereas total PTG scores, coping and social support were included as dependent variables. Age, gender, economic status, age of youngest child and relationship status were entered as covariates.

RESULTS

Demographics

The demographics of participants are displayed in Table 1 and correlations between variables in Table 2. Parents and nonparents differed on all demographic variables other than the gender of PAC participants thus demographic variables were entered as covariates for all MANCOVAs.

TABLE 2 Correlation matrix for study variables

Variable	1	2	3	4	5	6	7	8
1. Age	–							
2. Gender ^a (male)	–0.31**	–						
3. Relationship status ^b (not in a relationship)	0.41**	–0.03**	–					
4. Economic status ^c	–0.10**	–0.09**	0.05**	–				
5. Ethnicity ^d	–0.19**	–0.09**	–0.19**	–0.19**	–			
6. Parenthood ^e	0.70**	0.01	0.07**	0.07**	–0.1**	–		
7. Post-traumatic growth	0.01	0.21	–0.01	–0.10**	0.23**	0.08**	–	
8. Coping	0.14**	–0.08**	0.09**	0.22**	–0.10**	0.04**	0.04**	–
9. Social support	0.14**	0.05**	0.21**	0.25**	–0.25**	0.12**	0.11**	0.32**

Note: $n = 18,673$ correlations represent Pearson's coefficients except for gender and relationship status, ethnicity and parenthood, which represent point-biserial correlations, and economic status, which represent Spearman's Rho.

^a1 = male; 2 = female.

^b1 = not in a relationship; 2 = in a relationship.

^c1 = much worse, 2 = worse, 3 = about the same, 4 = better, 5 = much better.

^d1 = Jew, 2 = PAC.

^e1 = no, children, 2 = has children.

** $p < 0.001$.

Differences between parents and nonparents

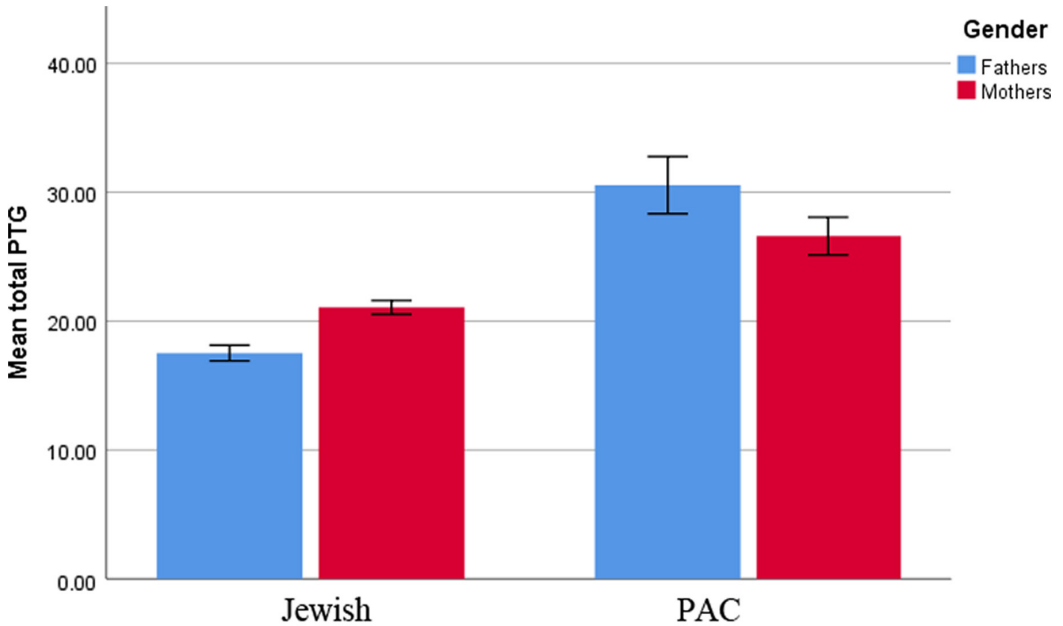
The MANCOVA yielded a main effect of parenthood, on all three variables (Wilks' Lambda = 0.987, $F_{3,17104} = 75.30$, $p < 0.001$, $\eta^2 = 0.013$). Univariate analyses indicated that parents experienced better coping ($F_{1,17106} = 18.14$, $p < 0.001$, $\eta^2 = 0.001$), had greater support ($F_{1,17106} = 8.99$, $p < 0.01$, $\eta^2 = 0.001$), and experienced greater PTG ($F_{1,17106} = 179.07$, $p < 0.001$, $\eta^2 = 0.01$) than nonparents. All covariates (i.e. age, gender and relationship status) were significant.

Differences between parents: PAC and Jewish, mothers and fathers

Following the result that parents experienced greater coping, social support and PTG, secondary analyses were performed solely on the parents group. The study variables ethnicity (Jewish or Arab) and gender (males and females) were included as independent variables. The MANCOVA yielded a main effect of ethnicity (Wilks' Lambda = 0.937, $F_{3,3397} = 75.59$, $p < 0.001$, $\eta^2 = 0.063$). More specifically, in comparison with Jewish participants, PACs reported significantly higher levels of PTG ($M = 28.45$, $SD = 10.49$ vs. $M = 19.85$, $SD = 11.23$, respectively; $F_{3,3407} = 159.51$, $p < 0.001$, $\eta^2 = 0.045$). While the effect for gender reached the level of initial significance (Wilks' Lambda = 0.997, $F_{3,3397} = 3.38$, $p = 0.02$), applying the Bonferroni correction renders this finding insignificant. Gender and ethnicity demonstrated a significant interaction effect (Wilks' Lambda = 0.984, $F_{3,3397} = 18.11$, $p < 0.001$, $\eta^2 = 0.016$). As can be seen in Table 3, for the dependent variable of coping, there was a main effect of gender and ethnicity. Overall fathers rated their coping as slightly higher than mothers and Jews more than PACs but there was no significant interaction. For social support, Jews reported having greater social support than PACs and PAC fathers reported having greater social support than PAC mothers though there was no main effect of gender. The most significant differences were found for the variable of PTG. PACs had significantly greater PTG than Jewish participants, but this difference was most pronounced when gender was considered with PAC fathers having greater PTG than PAC mothers and Jewish mothers having greater PTG than Jewish fathers (see Figure 1). All covariates except child age were significant.

TABLE 3 Means and standard deviations for parents on test variables divided by gender and ethnicity

	Mothers (<i>n</i> = 1988)		Fathers (<i>n</i> = 1463)		Both genders		Group dif. gender	Group dif. ethnicity	Group interaction
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Coping									
Jews	7.29	1.85	7.42	1.94	7.35	1.89	$F_{1,3407} = 7.03,$ $p = 0.01$	$F_{1,3407} = 5.8,$ $p = 0.02$	ns
PACs	6.58	2.21	7.17	1.8	6.82	2.06			
Both ethnicities	7.23	1.89	7.4	1.93					
Social support									
Jews	3.86	0.76	3.73	0.75	3.80	0.76	ns	$F_{1,3407} = 45.45,$ $p = 0.01$	$F_{2,3407} = 12.07,$ $p < 0.001$
PACs	3.22	0.83	3.60	0.71	3.38	0.76			
Both ethnicities	3.80	0.78	3.72	0.75					
PTG (all)									
Jews (<i>n</i> = 3167)	21.26	11.22	17.83	11.05	19.8	11.27	ns	$F_{1,3407} = 159.51,$ $p < 0.001$	$F_{3,3407} = 36.19,$ $p < 0.001$
PACs (<i>n</i> = 293)	26.4	10.07	31.53	11.41	28.53	10.82			
Both ethnicities	21.71	11.22	18.91	11.67					



Note: Error bars 95% CIs

FIGURE 1 PTG amongst parents: Jewish and PAC, mothers and fathers. Error bars 95% CIs

DISCUSSION

The current study assessed the level of post-traumatic growth amongst students in Israeli universities who are parents (as compared with nonparents) in the context of the COVID-19 pandemic. The results highlighted the contribution of parenthood to PTG amongst students and the difference amongst Jewish and PAC mothers and fathers. Overall, both parents and nonparent students demonstrated relatively high levels of coping and support with the COVID-19 pandemic despite major challenges to their and their children's education and routine. Parents and nonparents also demonstrated low-to-moderate levels of PTG. The current study demonstrated that parenthood was associated with greater psychological growth in the current pandemic and is manifested in greater coping and garnering support from others amongst Israeli students. The greatest advantage of parents over nonparents in the current research is that parents had significantly greater PTG in the face of COVID-19 (overall and for all types of PTG measured). Furthermore, PAC students in general and PAC fathers in particular, experienced greater PTG as compared to Jewish parents and nonparents.

The finding that parents coped better and had higher levels of PTG than nonparents was particularly interesting given the preponderance of research indicating the greater suffering reported by this group (such as Davenport et al., 2020). The finding remained significant even when the contribution of support from others, economic status and being in a marital or significant relationship was taken into consideration. The uniqueness of parenthood, over and above living in a family unit, must thus be considered. One explanation for this finding draws on the importance of childbirth in both Israeli and PAC culture. Israel and the Palestinian territories have the highest birth rates in the developed world (3.1 children per woman) and this statistic is elevated amongst religious and secular Jews and PACs alike (The Taub Center, 2019). Indeed, unlike other Western countries, where number of children is negatively correlated with academic achievement, in Israel, there is no such correlation (The Taub Center, 2019). Having dependents during academic studies undoubtedly creates additional challenges but it also provides a foundation for overcoming such difficulties in search of a greater goal (Hotez et al., 2020). Indeed, in the Israeli population, for both PACs and Jews, it was demonstrated that meaning making, finding purpose in coping with challenges and creating a sense of coherence in narrative was the greatest predictor for lower distress during the COVID-19 pandemic (Braun-Lewensohn et al., 2021).

Moreover, Israeli society is made up of many collectivistic cultures (the Ultra-Orthodox, PAC and nationalistic religious Jews for example) which further emphasize the significance of coping with challenges in order to support or care for others (Wong, 2020). Children, in the current culture, may provide greater challenges and obstacles to overcome, especially amongst parents juggling their own and their children's education, but they also have been demonstrated to enhance meaning and a sense of purpose for parents (Nomaguchi & Milkie, 2003) and this, it appears, both fosters PTG and resilience to stress (Bonanno, 2004) and enhances coping during the pandemic (Braun-Lewensohn et al., 2021).

In addition to the enhanced meaning and purpose that parenting may contribute to the experience of the COVID-19 pandemic, the added organizational difficulties and "caregivers burden" (Davenport et al., 2020) as outlined in the literature, may also have been experienced prior to the pandemic given the difficulties that parents experience in the transition to being parents in the workforce or in education. While parenting can enhance well-being, work satisfaction has been demonstrated to decline following the transition to parenthood (Georgellis et al., 2012) and the reorganization required during the COVID-19 pandemic, whilst unprecedented, may also have been a continuation of the upheaval already experienced during the previous transition to parenthood. While not requiring a traumatizing event, PTG requires a level of upheaval or crisis to promote subsequent growth and parenthood has been identified as particularly ripe for this (Taubman-Ben-Ari et al., 2011). The transition to parenthood was stressful enough to promote PTG and the added difficulties brought on by COVID-19 were both then enough upheaval to promote PTG but also parents overall engaged adequate (indeed, greater) coping resources, potentially refined during the transition to combining parenthood with their

university studies, to enable them to function during the pandemic. In summary, it is thus proposed that there are two potential mechanisms at play which could explain the increased PTG amongst parents compared to nonparents. The added sense of purpose and meaning associated with parenting children and the sense of mastery from successfully juggling parenting and university studies prior to the pandemic may have acted as primers for the development of enhanced PTG during the pandemic.

It is this line of thought which can be drawn upon to understand the further differences identified within the parent group. PAC students experienced significantly higher PTG than Jewish students and this difference was especially pronounced for PAC parents compared to Israeli parents within the student sample, most noticeably, for PAC fathers. Whereas, consistent with the international literature (such as Li et al., 2021), Jewish mothers experienced slightly greater PTG than Jewish fathers, for PACs, this trend was reversed. Indeed, PAC fathers reported worse coping and less support than Jewish counterparts but with higher PTG.

Palestinian-Arab Citizens in higher education in Israel, and especially, those who are parents, have already overcome a number of challenges to begin their studies. They are proportionally under-represented in the University population (Inter Agency Task Force on Israeli Arab Issues, 2019) and upon entering university contend with inadequate preparation for high-level studies, culture clashes and language and economic barriers (Cohen-Azaria & Zamir, 2021). These difficulties have been especially prevalent for female PAC students. Whereas the challenges experienced as a PAC father in an Israeli university are coupled with greater social support than PAC mothers, they are also shrouded in less stigma than an PAC mother leaving her children to study. In interviews with PAC students in Israeli universities, Cohen-Azaria and Zamir (2021) reported the clash felt between the gender role expected of PAC mothers and the desire to pursue higher education. Whereas male students reported the support from wives to enable them to study, female students tended to report the lack of availability of support from husbands and criticism from extended family members. While the increased demands and upheaval on PAC parents in general in higher education may encourage enhanced PTG during the COVID-19 pandemic, as seen in theories of optimal stress (Dekel et al., 2012; Taubman-Ben-Ari et al., 2011), the stigma and lower support from familial structures toward PAC mothers may reduce their potential for PTG. The increased stigma and reduced support for studies from extended families and community may also be influential in the lower potential for meaning making and purpose, key features in the development of PTG. Studying at a university may actually distance PAC mothers from the collectivistic culture they are members of as opposed to PAC fathers, for whom the prospect of greater employment following their studies is in keeping with collectivistic values

The current findings differed from the findings of Braun-Lewensohn et al. (2021) who found that PACs experienced similar or less hope and meaning during the COVID-19 pandemic compared with secular and Ultra-Orthodox Jewish Israelis and indicated that the current population of PAC student parents are a unique population. To the best of our knowledge there are no other studies comparing Jewish and PACs on measures of PTG nor are there studies on PAC parents and PTG

Limitations

The current analyses were clearly limited by the low effect sizes demonstrated, particularly in relation to the primary outcome of parenting. While this is partially indicative of a large sample size, the low effect size indicates that other variables need to be considered and that the contribution of parenting to PTG in particular may be just a slice of a much wider story. We attempted to look at parenting experiences as differing for both mothers and fathers and also for two distinct ethnic groups but further research is needed to understand what caused this difference. Within these four wide groups, there are a multitude of differentiating factors which were not addressed in the current study. Furthermore, while our study focused on a specific group of parents, further research is recommended to extend this comparison to groups directly affected by the pandemic; healthcare workers, those in economic distress and those in medical risk groups. Resilience and familial response to trauma is demonstrated

to change over time (Shmotkin et al., 2011) and the current study is part of a longitudinal study to investigate the long-term effects of COVID-19 on student parents amongst other demographic groups. Longitudinal studies will enable the current cross-sectional findings to be examined over the duration of the pandemic and their stability to be determined. It is believed that with more homogenous sampling and further characterization of the type of parents studied, the current study will provide a springboard to refining the effect of parenting on PTG and in turn larger effect sizes.

Additionally the current sample was comprised of Israeli university students. While over 60% of Israeli high school graduates attend university, the sample still excludes many other sectors of society and parents are under-represented in this sample. There were many more Jewish Israeli participants in the sample and while this means that the total scores for both ethnic groups combined greater represent the Jewish sample, this underrepresentation of the PAC population is indicative of the Israeli university system at large which, as outlined above, is indicative of the difficulties PACs face integrating into the Israeli system.

Implications and future directions

The current study demonstrated the different experiences of PTG during the COVID-19 pandemic amongst parent and nonparent students and amongst Jewish and PAC mothers and fathers. These significant findings highlight the need to consider different trajectories of PTG for different populations and open up multiple avenues for further studies in the field of PTG amongst parents and nonparents and Jewish and PAC populations, specifically the mechanisms related to the development of PTG. Further studies should aim to study the long-term trajectories of PTG development in these populations in order to promote post-traumatic growth in addition to the reduction of PTSD or stress symptoms. Additionally, the current study highlights important findings pertaining to the interaction between gender and ethnicity and the potential implications for parents' wellbeing and post-traumatic growth amongst the different societal sectors.

The current study has direct implications for working with families during the pandemic. While the pandemic has undoubtedly created hardships for parents which deserve validation and dedicated resources, the pandemic experience also provided opportunities for psychological growth, including amongst parents. The current study is in coherence with therapeutic formulations which highlight the importance of finding meaning and enhancing personal choice. As Victor Frankl quoted Nietzsche in *Man's Search for Meaning*, "Those who have a 'why' to live, can bear with almost any 'how'." (Frankl, 2014, p. 72) Despite the inherent challenges, parenthood can also provide the "why" and be a platform for developing a meaningful experience when challenged with oppressive conditions. Not all parents will experience such growth and meaning making following the COVID-19 pandemic or similar stressors. The current study highlighted the cultural differences within a single student population and the importance of considering societal factors and their effect on the meaning making process. Furthermore, connecting to values and using them as a motivator for psychological growth has been deemed a crucial part of the World Health Organization's (WHO) recommendations for dealing with stress brought on by the COVID-19 pandemic (World Health Organization, 2021). While parenthood during the COVID-19 pandemic presented unique stressors and difficulties, the current study should motivate professionals working with families to explore how parenthood also has a unique contribution to psychological growth and that harnessing this potential may provide enhanced resilience for weathering future crises.

DATA AVAILABILITY STATEMENT


The corresponding author can be contacted for further information regarding the data and access.

ORCID

Anna Harwood-Gross  <https://orcid.org/0000-0001-5930-8526>

Yoav S. Bergman  <https://orcid.org/0000-0002-7868-9464>

Ruth Pat-Horenczyk  <https://orcid.org/0000-0002-5589-8837>

Miriam Schiff  <https://orcid.org/0000-0002-0534-7383>
 Rami Benbenishty  <https://orcid.org/0000-0003-4041-9650>

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