



Correspondence

Psychoneuroendocrinology research is needed on parental burnout: A response to Walther, Walther, and Heald's comment on Hair cortisol concentration as a biomarker of parental burnout


In our paper “Hair cortisol concentration as a biomarker of parental burnout”, we investigated the association between hair cortisol concentration (HCC) and parental burnout, a syndrome of chronic stress related to parenting. We showed that HCC of parents suffering from parental burnout was, on average, 213 % higher than that observed in control parents, and that HCC and parental burnout were significantly related, even after controlling for job burnout.

Following the publication, Walther, Walther, and Heald (2020) expressed misgivings about our findings, arguing that: (i) Parental burnout is not yet a “justifiable concept” since the burnout concept itself is highly controversial; (ii) confounding factors related to having a newborn were not sufficiently considered; (iii) the positive association between parental burnout and HCC contrasts with the absence of association found in a previous study on parental burnout treatment, and with the absence of HCC association with job burnout. We thank Walther and colleagues for their interest in our work. In order to pursue a constructive dialogue on this topic, we will address each misgiving below.

(i) Parental burnout is a scientifically grounded construct, distinct from job burnout and depression

Parental burnout is arguably a relatively new construct, but recent research suggests that it is both theoretically grounded (Mikolajczak and Roskam, 2018) and empirically distinct from close constructs such as job burnout and depression (Kawamoto et al., 2018; Mikolajczak et al., 2020; Roskam et al., 2017; Van Bakel et al., 2018). Longitudinal studies confirmed that parental burnout has unique, consequential, and detrimental consequences on children, that cannot be explained by job burnout or depression (Mikolajczak et al., 2020, 2019). Moreover, a study on parental burnout treatment showed a large effect on parental burnout symptoms but no effect on job burnout (Brianda et al., 2020a). Thus, evidence to date seems to exclude both the hypothesis that parental burnout is merely depression and the view of burnout as a context-free syndrome, supporting instead parental burnout as a context-related condition worthy of consideration.

(ii) Parental burnout is not only a matter of parents of newborns

Although parents of newborns can burn out, parental burnout does not only concern parents of newborns. Actually, previous studies have shown that the children's age has only a trivial effect on parental burnout (Mikolajczak and Roskam, 2018). This is also evidenced by the fact that parents who self-enrolled in the above-mentioned parental burnout treatment study had children of all ages: Infants, young or prepubescent children, adolescents, and even young adults. Accordingly, the control group of non-burned-out parents employed in the study on which Walther and colleagues commented included parents of children of all ages as well. The huge gap of HCC between the two samples of parents with children of all ages suggests that HCC is not mainly related to children's age. Nevertheless, we agree with the colleagues that if future studies investigate HCC and parental burnout in

parents of newborns, they should pay attention to relevant confounding variables such as sleep deprivation, or time passed since birth.

(iii) Parental burnout and HCC are related in samples including both burned-out and control parents

Parental burnout and HCC were significantly and positively related in the study on which Walther and colleagues commented (Brianda et al., 2020b: data are publicly available at <https://osf.io/hxm4q/>), while no correlation was observed in a previous treatment study (Brianda et al., 2020a) mentioned by the same authors. A possible explanation of this “surprising contrast” may lie in the fact that the sample of the treatment study included parents all suffering from parental burnout, which corresponds to a non-homogeneous distribution of parental burnout scores and a subsequent lack of variance. Moreover, as suggested by Rohleder (2018), different burnout stages may correspond to different cortisol secretion, following a curvilinear relation. Indeed, such curvilinear relation was observed in our sample (even if it was not statistically significant). Parents at early parental burnout stages may have increased HCC, while HCC may collapse in parents with most severe parental burnout levels, thus explaining the flat correlation between parental burnout and HCC among burned-out samples. Finally, the absence of correlation between HCC and job burnout could be consistent with the curvilinear hypothesis suggested by Penz et al. (2018), or simply be due to the fact that our sample, because of a lack of variance on job burnout, is just inappropriate to investigate the impact of job burnout on HCC.

As Walther and colleagues themselves pointed out in a previous study (Rothe et al., 2020), there is a paucity of studies focusing on burnout and cortisol measures, calling for further investigations to draw clear conclusions. Our past work and the current letter point precisely in this direction. We therefore fully agree with our colleagues that this exciting topic deserves further research in psychoneuroendocrinology.

References

- Brianda, M.E., Roskam, I., Gross, J.J., Franssen, A., Kapala, F., Gérard, F., Mikolajczak, M., 2020a. Treating parental burnout: impact of two treatment modalities on burnout symptoms, emotions, hair cortisol, and parental neglect and violence. *Psychother. Psychosom.* <https://doi.org/10.1159/000506354>.
- Brianda, M.E., Roskam, I., Mikolajczak, M., 2020b. Hair cortisol concentration as a biomarker of parental burnout. *Psychoneuroendocrinology*, 104681. <https://doi.org/10.1016/j.psyneuen.2020.104681>.
- Kawamoto, T., Furutani, K., Alimardani, M., 2018. Preliminary validation of Japanese version of the parental burnout inventory and its relationship with perfectionism. *Front. Psychol.* 9, 970. <https://doi.org/10.3389/fpsyg.2018.00970>.
- Mikolajczak, M., Roskam, I., 2018. A theoretical and clinical framework for parental burnout: the balance between risks and resources (BR2). *Front. Psychol.* 9. <https://doi.org/10.3389/fpsyg.2018.00886>.
- Mikolajczak, M., Gross, J.J., Roskam, I., 2019. Parental burnout: what is it, and why does it matter? *Clin. Psychol. Sci.*, 216770261985843. <https://doi.org/10.1177/2167702619858430>.
- Mikolajczak, M., Gross, J.J., Stinglhamber, F., Norberg, A.L., Roskam, I., 2020. Is parental burnout distinct from job burnout and depressive symptomatology? *Clin. Psychol.*

- Sci., 216770262091744. <https://doi.org/10.1177/2167702620917447>.
- Penz, M., Stalder, T., Miller, R., Ludwig, V.M., Kanthak, M.K., Kirschbaum, C., 2018. Hair cortisol as a biological marker for burnout symptomatology. *Psychoneuroendocrinology* 87, 218–221. <https://doi.org/10.1016/j.psyneuen.2017.07.485>.
- Rohleder, N., 2018. Burnout, hair cortisol, and timing: hyper- or hypocortisolism? *Psychoneuroendocrinology* 87, 215–217. <https://doi.org/10.1016/j.psyneuen.2017.10.008>.
- Roskam, I., Raes, M.-E., Mikolajczak, M., 2017. Exhausted parents: development and preliminary validation of the parental burnout inventory. *Front. Psychol.* 8. <https://doi.org/10.3389/fpsyg.2017.00163>.
- Rothe, N., Steffen, J., Penz, M., Kirschbaum, C., Walther, A., 2020. Examination of peripheral basal and reactive cortisol levels in major depressive disorder and the burnout syndrome: a systematic review. *Neurosci. Biobehav. Rev.* <https://doi.org/10.1016/j.neubiorev.2020.02.024>.
- Van Bakel, H.J.A., Van Engen, M.L., Peters, P., 2018. Validity of the parental burnout inventory among Dutch employees. *Front. Psychol.* 9, 697. <https://doi.org/10.3389/fpsyg.2018.00697>.
- Walther, A., Walther, T., Heald, A., 2020. Letter to the editor regarding the article published in PNEC the 20th April 2020: Hair cortisol concentrations as a biomarker of parental burnout. *Psychoneuroendocrinology*, 104788. <https://doi.org/10.1016/j.psyneuen.2020.104788>.

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