



# Disentangling the effects of intrapersonal and interpersonal emotional competence on parental burnout

Gao-Xian Lin<sup>1</sup> · Isabelle Roskam<sup>1</sup> · Moira Mikolajczak<sup>1</sup>

Accepted: 23 August 2021

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2021

## Abstract

Emotional competence (EC) has been documented as one of the most influential resource to protect parents from parental burnout (PB). However, the dimensions of EC have inconsistent effects across studies: while intrapersonal EC consistently had a protective effect on PB, interpersonal EC was paradoxically documented both as a risk factor and a protective factor. Relying on third-variable effect analyses on two independent datasets (842 Belgian parents and 377 Polish parents), this pre-registered study found that (1) intrapersonal EC drives the protective effect of interpersonal EC, and (2) after being adjusted for intrapersonal EC, interpersonal EC does not have significant effect on PB in the Polish sample and even becomes detrimental in the Belgian sample. These findings highlight the importance of examining the unique effect of each EC dimension while controlling for the others. Besides, it also implicates interventions aimed at improving EC to reduce PB should focus on intrapersonal EC.

**Keywords** Parent · Stress · Emotional intelligence · Suppressing effect · Suppressor · Confounding

Parental burnout (PB)—an exhaustion disorder in the parenting role (Roskam et al., 2018)—has received mounting attention both inside and outside the scientific community (see Mikolajczak et al., 2021; Roskam et al., 2021). This is not only due to its worrying prevalence (Roskam et al., 2021), but also to its very detrimental consequences including physical and mental health deterioration of the concerned parents and a sharp increases of negative parenting behaviors (Brianda et al., 2020; Mikolajczak et al., 2019; Szczygieł et al., 2020). The severe consequence of PB calls for more attention to external and internal factors that may protect parents from it.

Emotional competence (EC)—the extent to which individuals can identify, express, understand, regulate, and use their own (denoted as intrapersonal EC) and others' (denoted as interpersonal EC) emotions (Brasseur et al., 2013; Mayer & Salovey, 1997)—has been nominated as one particular good internal candidate to protect parents from PB (Mikolajczak et al., 2018). However, a closer look at previous findings reveals discrepancies. Whereas the global score of EC has been shown to have a potent protective effect on PB (Mikolajczak et al., 2018), its

dimensions showed inconsistent effects. More specifically, while intrapersonal EC consistently had a protective effect on PB, interpersonal EC was sometimes a risk factor (Bayot et al., 2020) and sometimes a protective factor (Lin et al., 2021) for PB.

Scrutinizing the conflicting studies, we find, first, interpersonal EC positively correlated with intrapersonal EC, and both of them negatively associated with PB (Bayot et al., 2020; Lin et al., 2021). Second, although interpersonal EC negatively associates with PB (Lin et al., 2021), this effect not only disappears but even reverses when intrapersonal EC is controlled for (Bayot et al., 2020). These findings suggest that intrapersonal EC may act as a confounder (i.e., a variable related to the other factors of interest that falsely obscures or accentuates the relationship between them) driving the *negative* association of interpersonal EC with parental burnout (see MacKinnon et al., 2000). To test this possibility, this pre-registered study will reanalyze datasets of the two conflicting studies (Bayot et al., 2020; Lin et al., 2021) and test the estimate of confounder (i.e., intrapersonal EC) bias as well as the adjusted effect of interpersonal EC on both datasets.

✉ Gao-Xian Lin  
gao-xian.lin@uclouvain.be

<sup>1</sup> Psychological Sciences Research Institute, Department of Psychology, Catholic University of Louvain, Place Cardinal Mercier, 10, 1348 Louvain-la-Neuve, Belgium

## Methods

### Participants and Procedure

Two datasets independently collected in Belgium (named “Belgian sample”) and Poland (named “Polish sample”) will

be analyzed. The Belgian sample comprised 842 parents ( $M_{\text{age}}$  of 38.72 years,  $SD_{\text{age}} = 7.21$  years) and the Polish sample 377 parents ( $M_{\text{age}}$  of 37.83 years,  $SD_{\text{age}} = 7.64$  years). Parents' demographic characteristics are detailed in Bayot et al. (2020; for Belgium sample) and Lin et al. (2021; for Polish sample).

## Measures

We measured PB with the Parental Burnout Assessment (PBA; Roskam et al., 2018). Its 23 items are rated on a 7-point frequency scale (from *never* [0] to *everyday* [6]) and summed to form a global score. The Cronbach's  $\alpha$  of the scale for Belgian sample was .97 whereas for the Polish sample was .96.

We assessed EC with the Profile of Emotional Competence (PEC; Brasseur et al., 2013), a questionnaire assessing both intrapersonal and interpersonal EC. Its 50 items are rated on a 5-point Likert scale (from *does not describe me at all* [1] to *describes me perfectly* [5]) and averaged to form a global score. The Cronbach's  $\alpha$ s of intrapersonal and interpersonal EC were .88 and .88 in Belgian sample and .88 and .90 respectively in Polish sample.

## Analysis Strategy

Strictly following the preregistered report ([https://osf.io/ady2t/?view\\_only=0d4e6adfe2b64799a66da8a4778b2632](https://osf.io/ady2t/?view_only=0d4e6adfe2b64799a66da8a4778b2632)), we examined our hypotheses with the third variable effect analysis (MacKinnon et al., 2000), as described in Fig. 1. In practice, this involves multiple regressions using PROCESS 3.5 on SPSS 25 (Model 4; Hayes, 2018). The PROCESS module estimates the confounder bias with the bootstrap sampling method (number of bootstrap samples = 5000).

## Results

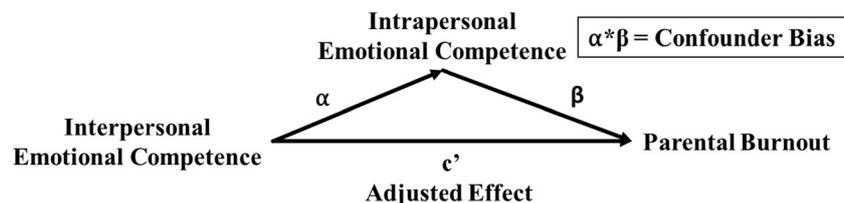
Regression analyses revealed that the estimate of confounder (i.e., intrapersonal EC) bias was significant in the direction of a beneficial effect (i.e., intrapersonal EC negatively predicted PB) in both Belgian (effect =  $-12.08$ , bootstrapped  $SE = 1.43$ , bootstrapped 95% CI [ $-14.93, -9.38$ ]) and Polish

samples (effect =  $-7.50$ , bootstrapped  $SE = 2.17$ , bootstrapped 95% CI [ $-12.12, -3.50$ ]). Second, the adjusted effect of interpersonal EC was in the direction of a deteriorative effect (i.e., interpersonal EC positively predicted PB) in Belgian sample (effect =  $6.48$ ,  $SE = 2.16$ , bootstrapped 95% CI [ $2.25, 10.71$ ]) but null in Polish sample (effect =  $-4.95$ ,  $SE = 2.96$ , 95% CI [ $-10.77, 0.88$ ]). The total effect of interpersonal EC was in beneficial direction in both datasets (see Model 3 in Table 1).

## Discussion

Because of its tremendous implication to the well-being of parents and even their children, efforts to explore protective factors and propose intervention programs for PB brook no delay (Gruber et al., 2020; Mikolajczak et al., 2021). Abundant literature has nominated EC as a significant protective factor vis-à-vis parental burnout. As a result, EC has been integrated as a core component of intervention programs for parental burnout (Bayot et al., *in press*; Brianda et al., 2020). Nevertheless, the current findings demonstrate that the protective effect of interpersonal EC vis-à-vis PB may be solely due to its overlap with intrapersonal EC. After being adjusted for intrapersonal EC, interpersonal EC does not significantly protect parents from PB in the Polish sample and even becomes detrimental in the Belgian sample. This detrimental effect found in the Belgian sample may not be spurious since the detrimental effect of interpersonal EC on health-related outcomes has also been documented in a previous Belgian nationally representative study (i.e., Mikolajczak et al., 2015). Our findings therefore constitute a timely call to put a brake on the improvement of interpersonal EC in interventions to treat PB, at least for Belgian parents.

To compare the discrepant results between Polish (Lin et al., 2021) and Belgian (Bayot et al., 2020) samples, we aligned the analysis strategy of the two independent datasets. Our research corroborated that the effect of interpersonal EC on PB differs between samples, which may reflect the differential balance between costs and benefits of interpersonal EC (Pekaar et al., 2018) on parental burnout across different populations. Indeed, although interpersonal EC could be



**Fig. 1** Analysis Strategy of the Present Research.  $\alpha$  represents the effect of interpersonal emotional competence on the intrapersonal emotional competence.  $\beta$  represents the effect of intrapersonal emotional competence on parental burnout while controlling interpersonal

emotional competence.  $c'$  is the adjusted predictive effect of interpersonal emotional competence on parental burnout. The multiplication of  $\alpha$  and  $\beta$  equal to confounder (intrapersonal emotional competence) bias

**Table 1** Regression coefficients for the third variable effect analysis in belgian sample (with result in polish sample revealed in parentheses brackets)

Model 1: Interpersonal emotional competence predicts Intrapersonal emotional competence.						
Variables	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI of <i>B</i>	
					<i>LL</i>	<i>UL</i>
$R^2 = .28^{***}$ (.40 <sup>***</sup> )						
Interpersonal Emotional Competence	0.60 (0.61)	0.03 (0.04)	18.00 (15.79)	.000 (.000)	0.53 (0.53)	0.66 (0.68)
Model 2: Both interpersonal and intrapersonal emotional competence predict parental burnout.						
Variables	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI of <i>B</i>	
					<i>LL</i>	<i>UL</i>
$R^2 = .13^{***}$ (.11 <sup>***</sup> )						
Interpersonal Emotional Competence	6.48 (-4.95)	2.16 (2.96)	3.01 (-1.67)	.003 (.096)	2.25 (-10.77)	10.71 (0.88)
Intrapersonal Emotional Competence	-20.27 (-12.36)	1.91 (3.09)	-10.62 (-4.00)	.000 (.000)	-24.01 (-18.43)	-16.52 (-6.29)
Model 3: Interpersonal emotional competence predicts parental burnout (i.e., the total effect of interpersonal emotional competence).						
Variables	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI of <i>B</i>	
					<i>LL</i>	<i>UL</i>
$R^2 = .01^{**}$ (.07 <sup>***</sup> )						
Interpersonal Emotional Competence	-5.60 (-12.45)	1.95 (2.34)	-2.87 (-5.31)	.004 (.000)	-9.43 (-17.05)	-1.77 (-7.84)

*CI*, confidence interval; *LL*, lower limit; *UL*, upper limit

beneficial in many situations (e.g., strengthening interpersonal relationships or parent-child relationships; Stern et al., 2015), it can backfire in some situations. Parents who are overly involved with others' emotions are at risk for burnout (e.g., Lee et al., 2011) because they may take others' distress home/on themselves (e.g., exposing to emotional distress on social media; Brownlie & Shaw, 2019; when caring their loved one who is undergoing a distressing life experience; Hua et al., 2021). It could be thus assumed that the benefit of the interpersonal EC for the Polish sample may counterbalance its cost, and the cost remains to outweigh its benefit in the Belgian sample. The detrimental effect thus only emerges in the Belgian sample.

In sum, the current pre-registered reanalysis offers a new perspective on the EC-PB association. Intrapersonal EC seems to be the crucial component of EC that protects parents. The beneficial effect of interpersonal EC is not only insignificant after intrapersonal EC adjusted, but it even puts some parents at risk. This message bears both research and clinical implications. Regarding the former, this study highlights the importance of examining the impact of each EC dimension while systematically controlling for the effect of the other. As regards the latter, the findings suggest that interventions aimed at improving EC to reduce parental burnout should primarily focus on enhancing intrapersonal EC and not interpersonal EC.

**Code Availability** Not applicable.

**Author's Contributions** G.-X.L. proposed the analysis strategies. G.X.L. performed the data analyses and interpretation. G.-X.L. and M.M. drafted the manuscript. I.R. provided revisions. All authors approved the final version of the manuscript for submission.

**Funding** M.M., I.R., and G.-X.L. were supported by a Coordinated Research Grant from the French Community of Belgium (ARC Grant n°19/24-100). This fund did not exert any influence or censorship of any kind on the present work.

**Data Availability** The analyses reported in this article were formally preregistered, and the datasets of study variables have also been made available. They could be seen on the permanent third-party archive, Open Science Framework: [https://osf.io/ady2t/?view\\_only=0d4e6adfe2b64799a66da8a4778b2632](https://osf.io/ady2t/?view_only=0d4e6adfe2b64799a66da8a4778b2632)

## Declarations

**Consent to Participate** Informed consent was obtained from all individual participants included in the study.

**Protections of Research Participants** The studies were carried out in accordance with the provisions of the World Medical Association Declaration of Helsinki.

**Consent to Publish** The datasets used in this study are all anonymized. Besides, there are only group analysis results and no case report involved in this study.

**Conflicts of Interest/Competing Interests** M.M. and I.R. founded the Training Institute for Parental Burnout (TIPB) which delivers training on PB to professionals. The TIPB did not participate in the funding of this study nor did it influence the process or the results in any manner.

## References

- Bayot, M., Roskam, I., Gallée, L., & Mikolajczak, M. (2020). When emotional intelligence : Interactions Between Intra- and Interpersonal Emotional Competencies in the Case of Parental Burnout. *Journal of Individual Differences*. Advance online publication. <https://doi.org/10.1027/1614-0001/a000324>.

- Bayot, M., Brianda, M. E., van der Straten, N., Mikolajczak, M., Shankland, R., & Roskam, I. (in press). Indfulness and compassion-based approach to parental burnout: A randomized controlled trial with validated group treatment. *Journal of Child and Family Studies*.
- Brasseur, S., Grégoire, J., Bourdu, R., & Mikolajczak, M. (2013). The profile of emotional competence (PEC): Development and validation of a self-reported measure that fits dimensions of emotional competence theory. *PLoS One*, *8*(5), e62635. <https://doi.org/10.1371/journal.pone.0062635>
- Brownlie, J., & Shaw, F. (2019). Empathy rituals: Small conversations about emotional distress on twitter. *Sociology*, *53*(1), 104–122. <https://doi.org/10.1177/0038038518767075>
- Gruber, J., Prinstein, M. J., Clark, L. A., Rottenberg, J., Abramowitz, J. S., Albano, A. M., Aldao, A., Borelli, J. L., Chung, T., Davila, J., Forbes, E. E., Gee, D. G., Hall, G. C. N., Hallion, L. S., Hinshaw, S. P., Hofmann, S. G., Hollon, S. D., Joormann, J., Kazdin, A. E., et al. (2020). Mental health and clinical psychological science in the time of COVID-19: Challenges, opportunities, and a call to action. *The American Psychologist*, *76*, 409–426. <https://doi.org/10.1037/amp0000707>
- Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (second). Guilford Press.
- Hua, A. Y., Wells, J. L., Brown, C. L., & Levenson, R. W. (2021). Emotional and cognitive empathy in caregivers of people with neurodegenerative disease: Relationships with caregiver mental health. *Clinical Psychological Science*, *9*(3), 449–466. <https://doi.org/10.1177/2167702620974368>
- Lee, J., Lim, N., Yang, E., & Lee, S. M. (2011). Antecedents and consequences of three dimensions of burnout in psychotherapists: A meta-analysis. *Professional Psychology: Research and Practice*, *42*(3), 252–258. <https://doi.org/10.1037/a0023319>
- Lin, G.-X., Szczygieł, D., Hansotte, L., Roskam, I., & Mikolajczak, M. (2021). Aiming to be perfect parents increase the risk of parental burnout, but emotional competence mitigates it. *Current Psychology*. Advance online publication. <https://doi.org/10.1007/s12144-021-01509-w>.
- MacKinnon, D. P., Krull, J. L., & Lockwood, C. M. (2000). Equivalence of the mediation, confounding and suppression effect. *Prevention Science*, *1*(4), 173–181. <https://doi.org/10.1023/A:1026595011371>
- Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. J. Sluyter (Eds.), *Emotional development and emotional intelligence: Educational implications* (pp. 3–31). Basic Books.
- Mikolajczak, M., Avalosse, H., Vancorenland, S., Verniest, R., Callens, M., van Broeck, N., Fantini-Hauwel, C., & Mierop, A. (2015). A nationally representative study of emotional competence and health. *Emotion*, *15*(5), 653–667. <https://doi.org/10.1037/emo0000034>
- Mikolajczak, M., Raes, M.-E., Avalosse, H., & Roskam, I. (2018). Exhausted parents: Sociodemographic, child-related, parent-related, parenting and family-functioning correlates of parental burnout. *Journal of Child and Family Studies*, *27*(2), 602–614.
- Mikolajczak, M., Gross, J. J., & Roskam, I. (2019). Parental burnout: What is it and why does it matter? *Clinical Psychological Science*, *7*(6), 1319–1329.
- Mikolajczak, M., Gross, J. J., & Roskam, I. (2021). Beyond job burnout: Parental burnout! *Trends in Cognitive Sciences*, *25*, 333–336. <https://doi.org/10.1016/j.tics.2021.01.012>
- Roskam, I., Brianda, M.-E., & Mikolajczak, M. (2018). A step forward in the conceptualization and measurement of parental burnout: The parental burnout assessment (PBA). *Frontiers in Psychology*, *9*. <https://doi.org/10.3389/fpsyg.2018.00758>
- Roskam, I., Aguiar, J., Akgun, E., Arikani, G., Artavia, M., Avalosse, H., Aunola, K., Bader, M., Bahati, C., Barham, E. J., Besson, E., Beyers, W., Boujut, E., Brianda, M. E., Brytek-Matera, A., Carbonneau, N., César, F., Chen, B.-B., Dorard, G., et al. (2021). Parental burnout around the globe: A 42-country study. *Affective Science*, *2*(1), 58–79. <https://doi.org/10.1007/s42761-020-00028-4>
- Stern, J. A., Borelli, J. L., & Smiley, P. A. (2015). Assessing parental empathy: A role for empathy in child attachment. *Attachment & Human Development*, *17*(1), 1–22. <https://doi.org/10.1080/14616734.2014.969749>
- Szczygieł, D., Sekulowicz, M., Kwiatkowski, P., Roskam, I., & Mikolajczak, M. (2020). Validation of the polish version of the parental burnout assessment (PBA). *New Directions in Child and Adolescent Development*, *174*, 1–22. <https://doi.org/10.1002/cad.20385>

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.