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Introduction

35 Parental burnout is a syndrome related to parenting that affects 2-11% of parents,
36 depending on the study and the population (Roskam et al., 2017; Sánchez-Rodríguez et al.,
37 2019). It was first described in the 1980s (e.g., Procaccini & Kiefaber, 1983), but has only
38 recently been clearly defined as having three (Roskam et al., 2017) or four (Roskam et al.,
39 2018) dimensions. In the present study, we adopted the three-dimensional conception of
40 parental burnout (Roskam et al., 2017). *Emotional exhaustion* refers to intense fatigue, both
41 physical and psychological, and a drop in energy that impairs parents' ability to carry out
42 everyday actions. *Emotional distancing* from children corresponds to a reduction in emotional
43 interactions (e.g., hugs, games), whilst maintaining instrumental interactions (e.g., meal
44 management, hygiene, school learning). *Lack of parental accomplishment* refers to parents'
45 sense of efficiency and/or fulfillment in their role as parents.

46 Although these three dimensions coexist, they can also be expressed independently.
47 Indeed, according to Mikolajczak and Roskam (2017), parents do not need to simultaneously
48 have high levels of emotional exhaustion and emotional distancing, and low levels of parental
49 accomplishment to be identified as being in or at high risk of burnout. In support of this idea,
50 studies have found weak correlations between lack of parental accomplishment and the other
51 two dimensions (Kawamoto et al., 2018; Le Vigouroux & Scola, 2018), and even
52 independence between emotional exhaustion and lack of parental accomplishment (Blanchard
53 et al., 2021). Similarly a study of Japanese parents found that the more emotionally exhausted
54 parents were, the higher their levels of emotional distancing, but these two dimensions were
55 not associated with lack of parental accomplishment (Kawamoto et al., 2018). Hansotte and
56 colleagues (2021) identified two profiles of parents: an *ineffective* profile characterized by a
57 high level of lack of parental accomplishment and a low level of emotional exhaustion, and an
58 *exhausted* profile illustrated by a high level of exhaustion and a low level of lack of parental

59 accomplishment. This suggests that for a similar overall level of parental burnout, levels of
60 individual dimensions may vary. These differences in the expression of parental burnout
61 could be accounted for by particular risk and/or protective factors.

62 A number of studies (e.g., Kawamoto et al., 2018; Le Vigouroux et al., 2017; Le
63 Vigouroux & Scola, 2018; Lebert-Charron et al., 2018; Lindström et al., 2011; Mikolajczak et
64 al., 2017; Sorkkila & Aunola, 2020) have examined risk and/or protective factors of parental
65 burnout. These studies have highlighted the importance of dispositional factors (e.g.,
66 personality, perfectionism), and also noted the more modest influence of sociodemographic
67 factors in the balance between risks and resources (Mikolajczak & Roskam, 2018). Among
68 the sociodemographic factors, several studies have found that the age of both the parent and
69 the children influences parental burnout more than other sociodemographic variables. The
70 older the parent and/or children, the lower the risk of parental burnout (Le Vigouroux &
71 Scola, 2018; Mikolajczak et al., 2017; Stănculescu et al., 2020; Szczygieł et al., 2020). In
72 addition, Stanculescu et al. (2020) and Le Vigouroux and Scola (2018) found that children's
73 age had a stronger influence than parent's age on parental burnout and its dimensions.

74 The association between children's age and parental burnout may be due in part to an
75 age-related reduction in children's needs and demands on their parents (e.g., Le Vigouroux &
76 Scola, 2018). Put another way, the fact that young children are more dependent (under 5 years
77 old), less regulated and require more care may make their parents more vulnerable to parental
78 stress (Ostberga et al., 2007). The association between parents' age and parental burnout can
79 be explained by the fact that with advancing age, individuals experience less and less negative
80 affect and more and more positive affect, such as serenity (e.g., Carstensen et al., 2011; Le
81 Vigouroux et al., 2020). This improvement in affective experience can mainly be explained
82 by better emotion regulation (e.g., Charles, 2010; Urry & Gross, 2010).

83 Although many studies have focused on the overall parental burnout score, it is important
84 to note that the influence of age on parental burnout seems to vary across the three dimensions
85 (e.g., Le Vigouroux & Scola, 2018; Stănculescu et al., 2020). For example, the older the
86 children (more than about 5-6 years), the less emotionally exhausted their parents are (Le
87 Vigouroux & Scola, 2018; Stănculescu et al., 2020; Szczygieł et al., 2020), but the greater
88 their lack of parental accomplishment (Le Vigouroux & Scola, 2018). It should be noted that
89 children's age appears to be only weakly related to emotional distancing (Le Vigouroux &
90 Scola, 2018). In addition, the older the parents, the less they report emotional exhaustion (Le
91 Vigouroux & Scola, 2018; Stănculescu et al., 2020; Szczygieł et al., 2020) and the more they
92 report a lack of parental accomplishment (Le Vigouroux & Scola, 2018). In other words,
93 young age can be both a risk factor for emotional exhaustion and a protective factor for lack
94 of parental accomplishment.

95 The objective of the present study was to highlight interindividual differences in the
96 expression of parental burnout by identifying profiles based on levels of the three dimensions,
97 and more particularly by examining the influence of parent's age and children's mean age.
98 Parents do not need to have high scores on all three dimensions to be identified as being in
99 parental burnout, and we would therefore expect parents in or at risk of parental burnout to
100 differ on their expression of these dimensions. First, based on the evidence set out below,
101 namely the profiles of parental burnout identified by Hansotte et al. (2021) and the
102 independence between emotional exhaustion and lack of parental accomplishment
103 demonstrated by Blanchard et al. (2021), we expected to find different profiles of parental
104 burnout, determined mainly by the levels of emotional exhaustion and lack of parental
105 accomplishment. Second, we hypothesized that interindividual differences in levels of
106 parental burnout dimensions are correlated with parent's age and, more especially, with
107 children's mean age.

108

Method

109 **Participants**

110 There were two inclusion criteria: parent aged over 18 years, and all children aged under
111 18 years, with at least one living at home. The sample consisted of 2160 French-speaking
112 parents (including 278 fathers), aged 20-59 years ($M = 38.29$ years, $SD = 7.41$ years).

113 Participants had between 1 and 7 children ($M = 2.16$ children), aged 0-17 years ($M = 3.48$
114 years, $SD = 2.51$ years), with 1.63 children living at home on average ($SD = .85$). Regarding
115 marital status, most of the parents in our sample were in a couple (81.90%).

116 **Measure**

117 Parents provided sociodemographic information about their sex, age, the number of
118 children they had, their family type (i.e., single or couple), the number of children living at
119 home, and the age and sex of their children.

120 Parental burnout was probed with the Parental Burnout Inventory (PBI; Roskam et al.,
121 2017). The PBI contains 22 items: eight assessing emotional exhaustion (e.g., “When I think
122 about my parental role, I feel like I’m at the end of my rope”); eight emotional distancing
123 (e.g., “I can no longer show my children how much I love them”), and six parental
124 accomplishment and efficacy (e.g., “I accomplish many worthwhile things as a parent”
125 (reversed)). All items are rated on the same 7-point scale: 0 (*Never*), 1 (*A few times a year or*
126 *less*), 2 (*Once a month or less*), 3 (*A few times a month*), 4 (*Once a week*), 5 (*A few times a*
127 *week*), and 6 (*Every day*). Total and factor scores are obtained by summing the appropriate
128 item scores, with higher scores indicating greater burnout (parental accomplishment items are
129 therefore reverse-scored). In our sample, the internal consistency indices for the three parental
130 burnout dimensions were satisfactory (emotional exhaustion: $\alpha = .93$; emotional distancing: α
131 $= .82$; and lack of parental accomplishment: $\alpha = .87$).

132 **Procedure**

133 Participants responded to an online questionnaire posted by the investigators on various
134 social media platforms (e.g., Facebook), as well as on their personal social media accounts.
135 Informed consent was obtained from each participant prior to participation. Following
136 completion of the questionnaires, a contact person was made available to participants via a
137 psychologist involved in conducting the study.

138 **Statistics**

139 First, we calculated the mean age (and standard deviation) of each parent's children.
140 Next, we conducted mean comparisons (with Mann-Whitney test) of parent's sex and marital
141 status and calculated these variables' effect sizes (rank biserial correlation) for parental
142 burnout and its dimensions.

143 Second, in order to identify profiles of parental burnout, we performed cluster analyses
144 using the mclust R package (Scrucca et al., 2016) on raw and standardized data. The choice of
145 cluster number was based on the Bayesian information criterion (BIC). We then ran an
146 analysis of variance to relate the profiles to children's mean age. Finally, we calculated
147 parents' relative levels of the three parental burnout dimensions to explore the idea of
148 individual differences in these relative levels and their correlations with children's mean age.

149 Third, we ran a series of analyses to study the relationships between the dimensions of
150 parental burnout and the age of parents and children. Spearman correlation analyses on the
151 whole sample were used to highlight links between parent's and children's mean ages,
152 parental burnout, and each of the three dimensions. We then carried out an EBICglasso
153 network estimation on standardized data, which simultaneously considered all the
154 relationships between our studied variables. Building a network model allowed us to generate
155 more parsimonious results than with simple correlations. To quantify the importance of each

156 node in the network, we calculated three centrality measures (betweenness, closeness, and
157 strength) per variable. Higher influence values would indicate greater centrality and therefore
158 greater importance in the network. These analyses were performed using JASP software.
159 Using the bnlearn R package (Scutari, 2010), we computed a directed acyclic graph (DAG), in
160 order to estimate a directed model of the relationship between children's mean age and
161 parental burnout dimensions. Finally, to estimate the nonlinear influence of parent's age and
162 children's mean age (and the interaction between the two), we calculated generalized additive
163 models (GAMs; Wood, 2016) with the tensor function.

164 **Results**

165 **Prevalence of parental burnout and demographic analysis**

166 According to Mikolajczak and Roskam (2017)'s classification, 1092 participants (47.75%
167 of our sample) were not in parental burnout (score equal to or below 27), 520 parents
168 (22.73%) had a low risk of parental burnout (score between 28 and 40), 351 parents (15.43%)
169 had a moderate risk of parental burnout (score between 41 and 54), 195 parents (8.53%) had a
170 high risk of parental burnout (score between 55 and 67), and 125 parents (5.47%) were in
171 parental burnout (score above 67).

172 Results of the descriptive analyses are set out in Table 1. These highlighted several
173 differences in demographic variables. Regarding parent's sex, fathers were slightly older on
174 average than mothers, and their children were on average very slightly older than the mothers'
175 children. Sex did not significantly explain any difference in parental burnout, but mothers had
176 a slightly higher level of parental burnout (in particular emotional exhaustion) than fathers.
177 Concerning marital status, single parents were slightly older than parents in couples, and their
178 children were slightly older on average. They also had slightly fewer children with slightly

179 smaller age gaps between siblings. In addition, parents in couples experience very slightly
180 more emotional exhaustion than single parents.

181 **Insert here Table 1**

182 As expected, analysis of the correlations between sociodemographic variables and
183 parental burnout and its dimensions revealed several weak associations between demographic
184 variables and parental burnout. However, as expected, children's mean age was more closely
185 related than other sociodemographic variables to dimensions of parental burnout (Table 2). It
186 should be noted that the total burnout score was independent of children's mean age, but was
187 negatively and weakly correlated with emotional exhaustion, and positively correlated with
188 lack of parental accomplishment. Number of children, parent's age, and standard deviation of
189 children's age did not seem to be associated (or only very weakly so) with parental burnout
190 and its dimensions, even though parent's age was very strongly correlated with children's
191 mean age ($r = .70, p < .001$).

192 **Insert Table 2 about here**

193 **Cluster analysis**

194 Based on the BIC, we created a five-cluster model (see Fig. 1). The first cluster contained
195 parents who were not in parental burnout (7.69% of our sample). The second cluster (29.39%
196 of our sample) contained parents who were at low risk of parental burnout, with slightly
197 higher emotional exhaustion, emotional distancing, and lack of parental accomplishment
198 scores than parents in the previous cluster. The third cluster (6.90% of our sample) contained
199 parents who could be defined as inefficient, with a relatively high lack of parental
200 accomplishment score, a moderate emotional distancing score, and a relatively low emotional
201 exhaustion score (i.e., like that of the second cluster). The fourth and largest cluster (25.04%
202 of the sample) contained parents who could be identified as emotionally exhausted, with

203 moderate emotional distancing and lack of parental accomplishment scores, and quite high
204 emotional exhaustion scores. Finally, the fifth cluster (10.97% of our sample, so slightly less
205 than the parents identified as being at a high risk of burnout in the previous section) contained
206 parents in parental burnout, with high scores on all three parental burnout dimensions.

207 **Insert Figure 1 about here**

208 Following the identification of these clusters, we calculated the children's mean age for
209 each cluster (Fig. 4). Results showed that children's mean age varied between 3 and 4 years,
210 with relatively large standard deviations in each cluster. Exhausted parents had slightly
211 younger children than inefficient parents.

212 **Insert Figure 2 about here**

213 **Relative levels**

214 The cluster analysis depended on the absolute levels of emotional exhaustion, emotional
215 distancing and lack of parental accomplishment, but we also examined the relative levels for
216 each individual, independently of the overall level of parental burnout, and looked for
217 correlations between these relative levels and children's mean age. Results revealed that
218 children's mean age was moderately correlated with the relative level of emotional exhaustion
219 ($r = -.31, p < .001$) and weakly correlated with the relative levels of emotional distancing
220 ($r = .18, p < .001$) and lack of parental accomplishment ($r = .19, p < .001$).

221 **Correlations between parental burnout dimensions and children's mean age**

222 Results showed that the three dimensions of parental burnout were positively and
223 moderately correlated with each other (Table 2). The one exception was for emotional
224 exhaustion and lack of parental accomplishment, which were only weakly correlated,
225 especially in the network analysis (Fig. 3). This may mean that parents may be either
226 exhausted and distant or distant and inefficient. Children's mean age was correlated with all

227 three parental burnout dimensions. The higher the children's mean age, the less emotional
228 exhaustion reported by their parents, and the greater the parents' emotional distancing and
229 feeling of being inefficient. It should be noted that these relationships, albeit significant,
230 remained weak.

231 **Insert Figure 3 & Table 3 about here**

232 Network analysis revealed strong centrality of emotional distancing relative to emotional
233 exhaustion and lack of parental accomplishment (Table 3). The centrality of emotional
234 distancing was also found in the DAG (Fig. 4). Edges present in Figure 2 were retained, as
235 they were significant. Structurally, emotional exhaustion emerged at the top of the DAG.
236 Emotional exhaustion and children's mean age directly influenced emotional distancing,
237 which then directly influenced lack of parental accomplishment.

238 **Insert Figure 4 about here**

239 **Nonlinear relationship**

240 To be more precise and to test the nonlinear effect of age, we estimated GAMs to explain
241 parental burnout and its three dimensions as a function of parent's age, children's mean age
242 and standard deviation, and the interaction between parent's age and children's mean age. The
243 parameters of each model are set out in Table 4. Like the correlations indicated above, the
244 GAMs showed that a) the variable that best explained the different dimensions of parental
245 burnout was children's mean age, b) children's mean age explained some of the variance in
246 the three dimensions, but not the overall level of parental burnout, and c) the interaction
247 between parent's age and children's mean age explained more variance in each dimension.

248 **Insert Table 4 & Figure 2 about here**

249 To more accurately identify the interaction between parent's age and children's mean
250 age, we produced graphical representations of GAMs explaining emotional exhaustion,

251 emotional distancing, and lack of parental accomplishment (Fig. 2). Results showed that a)
252 young parents of young children (parents aged 20-35 years with children under 5 years) were
253 at greater risk of emotional exhaustion than other parents, b) and younger parents with older
254 children or teenagers (parents aged 25-40 years and with children aged 7-17 years) were more
255 at risk of emotional distancing. Regarding lack of parental accomplishment, older parents
256 (over 45 years) with children (mean age 5 years) or teenagers (mean age over 14 years) were
257 more at risk than younger parents or parents with infants or children aged around 10 years.

258 **Discussion**

259 The present study, carried out among a large sample of French-speaking parents, had two
260 main objectives: The first was to highlight interindividual differences in the expression of
261 parental burnout by studying relative levels of each of its three dimensions (i.e., emotional
262 exhaustion, emotional distancing, and lack of parental accomplishment), and identifying
263 different profiles. The second was to investigate the influence of children's mean age on
264 differences in parental burnout. To our knowledge, few studies have investigated relative
265 levels of these dimensions, and the one study to have identified parental burnout profiles
266 (Hansotte et al., 2021) did not take an interest to look for age-related differences.

267 Our results highlighted the centrality of emotional distancing in the structure of parental
268 burnout. This is consistent with Blanchard et al. (2021), who also highlighted the major role
269 of emotional distancing in the network of parental burnout dimensions. However, in contrast
270 to this study, our results showed that it is emotional exhaustion and not emotional distancing
271 that plays the entry role in parental burnout. One possible interpretation is that emotional
272 exhaustion places parents at risk of parental burnout and leads to emotional distance. This in
273 turn leads to lack of parental accomplishment, which places parents in actual parental burnout
274 (see also: Hansotte et al., 2021). This interpretation of our results is consistent with the
275 literature on occupational burnout, but needs to be confirmed by a longitudinal study.

276 **Profiles**

277 The current study identified five profiles of parents, as did Hansotte et al. (2021), based
278 on scores on the three parental burnout dimensions. The percentage of parents who were in
279 parental burnout (fifth cluster; i.e., 10.97%) is strongly consistent with Roskam et al. (2017)
280 and Sánchez-Rodríguez et al. (2019), as well as with Hansotte et al. (2021)'s emotionally
281 exhausted and distant and burned out profiles, taken together. By contrast, the proportions of
282 inefficient parents (third cluster, characterized by a moderate lack of parental
283 accomplishment, average emotional distancing, and low emotional exhaustion) and exhausted
284 parents (fourth cluster, characterized by moderate emotional exhaustion, and average
285 emotional distancing and lack of parental accomplishment) were higher in our study than in
286 Hansotte et al. (2021) (i.e., 16.9% vs. 9%, and 25.4% vs. 20.06%). Finally, we found two
287 profiles (i.e., *not in parental burnout* and *low risk of parental burnout*) that seemed to
288 represent parents who were not in burnout, whereas Hansotte et al (2021) identified only one
289 profile. In addition, parents with the exhausted profile seemed to have younger children than
290 either burned out or inefficient parents.

291 **Age-related differences**

292 Children's mean age did not explain the overall level of parental burnout, but was the
293 main sociodemographic variable explaining the variance of the different dimensions of
294 parental burnout. More specifically, children's mean age explained about 3% of the variance
295 in each dimension of parental burnout, and contrary to what was expected, parents' age
296 explained very little variance. Given that parental burnout is broadly explained by parental
297 dispositional variables, this is an interesting percentage for a single demographic variable. It is
298 possible that the developmental demands of parenting play a more important role than the
299 emotional regulation skills developed by parents. The results of correlations and GAMs
300 showed that the younger the children (especially under 5 years), the more likely parents were

301 to experience emotional exhaustion. This risk was even higher if the parent was also young
302 (under 35 years). This result is consistent with the literature (Le Vigouroux & Scola, 2018;
303 Stănculescu et al., 2020; Szczygieł et al., 2020). Conversely, the older the children (especially
304 those over 7 years), the more likely parents were to become emotionally distanced. The
305 increase of this emotional distance can be explained by the socio-emotional development of
306 children. Indeed, during infancy parents play a fundamental role in the emotional regulation
307 (Kopp, 1982) inducing a strong emotional proximity between them and their children. It is
308 possible that the development of children's self-regulation capacities and identity induce a
309 more or less pronounced reduction in the emotional distance between parents and children. In
310 addition, parents who were most at risk of lack of parental accomplishment were those over
311 45 years of age who had children aged around 5 years or over 14 years. It is possible that
312 these ages mark important transitions in the relationship between parents and children. As
313 parents adapt their behaviors to developmental transitions (identity building, empowerment),
314 some parents may experience these changes as challenging their parenting role and the
315 accomplishment they derive from it.

316 **Implications**

317 These results are particularly interesting, because they support the idea that professionals
318 should adapt their interventions according to the children's mean age and the profile of
319 parental burnout. Given that our results show that it is young parents with young children who
320 are most at risk of emotional exhaustion, it would be interesting to be able to carry out
321 prevention campaigns among this demographic. Furthermore, our results show that there is a
322 risk of parental burnout if the emotional exhaustion felt by the parent lasts over time and leads
323 to emotional distancing from the children. If the onset of parental burnout does indeed begin
324 with a state of emotional exhaustion, it is important to be able to develop interventions that
325 can deal with this dimension. Wanting to do too much can result in parents using up all their

326 resources in a vain attempt to achieve their unattainable goals. It is therefore important to
327 work on parents' representations and ways of increasing their resources, and to engage in
328 prevention, in order to avoid these at-risk parents going into full-blown parental burnout. This
329 is an important social issue, as parental burnout is a syndrome that can have very harmful
330 consequences for parents, their couple, and their children (e.g., Mikolajczak et al., 2018). It is
331 therefore important to intervene as soon as the first signs of emotional exhaustion appear.

332 **Limitations and perspectives**

333 This study had two main limitations that lead us to interpret the results with caution. The
334 first limitation was its cross-sectional design. As indicated above, our results and interpretations
335 need to be confirmed by a longitudinal study, which would allow us to confirm the order in
336 which the different dimensions of parental burnout emerge, as well as the changes they undergo
337 and their interactions (and possible feedback loops) over time. The second limitation was our
338 failure to consider certain sociodemographic variables (e.g., family's socioeconomic status,
339 parent's education level) and parental dispositions (e.g., personality traits, emotional
340 competence, attachment).

341 **Conclusion**

342 Our results, based on cross-sectional data, showed that systematically adopting a global
343 approach to parental burnout may prevent the identification of specific relationships among
344 dimensions, and even contrasting levels. Concerning the structure and emergence of parental
345 burnout, emotional exhaustion appeared to trigger the onset of parental burnout, with
346 emotional distancing playing a central role in the transition from exhausted parent to burned-
347 out parent. Having younger children was found to be a risk factor for emotional exhaustion,
348 while having older children was a risk factor for emotional distancing and thence lack of
349 parental accomplishment. Further research is needed to confirm and further clarify these
350 temporal relations between parental burnout dimensions.

351

Declaration of Conflicting Interests

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The author(s) declared no potential conflicts of interest with respect to the research,

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authorship, and/or publication of this article.

354

Data Availability Statement

355

Authors agree to make data and materials supporting the results or analyses presented

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here available upon reasonable request.

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