

# Are Pediatric Critical Personnel Satisfied With Their Lives? Prediction of Satisfaction With Life From Burnout, Posttraumatic Stress, and Posttraumatic Growth, and Comparison With Noncritical Pediatric Staff

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**Objectives:** Staff in PICUs shows high burnout, posttraumatic stress disorder symptoms, and posttraumatic growth levels. However, their levels of satisfaction with life and how positive and negative posttrauma outcomes relate to each other and contribute to predict satisfaction with life remain unknown. Thus, we attempted to explore these aspects and to compare the findings with data from pediatric professionals working in noncritical units.

**Design:** This is an observational multicentric, cross-sectional study.

**Setting:** The PICU of nine hospitals in Spain, and other pediatric units in the same hospitals.

**Subjects:** Two hundred ninety-eight PICU workers (57 physicians, 177 nurses, and 64 nursing assistants) and 189 professionals working in noncritical pediatric units (53 physicians, 104 nurses, and 32 nursing assistants).

**Intervention:** Participants completed the Maslach Burnout Inventory, the Trauma Screening Questionnaire, the Posttraumatic Growth Inventory, and the Satisfaction With Life Scale.

**Measurements and Main Results:** Of PICU staff, 16.4% were very satisfied with their lives, 34.2% were satisfied, 34.6% showed average satisfaction with life, and 14.8% were below average. No differences were found between PICU and non-PICU workers. Women reported lower satisfaction with life than men, and physicians reported higher satisfaction with life than other professional groups. The correlation between posttraumatic stress disorder and posttraumatic growth was low, but significant and positive. According to the path analysis with latent variables, 20% of the variance satisfaction with life could be predicted from burnout,

posttraumatic stress disorder symptoms, and posttraumatic growth. Higher distress was inversely associated to satisfaction with life, whereas posttraumatic growth contributed to higher satisfaction with life.

**Conclusions:** Posttraumatic growth can moderate the negative effect of traumatic work-related experiences in satisfaction with life. PICU and non-PICU workers were equally satisfied with their lives. Positive and negative impact of work-related potentially traumatic events can coexist in the same person. Interventions aimed at reducing distress and fostering posttraumatic growth could impact in an improvement in pediatric health professionals' satisfaction with life. (*Pediatr Crit Care Med* 2019; XX:00–00)

**Key Words:** burnout; pediatric intensive care unit staff; pediatric staff; posttraumatic growth; posttraumatic stress; satisfaction with life

Working in intensive care is considered to be inherently stressful (1). The context is plagued by a wide variety of stressors, such as work overload and critical life-or-death situations. Thus, it should not come as a surprise that professionals working in PICUs show high prevalence of burnout and posttraumatic stress disorder (PTSD) symptoms (2–4).

It is well documented that high rates of distress involve diminished work effectiveness (5), decreased quality of care (6, 7), poor communication with the families (6, 8), and costs related to absenteeism. Nevertheless, the personal impact of burnout and PTSD for healthcare professionals has received scarce attention. In this line, it has been found that high burnout rates are predictive of low satisfaction with life (SWL) among nurses (9). SWL is defined as a global assessment of a person's quality of life which is dependent upon a comparison of one's circumstances with what the person expects to have or achieve (10). Although there is a large body of literature about healthcare providers' distress, little is known about healthcare providers' wellness (8). A longitudinal study found that SWL in young physicians was lower than that in the general population, which they explain as a consequence of their high rates of stress (11). In contrast, another longitudinal study (12) found high levels of SWL among this group. To our knowledge, SWL has not been explored in PICU staff.

Given the high rates of burnout and PTSD in PICU staff, a diminished SWL may be expected. However, a previous study, based on the same data than the present study, found that almost 70% of PICU workers reported posttraumatic growth (PTG) (13), defined as the perception of positive psychologic changes as the result of one's struggle with a potentially traumatic event (14, 15). Thus, it might be that the high demands and the potentially traumatic situations that some healthcare workers face do not only result in negative but also in positive outcomes (16, 17). The effect of PTG in professionals' SWL has not been previously explored, but, as it is a positive outcome,

we may expect that it will contribute to compensate the negative impact of distress.

Another important issue is the study of how positive and negative consequences of traumatic events relate to each other. Studies in different trauma-exposed samples have yielded inconsistent findings. Some authors have endorsed a positive and linear association between PTSD and PTG (18–20), others have found curvilinear associations, some authors finding that medium levels of distress were related to the highest PTG (21), while others showing that no or high PTG levels were related to lower PTSD symptoms, while medium levels of PTG were associated with high PTSD symptom severity (22). On the other hand, some authors have found a negative relationship (23), whereas a study found no relationship at all (23, 24). Studying the association between positive and negative outcomes is important to better understand how people are affected by critical or traumatic situations, but it has never been explored in PICU staff.

Given the gap of knowledge above described, the aims of this study were the following:

1. To study the levels of SWL in personnel working in the PICU and to compare their levels with the ones of professionals working in noncritical pediatric wards. Our hypothesis is that PICU workers will show lower SWL than professionals working in other pediatric units.
2. To explore the contribution of negative outcomes (burnout and PTSD) and positive outcomes (PTG) of work-related trauma in predicting SWL. We expect that higher burnout and PTSD rates will be associated with lower SWL, whereas higher PTG will be associated with higher SWL in professionals working in the PICU. We expect that this model will work equally for professionals working in the PICU, and for other hospital-based professionals working in other pediatric units.
3. To explore the relation between positive (PTG) and negative outcomes (burnout and PTSD) in professionals working in the PICU and in other pediatric units.
4. To explore in which degree SWL is associated with sociodemographic and work-related variables.

## MATERIALS AND METHODS

### Participants

The participants were 298 professionals working in nine different PICUs in Spain, as well as 189 professionals working in pediatrics, but not in PICU in the same nine hospitals. The average response rate was 64.02% for professionals working in the PICU and 47.06% for the non-PICU working staff. **Table 1** includes information about each of the nine PICUs where data were collected (number of admissions and average length of admission the year before the data collection, number of beds in the PICU, mortality rate, ratio nurse-to-patient, ratio nursing assistant-to-patient, and number of physicians, nurses, and nursing assistants working in each PICU). Table 1 also shows the discipline-specific response rates for each PICU.

**TABLE 1. Information About the PICUs Where Data for This Study Were Collected and Discipline-Specific Response Rates for Each PICU**

Hospital	No. of Admissions	Average Length of Admission (d)	No. of Beds	% Mortality <sup>a</sup>	Ratio Nurse-to-Patient	Ratio Assistant-to-Patient	No. of Physicians in the Unit	No. of Nurses in the Unit	No. of Nursing Assistants in the Unit	No. of Physicians Who Participated (% of the Total)	No. of Nurses Who Participated (% of the Total)	No. of Nursing Assistants Who Participated (% of the Total)
1	314	8.5	16	3.86	1:2	1:4	11	46	25	10 (90.9)	38 (65.2)	16 (64)
2	460	2.7	8	0.65	1:2	1:4	7	20	11	5 (71.4)	20 (100)	9 (81.8)
3	786	4.1	16	2.8	1:2	1:5	11	44	19	5 (45.6)	25 (56.8)	9 (47.4)
4	398	8.2	11	2.29	1:1	1:4	10	52	29	7 (70)	16 (30.8)	4 (13.8)
5	332	7.2	12	4.82	1:2	1:4	7	22	11	6 (85.7)	18 (81.8)	3 (27.3)
6	627	4.1	12	1.12	1:2	1:4	8	30	18	5 (62.5)	26 (86.7)	13 (72.2)
7	324	2.2	10	2.16	1:2	1:4	7	17	11	5 (71.4)	12 (70.6)	5 (45.5)
8	249	6.5	6	0.4	1:2	1:3	7	15	10	6 (85.7)	10 (66.7)	3 (30)
9	232	3.4	6	1.5	1:2	1:4	7	13	8	8 (87.5)	12 (92.3)	2 (25)

<sup>a</sup>Percentage of the children admitted to the PICU who died during admission the year before data collection.

### Instruments

- Demographic questionnaire: It includes gender, age, marital status, and number of children.
- Professional activity questionnaire: It asked about profession, years of experience, number of night shifts, patients deceased in the unit and conflicts with patients/families and colleagues the previous week, number of days since the last day off, number of days worked in the last month, and wish to be transferred to another unit.
- Maslach Burnout Inventory (25): This 22-item questionnaire assesses the frequency of occurrence of different feelings in relation to their job in the last week in a seven-point Likert scale. It contains three dimensions: emotional exhaustion, depersonalization, and personal achievement. Its average internal consistency as measured by the Cronbach alpha test is 0.88 for emotional exhaustion, 0.71 for depersonalization, and 0.78 for personal accomplishment (26). Higher scores in emotional exhaustion and depersonalization are indicative of higher burnout, whereas lower levels of personal achievement are indicative of higher burnout. Cutoff scores for emotional exhaustion are 15 and 24 (the score is low if it is below 15 and high if it is up to 24), for depersonalization 4 and 9, and for personal accomplishment 33 and 39 (the scores <33 are indicative of reduced personal accomplishment). The Spanish adaptation was used (27).
- Trauma Screening Questionnaire (28): It is a 10-item measure to assess PTSD symptoms with a yes/no response format. It enquired about the reexperiencing or arousal symptoms in the past week. The endorsement of six or more symptoms yields high levels of sensitivity and specificity (28, 29).
- PTG Inventory (PTGI)-Short Form (30). It contains 10

items with a six-point Likert response format. It was used in this study instead of the 21-item version (15) for the purpose of brevity. The scores may range from 0 to 50, with higher scores indicating higher PTG. It includes five domains: greater appreciation of life, improved relationships with others, greater personal strength, recognition of new possibilities in one's life course, and spiritual or religious growth. Both the English (30) and the Spanish (30, 31) versions have shown adequate internal consistency ( $\alpha = 0.83-0.90$ ). In order to make sure that the PTG reported was a consequence to the exposure of their work environment, instead of asking about responses "as a result of my crisis," we asked about responses "as a result of my work."

- SWL Scale (10): It contains 5 items, with a seven-point Likert scale response format and has shown a high internal consistency ( $\alpha = 0.87$ ) and a single factor solution (32). Scores between 30 and 35 are indicative of very high SWL, 25–29 high, 20–24 average, 15–19 slightly below average, 10–14 dissatisfied, and 5–9 extremely dissatisfied. We used the Spanish version (33).

### Procedure

This is a multicentric, cross-sectional study. The Institutional Review Board of the hospital which coordinated the study reviewed the project and waived the need for approval, as no patients were involved in the data collection. An individual from each of the nine hospitals which took part of the study was appointed for data collection. Participants were contacted by that individual in their workplace and were asked to fill out a set of questionnaires. Participation was anonymous and confidential. Data were collected between May and August 2015.

## Statistical Analyses

First, descriptive analyses were conducted to report the levels of SWL in PICU personnel, and a chi-square tests and analysis of variances (ANOVAs) were conducted to compare their levels with the ones of non-PICU pediatric staff. Second, ANOVA tests were conducted to explore the differences in SWL by demographic and work-related categorical variables. Third, we calculated Pearson correlations among burnout dimensions, PTSD symptoms, PTG, and SWL.

Then, we explored whether multilevel analyses should be conducted to explore the degree to which distress (burnout and PTSD symptoms) and PTG contributed to predict SWL. Multilevel analyses would enable us to explore the effect of grouping variables in the present study (hospital, working in PICU or in other unit, gender, and profession) while testing the predictive model of SWL. To study whether it made sense to conduct multilevel analyses, it was important to first ascertain the percentage of variance which was explained by belonging to a specific cluster. Thus, we calculated the intraclass correlation coefficients using null models (models without any independent variable) for the grouping variables hospital, working in PICU or in other unit, gender, and profession. Only if there was a significant degree of variance explained by any of the grouping variables (intraclass correlation coefficient of  $\geq 0.10$ ), it would make sense to conduct multilevel analyses (34). Otherwise, path analyses with latent variables (PALVs) using the whole study sample will be conducted to test the hypotheses about potential interrelationships among distress (burnout and PTSD symptoms) and PTG with SWL. In order to assess model fit for the PALV, absolute fit indexes (goodness of fit index [GFI] and standardized root mean square residual [SRMR]), relative fit indexes (incremental fit index [IFI]), and non-centrality fit indexes (comparative fit index [CFI] and root mean square error of approximation [RMSEA]) were used (35). GFI, CFI, and IFI values of 0.90 or greater indicate an acceptable fit, whereas a value of 0.95 or greater indicates a good fit (36). RMSEA and SRMR values between 0.05 and 0.08 represent an acceptable fit, whereas values lower than 0.05 indicate a good fit (37). An acceptable or good model fit does not imply causal relationships but proves that results are compatible with the causal model tested.

Missing data in the present study were substituted by central item score. This happened in less than 6% of subjects. Participants who omitted more than two items per questionnaire or five items when considering all questionnaires were eliminated from the study ( $n = 10$ ).

## RESULTS

### Demographic and Work-Related Information

Demographic and work-related information is summarized in **Table 2**. The proportion of respondents who witnessed a death in the past week was eight times higher in PICU personnel than in non-PICU personnel. Conflicts with colleagues were more common for PICU personnel; however, non-PICU workers reported more conflicts with patients or families. The percentage of professionals who would like to be transferred to other unit was

**TABLE 2. Demographic and Professional Characteristics of the Sample**

Characteristics	PICU	No-PICU
Demographics		
Gender (% women)	82.6	84.1
Marital status (%)		
Single	46.6	43.4
Married	46.6	47.6
Divorced	4.7	7.4
Widow	2	1.6
Having children (%)	50	56.6
Age, mean (sd)	40.20 (9.25)	44.12 (11.24)
Data concerning professional activity		
Profession (%)		
Physician	19.1	28
Nurse	59.4	55
Nursing assistant	21.5	16.9
Conflict with colleagues last week (%)	12.5	7
Conflict with patients last week (%)	4.1	10.8
Desire to be transferred to another unit (%)	26.1	17.7
Years of experience, mean (sd)	16.18 (8.38)	20.56 (11.62)
No. of night shifts in previous week, mean (sd)	1.60 (1.23)	1.25 (1.31)
No. of days since last day off, mean (sd)	3.12 (2.71)	3.84 (3.76)
No. of days worked last month, mean (sd)	18.52 (3.76)	19.27 (4.09)
No. of deaths last week, mean (sd)	0.56 (0.86)	0.07 (0.30)

significantly higher for PICU workers (26.1%) than for workers from other pediatric units (17.7%) ( $\chi^2 = 4.51$ ;  $p = 0.034$ ).

### Levels of SWL, PTSD Symptoms, and PTG

**Table 3** shows the percentage of PICU and non-PICU working staff scoring in the different levels of SWL, PTSD symptoms, and PTG, as well as the chi-square tests to account for differences between both samples. Of the sample of PICU staff, 16.4% showed very high SWL, 34.2% high SWL, 34.6% average SWL, 11.4% were slightly below average, 2.7% were dissatisfied, and 0.7% were extremely dissatisfied. As a chi-square test showed, these percentages were not significantly different in the non-PICU subsample ( $\chi^2 = 1.10$ ; degrees of freedom = 5;  $p = 0.954$ ).

As for burnout levels, 36.20% of PICU working staff showed scores over the cutoff for emotional exhaustion, 27.20% for

**TABLE 3. Levels of Satisfaction With Life, Emotional Exhaustion, Depersonalization, Personal Accomplishment, Posttraumatic Stress Disorder Symptoms, and Posttraumatic Growth in the PICU and Non-PICU Samples: Analyses Using the Categorized Scores in the Variables**

Variable	PICU (%)	No-PICU (%)	$\chi^2$	Degrees of Freedom	<i>p</i>
Satisfaction with life			1.10	5	0.954
Very high	16.4	15.9			
High	34.2	37			
Average	34.6	30.7			
Slightly below average	11.4	12.7			
Dissatisfied	2.7	3.2			
Extremely dissatisfied	.7	.5			
Emotional exhaustion			0.49	2	0.785
High	36.20	34.40			
Medium	37.60	40.70			
Low	26.20	24.90			
Depersonalization			0.10	2	0.953
High	27.20	27.50			
Medium	38.90	37.60			
Low	33.90	34.90			
Personal accomplishment			11.21	2	0.004
High	47.70	60.80			
Medium	32.20	19			
Low	20.10	20.10			
Posttraumatic stress disorder			0.19	1	0.661
High	20.10	18.50			
Not high	79.90	81.50			
Posttraumatic growth			0.86	1	0.354
Yes	29.9	33.9			
No	70.1	66.1			

depersonalization, and 20.10% for lack of personal accomplishment. Besides, 20.1% of PICU working staff reported six or more PTSD symptoms. As chi-square tests presented in Table 3 showed, there was no statistically significant difference between PICU and non-PICU staff in their percentages of burnout and PTSD. The only significant difference was for personal accomplishment (PA): the same percentage of individuals in both groups reported low PA, but a larger percentage of non-PICU workers reported high PA. With regard to the PTG levels, we calculated how many participants had experienced positive change to a “great” or “very great” degree (mean scores,  $\geq 4$ ) in at least one of the five domains assessed by the PTGI, and 70.1% of PICU staff indicated so. The percentage was not significantly different for non-PICU workers.

**Table 4** also includes the mean scores and the *t* tests to account for the mean differences between PICU and non-PICU working staff in SWL, burnout dimensions, PTSD, and PTG. None of the differences were significant. The mean score in SWL for the PICU sample was 24.49 (*SD* = 5.03) and for the non-PICU sample 24.59 (*SD* = 5.88).

#### **Influence of Demographic and Professional Variables on SWL**

**Table 5** shows the mean differences in SWL for the whole sample of the study according to demographic and work-related variables. Considering that, as shown in Tables 3 and 4, there were no differences in SWL between PICU and non-PICU working staff, these analyses were conducted using the whole

**TABLE 4. Levels of Satisfaction With Life, Emotional Exhaustion, Depersonalization, Personal Accomplishment, Posttraumatic Stress Disorder Symptoms, and Posttraumatic Growth in the PICU and Non-PICU Samples: Analyses Using the Continuous Scores in the Variables (Means)**

Variable	PICU, Mean (sd)	No-PICU, Mean (sd)	Mean Difference	95% CI for the Difference	F	p
Satisfaction with life	24.49 (5.03)	24.59 (5.08)	-0.10	-1.02 to 0.82	0.046	0.830
Emotional exhaustion	21.16 (9.20)	21.59 (9.37)	-0.43	-2.12 to 1.26	0.247	0.876
Depersonalization	6.28 (4.67)	6.30 (4.77)	-0.02	-0.88 to 0.84	0.002	0.964
Personal accomplishment	38.04 (6.28)	38.75 (7.55)	-0.71	-2.01 to 0.59	1.26	0.262
Posttraumatic stress disorder	3.10 (2.66)	2.81 (2.63)	0.29	-1.99 to 0.77	1.35	0.247
Posttraumatic growth	28.54 (9.10)	28.53 (9.91)	0.003	-1.72 to 1.72	0.000	0.998

Chi-square tests and analysis of variances to compare the samples of PICU and non-PICU working staff.

sample of the study. Women reported lower SWL than men ( $p = 0.024$ ). Also, there were significant differences by profession, so we conducted the Tukey post hoc test (Table 6) which showed that physicians reported higher SWL than nurses and nursing assistants. Professionals who would like to be transferred to another unit reported the lowest SWL. No significant differences in SWL emerged when professionals working in the nine different hospitals were compared ( $F = 1.47$ ;  $p = 0.166$ ).

#### Relation Among Burnout, PTSD Symptoms, PTG, and SWL

Pearson correlation coefficients among burnout, PTSD symptoms, PTG, and SWL were calculated using the whole sample of the study ( $n = 487$ ). Results are shown in **Supplementary Table 1** (Supplemental Digital Content 1, <http://links.lww.com/PCC/A858>). SWL was inversely correlated to emotional exhaustion ( $r = -0.295$ ;  $p < 0.001$ ), depersonalization ( $r = -0.145$ ;  $p = 0.001$ ), and PTSD symptoms ( $r = -0.192$ ;  $p = 0.001$ ). Its correlation with personal accomplishment and PTG was also significant, but positive ( $r = 0.247$ ;  $p < 0.001$ ). Emotional exhaustion was positively associated to depersonalization, and both were directly associated to PTSD symptoms ( $r = 0.402$  for emotional exhaustion and  $r = 0.178$  for depersonalization;  $p < 0.001$  for both) and inversely associated to personal accomplishment. PTSD symptoms and personal accomplishment were inversely correlated ( $r = -0.147$ ;  $p = 0.001$ ).

PTG was positively related to PTSD symptoms ( $r = 0.145$ ,  $p = 0.001$ ), whereas it was unrelated to emotional exhaustion and depersonalization. The association between PTSD symptoms and PTG could not be better explained by a curvilinear relation in the form of an inverted-*U* shape ( $p = 0.003$ ) than by a linear solution ( $p = 0.001$ ). Regarding PTG dimensions, all of them with the exception of new possibilities were related to SWL. Emotional exhaustion was directly and slightly related with appreciation for life. Personal accomplishment was positively correlated with all PTG dimensions, showing the strongest correlation with relation to others. Finally, the score in PTSD symptoms was positively correlated to new possibilities, spiritual growth, and appreciation for life.

#### Impact of PTSD Symptoms, Burnout, and PTG on SWL

Intraclass correlation coefficients calculated through null models for the grouping variables hospital, working or not in the PICU, profession, and gender, were first obtained to ascertain whether multiple group analyses should be conducted. Intraclass correlation coefficients were 0.006 for the grouping category hospital (nine clusters), 0.000 for working in the PICU or in another pediatric unit (two clusters), 0.029 for profession (three clusters: physicians, nurses, and nursing assistants), and 0.01 for gender (two clusters: men and women). Thus, the analyses showed that the percentages of variance explained by the grouping categories were in all cases too low to conduct multilevel analyses.

Consequently, a PALV using the whole sample of the study ( $n = 487$ ) was conducted to explore the relation between distress (burnout dimensions and PTSD) and PTG with SWL. **Figure 1** shows the standardized estimates (SEs) as well as the squared multiple correlations (percentage of the variance explained by the relations in the path model) for the model tested. All the fit statistics for the model were well inside the limits for the model to be accepted. The GFI was good (0.953), and the CFI (0.927), the IFI (0.927), the RMSEA (0.077), and the SRMR (0.068) were all inside of the standard limits of acceptance. Therefore, we may conclude that the model shown in Figure 1 is well estimated, and that the data are compatible with the hypothesis that distress and PTG contribute to predict SWL. As Figure 1 shows, distress (burnout and PTSD symptoms) along with PTG contributed to predict 20% of the total variance in SWL. The association of distress with SWL was inverse and significant ( $SE = -0.42$ ;  $p < 0.001$ ). Regarding the relation between PTG and SWL, it was also significant, but weaker and positive ( $SE = 0.20$ ;  $p < 0.001$ ).

#### DISCUSSION

To date, most of studies aimed at exploring the impact of health professionals' distress have focused on exploring how burnout and PTSD symptoms can impair their work effectiveness

**TABLE 5. Effect of Demographic and Profession-Related Variables on Satisfaction With Life**

Variable	Mean (SD)	Mean Difference	95% CI for the Difference	Analysis of Variance
Demographic variables				
Gender		1.38	0.18–2.57	$F = 5.13; p = 0.024$
Women	<b>24.29 (5.04)</b>			
Men	<b>25.67 (4.90)</b>			
Relationship status		−0.75	−1.65 to 0.151	$F = 2.67; p = 0.103$
With a couple	24.92 (4.82)			
Without	24.17 (5.21)			
Having children		−0.45	−1.35 to 0.451	$F = 0.960; p = 0.328$
Yes	24.74 (5.20)			
No	24.29 (4.86)			
Work-related variables				
Any death last week		0.81	−0.24 to 1.85	$F = 2.31; p = 0.129$
Yes	24.72 (4.91)			
No	23.92 (5.41)			
Conflict work colleagues		0.53	−0.95 to 2.01	$F = 0.493; p = 0.483$
Yes	24.10 (5.13)			
No	24.63 (5.03)			
Conflict patient/family		1.48	−0.334 to 3.30	$F = 2.57; p = 0.109$
Yes	23.16 (6.34)			
No	24.64 (4.96)			
Wish to change		1.56	0.48–2.63	$F = 8.11; p = 0.005$
Yes	<b>23.38 (5.36)</b>			
No	<b>24.93 (4.92)</b>			
Profession		See post hoc test <sup>a</sup>		$F = 6.55; p = 0.002$
Physician	<b>25.98 (4.60)</b>			
Nurse	<b>24.25 (4.93)</b>			
Nursing assistant	<b>23.67 (5.54)</b>			

<sup>a</sup>Honestly significant difference Tukey post hoc test for profession.

sbs ( $p \leq 0.05$ ) are marked in bold,  $n = 487$ . Comparisons were made by one-way analysis of variances.

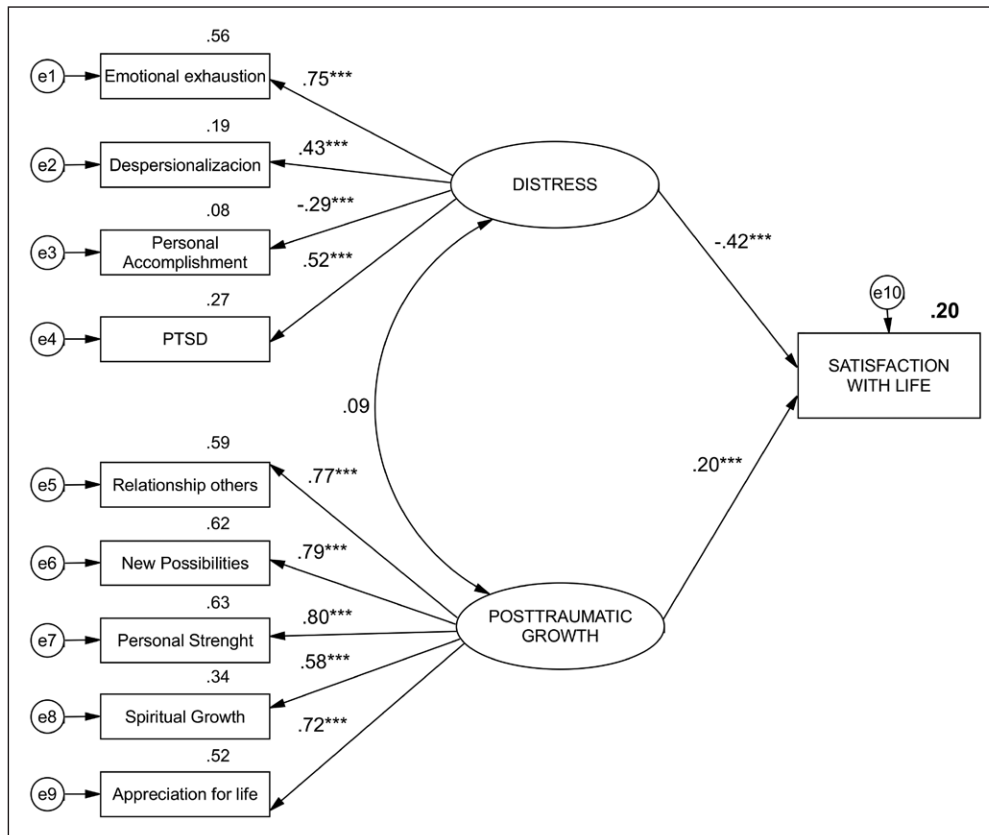
(5–7). However, this study, carried out on a sample of Spanish pediatric health professionals, suggests that burnout, PTSD symptoms, and PTG can impact professionals' SWL. The results of this study show that the majority of PICU workers are satisfied with their lives, as more than 50% reported high or very high SWL. Besides, mean levels in SWL in professionals in this study are similar to the ones found in the Spanish general population (33), which challenges the evidence found in studies that have reported lower SWL in healthcare providers than in the general population (11). On the other hand, results have shown that around 15% of professionals are dissatisfied with their lives, which evidences the importance of studying

which factors predispose to low life satisfaction. As the PALV have shown, data of the present study are compatible with the hypothesis that SWL can be predicted from distress (burnout and PTSD symptoms) and PTG. Specifically, a total of 20% of the variance in SWL can be explained by the model tested. The stronger predictor of low SWL was high distress; however, PTG is also a significant—but weaker—predictor of SWL, acting as a protective factor.

Contrary to our hypothesis, results showed that the SWL levels of PICU working staff and professionals working in other pediatric wards were equivalent. Additionally, contradicting previous studies (38), no differences have been found

**TABLE 6. Honestly Significant Difference Tukey Post Hoc Test to Account for Differences Between Professions**

Profession (I)	Profession (J)	Mean Difference (I - J)	p of the Difference	95% CI for the Difference
Physicians	Nurses	1.73	0.006	0.41–3.05
Physicians	Nursing assistants	2.32	0.003	0.68–3.95
Nurses	Nursing assistants	0.58	0.584	–0.80 to 1.97



**Figure 1.** Standardized estimates and squared multiple correlations for the path analysis with latent variables (PALVs),  $n = 487$ . \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ . e1, e2, e3, (...) e10 are the measurement errors for each observed variable included in the model.

in PTSD and burnout levels between professionals working in the PICU and non-PICU settings. Thus, even though some indicators in our study, such as the fact that the proportion of professionals in the PICU who witnessed a death in the past week was eight times higher, seem to confirm that the PICU is a more adverse context than other pediatric wards (3, 4); this does not seem to have any impact in terms of the main variables assessed in this study. Explanation of the absence of differences should be explored in future studies and may be in the habituation responses, coping strategies, and personality traits of personnel working in critical situations, which may have a buffering effect on the degree of distress experienced (17, 39, 40).

Despite the absence of differences in the main study variables between PICU and non-PICU staff, a relevant difference

emerged when these samples were compared; the percentage of professionals who would like to be transferred to a different unit is significantly higher for PICU staff (26.1%) than for non-PICU staff (17.7%). As no differences have been found in terms of SWL, PTSD symptoms, PTG, and burnout levels, the reason for this difference in withdrawal intention should be explored in future studies. Our hypothesis is that such difference could be explained by other work-related factors, such as the higher frequency of conflicts with colleagues in the PICU, the higher frequency of exposure to the death of a patient, and the higher number of night shifts on average (3). It remains to be explained in future studies why these factors do not lead to differences in life satisfaction, burnout, SWL, and PTG levels. Finally, as in our study, higher wish to be transferred to a different unit is associated to lower SWL, devel-

oping programs, and policies that may result in an improvement in their SWL could potentially reduce withdrawal intention in pediatric personnel.

As for gender-based comparisons, the fact that women showed lower SWL is consistent with a study conducted in physicians (41), but inconsistent with a study with general population (33). This gender-based difference, though significant, is small, as intraclass correlation coefficients have shown that the percentage of SWL explained by the gender is very low. Besides, consistently with the literature on general population that has found higher SWL levels in people with higher education levels (33), in the present study, physicians showed higher SWL than nurses and nursing assistants. This difference might be influenced by the higher social and economic rewards received by physicians.



Regarding the relation between positive (PTG) and negative outcomes (burnout and PTSD symptoms), burnout has been found to be unrelated to PTG; however, PTSD symptoms and PTG were weakly but significantly correlated. Consequently, this study supports the idea that positive and negative effects of traumatic events can be independent phenomena but can also coexist in the same individual (18–20). This positive association might be explained by the fact that for PTG to occur, the event has to be upsetting enough to cause considerable disruption to the person's assumptions about how the world operates (42, 43). Therefore, individuals who are more negatively impacted by traumatic experiences might have more opportunity for growth. In that sense, Helgeson et al (18) suggested that experiencing posttraumatic stress symptoms such as intrusive thoughts reflects a cognitive process aimed at processing the traumatic event, which can lead to PTG more than a marker of mental health. Given the positive association between PTSD symptoms and PTG found in this study and considering that PTSD contribute to decrease SWL while PTG contributes to increase it, experiencing PTG might contribute to compensate the negative impact of PTSD symptoms in SWL in individuals highly distressed.

Of course, the findings must be considered within the scope of some limitations. The main one is its cross-sectional nature, which does not allow to establish causal relations, even though data are compatible with the idea that distress and PTG contribute to predict SWL. Additionally, although efforts were made to get the highest possible number of workers involved, not all the workers in every unit participated in the study. Thus, there is potential for bias. Finally, even though the link between work and SWL is undoubted (9), SWL depends on many other factors, such as personality characteristics, health status, or the degree in which the individual's personal and social life satisfies that he/she wants and needs (44). Thus, although interventions in the workplace might be effective to mitigate the impact of work-related adverse experiences, they could have a limited impact in professionals' SWL. In spite of its limitations, the study has some strengths. First of all, it is multicentric and has included nine hospitals. Additionally, physicians, nurses, and nursing assistants have been included. Thus, the study includes a representative sample of the Spanish population of the PICU staff. Furthermore, having included a subsample of pediatric non-critical staff has allowed making comparisons.

## CONCLUSIONS

Given that burnout and PTSD symptoms contribute to lower SWL, although PTG contributes to higher SWL, interventions aimed at decreasing distress and recognizing the positive effect of traumatic events might favor professionals' SWL. According to previous literature, interventions aimed at fostering PTG and decreasing distress should be focused on modifying the coping strategies used to face difficult situations (2, 17, 45) and in training their resilience (46). The effect of such interventions should be evaluated in future research.

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