10.24193/ed21.2026.33.06

‘’Mirror of the Mind’’ – Exploring Mentalization Across Parents of Typically and Atypically Developing Children

Timea Pap, Ibolya Kotta, Kinga Kalcza-Janosi

Educatia 21 Journal 33 (2026)
ISSN online: 2247-8671
Educatia 21 Journal, (33) 2026, Art. 06
doi: 10.24193/ed21.2026.33.06
Research article

''Mirror of the Mind'' – Exploring Mentalization Across Parents of Typically and Atypically Developing Children

Timea Pap [a*], **Ibolya Kotta** [a], **Kinga Kalcza-Janosi** [a]

[a] *Applied Psychology Department, Faculty of Psychology and Educational Sciences, Babeş-Bolyai University, Cluj-Napoca, Romania*

*Corresponding author: *timea.pap1@stud.ubbcluj.ro*

Abstract

The present study investigated parental mentalization and examined its main psychological predictors in parents of typically and atypically developing children. Using a cross-sectional, correlational design, we focused on identifying individual difference variables that account for variability in parental mentalization. A total of 182 parents participated in the study and completed a battery of self-report measures, including the Self-Regulation Questionnaire (SRQ), the Perceived Competence Scale (PCS), and the Parental Reflective Functioning Questionnaire (PRFQ), which was used as an index of parental mentalization. In addition, parents were asked to describe their child, and their use of mental descriptors (e.g., references to thoughts, feelings, and intentions) was coded as an observable indicator of mentalizing about the child. Group comparisons showed that parents of typically developing children used significantly more mental descriptors when characterizing their child than did parents of atypically developing children, suggesting lower levels of spontaneous mentalization in the latter group. Regression analyses further indicated that perceived competence and the degree of external control in self-regulation emerged as significant predictors of parental mentalization across both groups. Specifically, higher perceived competence and lower reliance on external control were associated with higher levels of parental mentalization. These findings highlight the role of self-regulatory processes and perceived competence in shaping how parents think about and make sense of their children's internal states, with potential implications for interventions targeting parental reflective functioning in both typical and atypical developmental contexts.

Keywords:
atypical development, parental mentalization, perceived competence, self-regulation, typically developing children

1. Introduction

According to the existing literature, mentalization represents the capacity to recognize the bidirectional relationship (Schwarzer et al., 2021; Sprecher et al., 2023) between the internal and external components of behavior (Locati et al., 2025; Miller et al., 2022). It can also be conceptualized as the ability to interpret one's own and others actions as the externalized patterns of mental states (Pitzen et al., 2025).

Parental mentalization is being described as a reflective process that allows the parent to interpret the contextual experiences from their child's personal approach (Aldrich et al., 2021; Gagné et al., 2023) and react properly to the child's needs as a result of the process (Álvarez et al., 2022). Research findings revealed that parental mentalization is a key predictor of the attachment between the parent and the child (Barlow et al., 2021; Dollberg, 2022; Larkin et al., 2021). Additionally, parental mentalization has been considered to play a crucial role in the development of children's executive functions (Aldrich et al., 2021). Furthermore, recent findings acknowledge the role of parental mentalization in the development of children's socio-emotional competencies (Ghanbari et al., 2023).

2. Theoretical foundation

2.1. Parental mentalization and the Self-Determination Theory

The conceptual framework of the Self-Determination Theory (SDT) has been developed by Ryan & Deci (2020) and addresses the question of motivation as an inner drive underlying behavior. A hypothesized connection has been outlined between the motivational drive described in SDT (Ryan & Deci, 2019) and the predisposition of parents to mentalize (Casale et al., 2023), both considered as inner dynamics that shape the narrative of behavioral manifestations (Ryan et al., 2019). Three central components have been defined as the essence of Self-Determination Theory, namely, the basic psychological needs for autonomy, competence and relatedness (Ryan & Deci, 2019). Autonomy refers to the need for self-coordination and self-reliant decision making (Goodman et al., 2021). Relatedness can be described as the need for stable interpersonal

relationships characterized by warmth, trust, mutual respect and commitment (Smorti et al., 2022). Competence indicates the need for self-efficacy (Hashemi & Einy, 2021), the perception and awareness that one has the potential to reach desired goals, relying on their own abilities (Smorti et al., 2022). Synthesizing the core elements of Self-Determination Theory (Ryan et al., 2019), it has been suggested that the fulfillment of basic needs proposed by (Ryan & Deci, 2020) could lead to an inner consistency providing the motivational drive for parents to mentalize (Casale et al., 2023).

As a result of analyzing the associations presented above, recent findings (Gagné et al., 2021; Goodman et al., 2021; Smorti et al., 2022) highlighted the relevance of the need for autonomy and competence in the context of parental mentalization. In this respect, the tendency to explore and understand the child's mental states has been considered to be the manifestation of the parent's inner balance based on the sense of competence and autonomy (Hashemi & Einy, 2021; Gagné et al., 2023).

2.2. Parenting children with special needs: difficulties of mentalization

It was proposed that parents of children with special needs would be more vulnerable to experience a decreased level of perceived autonomy and competence (Ballespí et al., 2021; Antwi, 2023), therefore they may face difficulties when interpreting their children's internal states (Gur et al., 2023).

Recent studies (Desimpelaere et al., 2023; Antwi, 2023) indicate that parenting a child with special needs is highly associated with significant challenges faced by parents, regarding the fulfillment of the child's needs (Young et al., 2020), the provision of necessary health care services (Shattnawi et al., 2021), coping with behavioral and/or emotional manifestations of the disability, as well as the probability of financial worries as a result of the wide spectrum of treatments and interventions needed (Larkin et al., 2020). Constantly occurring challenges faced by parents may lead to a perception of incompetence (Young et al., 2020) and low parental self-esteem (Larkin et al., 2021; Antwi, 2023).

Farkas et al. (2018) intended to explore parental experiences in the sample of children with disabilities, compared to parents of neurotypical children. Parents of children with disabilities described significantly more difficulties and a subjective perception of lacking control, while these experiences have not been reported by parents of typically developing children. Difficulties presented by parents point to the conclusion that challenging experiences may be associated with a decreased level of perceived autonomy (Goodman et al., 2021).

Lee et al. (2022) have also broadened the existing knowledge about the satisfaction of basic psychological needs (Ryan & Deci, 2019) in parents of children with disabilities. In their exploratory study, it has been found that the most common parental experiences are helplessness, the feeling of incompetence and an inner ambiguity due to the unpredictable manner of challenges that makes parents feel out of control. Moreover, the study conducted by Chen et al. (2023) was analyzing the frequency of psychological problems in parents of children with special needs. The study was carried out with the participation of 4935 parents. It has been found that parents of children with disabilities had a significantly higher tendency for psychological problems to occur, compared to parents of typically developing children.

In summary, it has already been clarified that parents of children with special needs are being exposed to a wide range of factors increasing the possibility of experiencing low parental self-esteem (Ballespí et al., 2021) and the lack of autonomy (Farkas et al., 2018). In the context of the Self-Determination Theory, it has also been suggested that these experiences may influence parents' representations of their children's inner worlds (Chen et al., 2023; Gur et al., 2023; Larkin et al., 2021), these representations being predominated by their concerns associated with the children's special needs (Larkin et al., 2020; Smorti et al., 2022; Desimpelaere et al., 2023). However, there is a research gap regarding the investigation of the relationship between basic psychological needs and the ability of mentalization in the case of parents of children with special needs.

3. Research methodology

3.1. Aims of the Present Study

The current study aims to close the aforementioned research gap by: (a) addressing the differences in mentalization between the group of parents of typically and atypically developing children and (b) investigating the predictive role of parental autonomy and competence on the ability of parents' to mentalize in the population of typically and atypically developing children. Two research questions were addressed:

Q1 – Is there a significant difference between parents of typically developing children and parents of

atypically developing children regarding their ability to mentalize? Based on the results presented by Farkas et al. (2018) and Ansari et al. (2020), we hypothesized that parents of children with special needs will reach a lower level of mentalization compared to parents of typically developing children, indicated by the reduced number of mental descriptors used when characterizing their children. We also expected that the self-rated level of parental reflective functioning will be lower in the group of parents of children with special needs in comparison to parents of typically developing children.

Q2 – Do basic psychological needs (i.e. perceived autonomy and competence) predict self-reported parental mentalization? Based on the result presented by Larkin et al. (2020) and JongSik et al. (2023), we hypothesized that perceived autonomy and competence will predict the self-reported level of parental mentalization across both groups.

3.2. Participants

A total number of 182 parents participated in our study. Two groups have been formulated based on demographic characteristics: parents of typically developing children (n=93) and parents of atypically developing children (n=89). Table 1 presents demographic data of participating parents and their children.

Table 1

Demographic characteristics of parents and children

	Total (N=182)	Parents of typically developing children (n=93)	Parents of atypically developing children (n=89)
Parent's age (years)	41.13 ± 8.40	38.45 ± 7.89	43.93 ± 8.03
Child's age (years)	12.06 ± 7.88	9.85 ± 6.42	14.37 ± 8.62
Sex of parent			
Male	10 (5.5%)	7 (7.5%)	3 (3.4%)
Female	172 (94.5%)	86 (92.5%)	86 (96.6%)
Sex of child			
Male	104 (57.1%)	44 (47.3%)	60 (67.4%)
Female	78 (42.9%)	49 (52.7%)	29 (32.6%)
Marital status of the parent			
Single	5 (2.7%)	-	5 (5.6%)
In a relationship	9 (4.9%)	3 (3.2%)	6 (6.7%)
Married/Living with a partner	152 (83.5%)	87 (93.5%)	65 (73.0%)
Divorced	14 (7.7%)	2 (2.2%)	12 (13.5%)
Widow	2 (1.1%)	1 (1.1%)	1 (1.1%)
Educational level of the parent			
Primary school	10 (5.5%)	5 (5.4%)	5 (5.6%)
Vocational secondary school	27 (14.8%)	10 (10.8%)	17 (19.1%)
Academical secondary school	60 (33.0%)	23 (24.7%)	37 (41.6%)
Post-secondary education	85 (46.7%)	55 (59.1%)	30 (33.7%)
Socio-economic status of the family			
Low	13 (7.1%)	5 (5.4%)	8 (9.0%)
Medium	157 (86.3%)	80 (86.0%)	77 (86.5%)
High	12 (6.6%)	8 (8.6%)	4 (4.5%)

Note. Mean ± SD are used to present continuous variables. Categorical variables are presented by frequencies and percentages.

3.3. Measures

3.3.1. Treatment Self-Regulation Questionnaire

We developed an adaptation of the Treatment Self-Regulation Questionnaire (TSRQ) originally used by Ryan & Connel (1989) in order to address the type of motivation underlying caregiving behavior. The adapted version consists of 9 domain-specific items translated into Hungarian and assesses the degree to which a parent's caregiving behavior is being determined by self-regulated motivators. The items are rated on a 7-point Likert scale and the questions are divided into two subscales: autonomous the controlled form of self-regulation. Recent studies presented TSRQ as a valid and reliable instrument for the investigation of regulatory styles, its Cronbach's alpha coefficient being 0.82 in the research conducted by Ishii et al. (2022).

3.3.2. Perceived Competence Scale

Perceived Competence Scale (PCS) is a 4-item questionnaire introduced by Williams & Dec (1996) in

order to assess one of the fundamental constructs presented in the Self-Determination Theory. Regarding the internal consistency of the questionnaire, recent studies show an adequate tendency as reported by Yoon & Choi (2019) where the Cronbach's alpha coefficient was 0.96. In the current study, a Hungarian adaptation of the PCS has been developed with the aim of assessing the perceived competence of parents. Four domain-specific items have been formulated, based on the original version of PCS. A Likert scale was used to rate all of the four items ranging from 1 (''not at all true) to 7 (''very true'').

3.3.3. Parental Reflective Functioning Questionnaire

Parental Reflective Functioning Questionnaire (PRFQ) is an 18-item instrument developed by Luyten et al. (2017) with the aim of assessing parents' ability to discover and understand their child's mental states. It consists of three subscales: (a) Pre-Mentalizing Modes of Mental States (PMM), which examines difficulties faced by parents when interpreting inner states underlying their child's behavior, (b) Certainty about Mental States (CMS), which measures the parent's perceived certainty regarding their interpretations of the child's thoughts, feelings and intentions, (c) Interest and Curiosity in Mental States (IC), assessing the parent's willingness to understand the child's inner states. Luyten et al. (2017) reported an optimal internal consistency, the Cronbach's alpha coefficient being 0.70 for PMM, 0.82 for CMS and 0.75 for IC.

3.3.4. Representational measure of parental mentalization

The representational measure of parental mentalization, developed by Meins et al. (2001), is an interview-based approach used for the investigation of a parent's capacity to represent his/her child in the context of internal states, including thoughts, emotions, intents and desires. The following instruction is given to the participants: ''Please describe your child!'', highlighting that there are no correct or incorrect answers. According to the coding procedure presented by Meins & Fernyhough (2015), four categories can be formulated for the examination of the responses: (a) mental descriptors, (b) behavioral descriptors, (c) physical descriptors, (d) general characteristics. Using the representational approach in the population of parents of children with disabilities, a fifth category of symptomatology has also been formulated, as an indicator of descriptors referring to the child's special needs.

The scoring procedure includes the calculation of frequencies of responses coded into each of the categories. By dividing the number of mental state descriptors with the total number of descriptors, a proportional score is formulated referring to mental characteristics. A higher proportional score outlines a higher level of mentalizing capacity. Recent studies presented this measure as a reliable way of examining parental mentalization, as also highlighted in the study of Ansari et al. (2020), where the Cohen's kappa indicating inter-rater reliability was k = .82.

3.4. Procedure

Hungarian-speaking parents of typically and atypically developing children were contacted via social media platforms, schools and special education centers to participate in our study. Parents who agreed to voluntary and anonymously participate, completed our questionnaires.

3.5. Design and Data Analyses

A cross-sectional correlational design was used for assessing the predictive value of perceived autonomy and competence on parents' ability to mentalize. Preliminary analyses were conducted to examine the normality of the data and the internal consistency of scales and subscales used for further analyses. As presented in Table 2, the skewness and kurtosis values are between -2 and +2, indicating an acceptable distribution (Orcan, 2020) for all of the variables.

Table 2

Normality of data

	M ± SD	Skewness		Kurtosis	
		Statistic	SE	Statistic	SE
Parent's age	41.13 ± 8.40	.31	.18	.01	.35
Child's age	12.06 ± 7.88	1.23	.18	1.80	.35
Mental descriptors	2.41 ± 1.89	.92	.18	.89	.35
SRQ_CONTROL	23.04 ± 6.92	-.37	.18	-.48	.35
PCS	23.15 ± 3.74	-.81	.18	.85	.35
PRFQ_CMS	4.66 ± 1.16	-.15	.18	-.52	.35
PRFQ_IC	5.92 ± .89	-1.05	.18	1.18	.35

Note. The following scales and subscales are included: Controlled Regulation subscale of Self-Regulation Questionnaire (SRQ_CONTROL), Perceived Competence Scale (PCS) and two subscales of Parental Reflective Functioning Questionnaire: Certainty about Mental States (PRFQ_CMS) and Interest and Curiosity about Mental States (PRFQ_IC).

Cronbach's alpha coefficients of scales and subscales are presented in Table 3.

Table 3
Internal consistency of scales and subscales

	Number of items	Cronbach's alpha
PRFQ_PMM	6	.65
PRFQ_CMS	6	.75
PRFQ_IC	6	.68
SRQ_AUTONOMOUS	4	.53
SRQ_CONTROLLED	5	.71
PCS	4	.74

Note. Scales and subscales included: Pre-Mentalizing Mode (PRFQ_PMM), Certainty about Mental States (PRFQ_CMS), Interest and Curiosity about Mental States (PRFQ_IC), Autonomous Regulation (SRQ_AUTONOMOUS), Controlled Regulation (SRQ_CONTROLLED) and Perceived Competence Scale (PCS).

One subscale of Parental Reflective Functioning Questionnaire, the Pre-Mentalizing Modes of Mental States (PMM) had an internal consistency lower than 0.70, therefore we decided not to use this subscale for further analysis. The subscale of Interest and Curiosity in Mental States had an internal consistency of 0.68 corresponding with the study of Kungl et al. (2024) where Cronbach's alpha was 0.65, explained by the differences in translation. Based on the aforementioned study, we decided to use the subscale interpreting results cautiously. The Autonomous Regulation subscale of Self-Regulation Questionnaire had an α coefficient of 0.53, therefore being excluded from further analysis.

4. Results

4.1. Differences in mentalization between the groups of parents

Independent samples t-test was used to examine differences in mentalization between the group of parents of typically developing children and the group of parents of atypically developing children. An A priori power analysis of independent samples t-test has been conducted in G*Power 3.1.9.7 (Faul et al., 2007). Using medium effect size (d = 0.5), a significance criterion of 0.05 and a power of 0.90, the minimum sample size needed was 172.

Table 4 shows differences between groups based on three dependent variables: interest and curiosity in mental states (IC), certainty about mental states (CMS) and the number of mental descriptors used by parents to characterize their children.

Table 4
Differences in mentalization between the two groups of parents

	Parents of typically developing children		Parents of atypically developing children		$t_{(180)}$	p	Cohen's d
	M	SD	M	SD			
CMS	4.64	1.09	4.67	1.23	.20	.84	.02
IC	5.88	.91	5.97	.87	.66	.50	.10
Mental descriptors	3.05	1.99	1.75	1.53	-4.92	.00	.73

Levene's Test indicted equal variances across the groups regarding CMS (F = 2.99, p = 0.08), IC (F = 0.06, p = 0.79) and mental descriptors (F = 3.11, p = 0.07). A significant difference has been found in the number of mental descriptors, the group of parents of atypically developing children (M = 1.75, SD = 1.53) using significantly less mental descriptors [$t_{(180)}$ = 4.92, p<0.001, d = 0.73], than the group of parents of typically developing children (M = 3.05, SD = 1.99). No differences have been found in curiosity or certainty of parents about mental states.

4.2. Predictors of self-reported parental mentalization

Predictors of self-reported parental mentalization (i.e. CMS and IC) have been examined using hierarchical multiple regression analyses (see Table 5).

Regarding Certainty about Mental States (CMS), linearity of independent variables was tested using scatterplots which indicated linear trends. Standardized residuals were ranging between -2.84 and 2.57 and the Durbin-Watson statistic of 1.75 revealed the absence of autocorrelation in residuals. The first regression model has been found to be significant [$F_{(4,177)}$ = 3.73, p = 0.006), R^2 = 0.07]. Parent's age (β = -0.31, p = 0.01), child's age (β = 0.39, p = 0.002) and female sex of the child (β = 0.14, p = 0.04) were identified as significant predictors of CMS. The second model was also significant [$F_{(6,175)}$ = 11.51, p < 0.001), R^2 = 0.28, ΔR^2 = 0.20], predicting 20% of the variance in CMS, after controlling for

demographic variables. Perceived competence (β = 0.50, p < 0.001) was a significant predictor of CMS. Concerning Interest and Curiosity in Mental States (IC), the linearity of independent variables was also confirmed by scatterplots, standardized residuals were ranging between -3.09 and 2.08 and the Durbin-Watson statistics of 1.93 revealed no autocorrelation in residuals. The first model was significant [$F_{(4,177)}$ = 2.85, p = 0.02, R^2 = 0.06]. Parent's age (β = -0.35, p = 0.005) significantly predicted IC. The second model was also found to be significant [$F_{(6,175)}$ = 4.03, p = 0.001, R^2 = 0.09]. Parent's age (β = -0.35, p = 0.007), female sex of the child (β = 0.16, p = 0.02) and controlled regulation (β = 0.25, p = 0.001) were revealed as significant predictors.

Table 5

Predictors of self-reported parental mentalization

	Certainty about Mental States						Interest and Curiosity in Mental States					
	Model 1			Model 2			Model 1			Model 2		
	B	β	SE	B	β	SE	B	β	SE	B	β	SE
(Constant)	5.58		.54	1.23		.80	6.96		.42	6.25		.68
Parent's age	-.04	-.31*	.01	-.007	-.04	.01	-.03	-.35**	.01	-.03	-.35**	.01
Child's age	0.05	0.39**	.01	.02	.15	.01	.02	.23	.01	.02	.22	.01
Female sex of the child	.34	.14*	.17	.20	.08	.15	.22	.12	.13	.29	.16*	.13
Having a disability	.08	.03	.18	.06	.02	.16	.22	.12	.14	.16	.09	.13
Perceived competence				.15	.50***	.02				-.003	-.01	.01
Controlled regulation				-.01	-.07	.01				.03	.25**	.01
R^2	.07			.28			.06			.12		
adj R^2	.05			.25			.03			.09		
ΔR^2	.07			.20			.06			.06		
$F_{(df)}$	$3.73_{(4,177)}$			$11.51_{(6,175)}$			$2.85_{(4,177)}$			$4.03_{(6,175)}$		

Note. *p<0.05 **p<0.01 ***p<0.001

5. Discussions

5.1. Differences in mentalization

Significant differences have been found in parental mentalization between the two groups. As we expected, parents of atypically developing children used significantly fewer mental descriptors when characterizing their children, compared to parents of typically developing children. This finding is in line with the results of Ansari et al. (2020) who also found that parents had a tendency to predominantly share information regarding specific symptoms of disability when describing their children with developmental difficulties. Moreover, our result also corresponds with the recent findings of Nicholls et al. (2023) who proposed that difficulties in emotional and behavioral regulation of the child lead to a restricted ability of the parent to mentalize which may explain the difference between the two groups. Ghanbari et al. (2023) concluded that inappropriate and inconsistent reactions of the child to his environment may also result in a decreased level of parental mentalization, highlighting the relevance of our findings.

Interestingly, differences in parental mentalization have only been found when using the representational measure. Despite our expectations, no differences have been revealed regarding certainty about mental states and interest and curiosity in mental states. These results outline the lack of consistency in research findings regarding parental mentalization as reported by recent studies (Clarkei et al., 2020; Mattheß et al., 2023; Sprecher et al., 2023). Kirk & Sharma (2017) investigated mentalization of parents having both typically and atypically developing children, finding no significant differences. Interestingly, Ansari et al. (2020) replicated this research, obtaining inconsistent results: it was found that parents used significantly less mental descriptors when describing their child with disability compared to their descriptions about the typically developing sibling. Furthermore, Larkin et al. (2020) revealed no significant differences in mentalization, while still identified a tendency in parents of atypically developing children to construct representations related to the diagnosis.

Taken together, our results show differences in parental mentalization when a representational measure is used, but no difference can be found when mentalization is measured from the perspective of the parents, highlighting contradictions that have been outlined in previous studies and emphasizing the need of further research.

5.2. Predictors of self-reported parental mentalization

Confirming our hypothesis, basic psychological needs predicted parental mentalization. Parent's age, child's age, female sex of the child and perceived competence were identified as significant predictors of certainty about mental states. More precisely, findings suggest that the younger the parents are, the more certain they perceive themselves about understanding their children's mental states. This finding does not correspond with the result of Gagné et al. (2023) who revealed a positive association between parental age and mentalization. However, as suggested by some authors (Lee et al., 2022; Chen et al., 2023), mentalization may have a fluctuating tendency as parent-child interactions evolve, being actively influenced by the experiences of the parent. Therefore, at a younger age, parents may perceive themselves as being more certain about their children's mental states, their perceptions being influenced at this point by their expectations rather than experiences (Lindblom et al., 2022; Mattheß et al., 2023).

Further results show that certainty increases with the age of the child and parents also reported a higher level of certainty in the case of girls compared to boys. These findings are in line with the results of (Gagné et al., 2023). After controlling for demographic variables, perceived competence was found to be a significant predictor of certainty about mental states, indicating that a higher level of perceived competence predicts an increased level of certainty regarding internal states of the child. Our findings are supported by recent studies (Antwi, 2023; Desimpelaere et al., 2023; Gur et al., 2023) highlighting the importance of perceived competence with regards to parental mentalization. As pointed out byYoung et al. (2020), this association also emphasizes the vulnerability of parents of atypically developing children to experience difficulties in mentalization as a result of decreased level of perceived competence. Taken together, this predictive relationship between perceived competence and certainty about mental states may be considered as a potential explanation for the abovementioned difference in mentalization between the groups of parents of typically and atypically developing children.

Interest and curiosity in mental states was found to be predicted by the level of controlled regulation perceived by parents. Interestingly, a positive association was revealed between the two variables, suggesting that the more externally controlled parents feel themselves (i.e. the less autonomy they have), the more curious they become about their children's mental states. This finding does not correspond with previous results concerning mentalization (Ballespí et al., 2021; Desimpelaere et al., 2023). However, it aligns with the theoretical conceptualization of I (interest)-type and D (deprivation)-type curiosity (Litman, 2008). I-type curiosity leads to the pleasurable recognition of having the possibility to gain new information, while D-type curiosity results in the intension of avoiding uncertainty generated by the personal consideration of lacking relevant information (Litman, 2010). According to this approach, parents reporting a lower level of perceived autonomy, may show increased interest towards their children's mental states due to their concerns about missing knowledge that a parent should have gained. The tendency outlined in the current study can also be supported by previous results regarding the universality vs. different forms of autonomy across cultures (Helwig, 2006).

6. Conclusion

A prominent difference has been found in parental mentalization between the group of parents of typically and atypically developing children: parents of children with disabilities used significantly fewer mental descriptors and predominantly characterized their children in terms of diagnosis-related symptoms. Both perceived competence and controlled regulation were identified as significant predictors considering different levels of self-rated parental mentalization. A positive relationship was revealed between perceived competence and certainty about mental states. Controlled regulation was also positively associated with interest and curiosity in mental states. Taken together, these results suggest that perceived competence and controlled regulation may be considered as key determinants of self-reported parental mentalization. More studies should be conducted in order to further analyze this relationship.

One major strength of our study consists in examining mentalization in a sample of parents raising children with a broad range of disabilities. Addressing both parent-related and child-related factors of mentalization provided a distinctive nature to our study. Moreover, the current research included a relatively large sample size, which contributes to the generalization of our results. However, considerable limitations should also be mentioned. Low internal consistency was found regarding the Pre-Mentalizing Modes of Mental States subscale and the Autonomous

Regulation subscale of Self-Regulation Questionnaire therefore we decided not to use them for further analyses. An additional limitation can be identified concerning the heterogeneity of research findings in the case of self-reported measures of mentalization. Future studies should consider using alternative measures for assessing mentalization.

Declaration of interest statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability statement

The data that support the findings are available in Figshare, at https://doi.org/10.6084/m9.figshare.29653682.v1

Ethics statement

The study is in line with research ethical standards, the participants provided their written informed consent to participate in this study.

Authors note:

Timea Pap is a practitioner in the field of child development, working with children with special needs and their families in clinical and educational settings. Their professional and research interests include parental mentalization, self-regulation, socio-emotional development, and family adjustment in the context of typical and atypical development.

Ibolya Kotta is an Associate Professor and Head of the Department of Applied Psychology, Babeș-Bolyai University, Cluj-Napoca. Her research interests include clinical and health psychology, emotional and cognitive processes in school-age children, transdiagnostic vulnerabilities, and war- and crisis-related mental health.

Kinga Kalcza-Janosi is an Associate Professor and licensed Clinical Psychologist at the Department of Applied Psychology, Babeș-Bolyai University. Her research focuses on clinical and health psychology, fear of war, intolerance of uncertainty, transdiagnostic vulnerability factors, and the links between motivation, online sexual activities, and wellbeing.

References

Aldrich, N. J., Chen, J., & Alfieri, L. (2021). Evaluating associations between parental mind-mindedness and children's developmental capacities through meta-analysis. *Developmental Review*, *60*(February), 100946. https://doi.org/10.1016/j.dr.2021.100946

Álvarez, N., Lázaro, M. H., Gordo, L., Elejalde, L. I., & Pampliega, A. M. (2022). Maternal mentalization and child emotion regulation: A comparison of different phases of early childhood. *Infant Behavior and Development*, *66*, 101681. https://doi.org/10.1016/j.infbeh.2021.101681

Ansari, S., McMahon, C., & Bernier, A. (2020). Parental mind-mindedness: Comparing parents' representations of their children with Autism Spectrum Disorder and siblings. *Research in Autism Spectrum Disorders*, *71*(June 2019), 101491. https://doi.org/10.1016/j.rasd.2019.101491

Antwi, T. (2023). The Unplanned Journey: Challenges of Parents of Children Living with Disabilities in Ghana. *Psychology*, *14*(04), 635–655. https://doi.org/10.4236/psych.2023.144033

Ballespí, S., Vives, J., Sharp, C., Chanes, L., & Barrantes-Vidal, N. (2021). Self and Other Mentalizing Polarities and Dimensions of Mental Health: Association With Types of Symptoms, Functioning and Well-Being. *Frontiers in Psychology*, *12*(February), 1–13. https://doi.org/10.3389/fpsyg.2021.566254

Barlow, J., Sleed, M., & Midgley, N. (2021). Enhancing parental reflective functioning through early dyadic interventions: A systematic review and meta-analysis. *Infant Mental Health Journal*, *42*(1), 21–34. https://doi.org/10.1002/imhj.21896

Casale, S., Fioravanti, G., & Ghinassi, S. (2023). Applying the Self-Determination Theory to explain the link between perceived parental overprotection and perfectionism dimensions. *Personality and Individual Differences*, *204*, 112044. https://doi.org/10.1016/j.paid.2022.112044

Chen, C., Bailey, C., Baikie, G., Dalziel, K., & Hua, X. (2023). Parents of children with disability : Mental health outcomes and utilization of mental health services. *Disability and Health Journal*, *16*(4), 101506. https://doi.org/10.1016/j.dhjo.2023.101506

Clarkei, A., Meredith, P. J., & Rose, T. A. (2020). Exploring mentalization, trust, communication quality, and alienation in adolescents. *PLoS ONE*, *15*(6), 1–21. https://doi.org/10.1371/journal.pone.0234662

Desimpelaere, E. N., De Clercq, L. E., Soenens, B., Prinzie, P., & De Pauw, S. S. W. (2023a). Parenting a child with Down syndrome: A qualitative study on parents' experiences and behaviors from a self-determination theory perspective. *Journal of Pediatric Nursing*. https://doi.org/10.1016/j.pedn.2023.10.021

Desimpelaere, E. N., De Clercq, L. E., Soenens, B., Prinzie, P., & De Pauw, S. S. W. (2023b). Parenting a child with Down syndrome: A qualitative study on parents' experiences and behaviors from a self-determination theory perspective. *Journal of Pediatric Nursing*. https://doi.org/10.1016/j.pedn.2023.10.021

Dollberg, D. G. (2022). Mothers' parental mentalization, attachment dimensions and mother-infant relational

patterns. *Attachment & Human Development*, *24*(2), 189–207. https://doi.org/10.1080/14616734.2021.1901297

Farkas, L., Cless, J. D., Cless, A. W., Goff, B. S. N., Bodine, E., & Edelman, A. (2018). The Ups and Downs of Down Syndrome : A Qualitative Study of Positive and Negative Parenting Experiences. *Journal of Family Issues*, 1–22. https://doi.org/10.1177/0192513X18812192

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175–191. https://doi.org/10.3758/BF03193146

Fishburn, S., Meins, E., Greenhow, S., Jones, C., Hackett, S., Biehal, N., Baldwin, H., Cusworth, L., & Wade, J. (2017). Mind-mindedness in parents of looked-after children. *Developmental Psychology*, *53*(10), 1954–1965. https://doi.org/10.1037/dev0000304

Gagné, K., Lemelin, J. P., & Tarabulsy, G. (2023). Mother-infant interaction context matters for verbal and non-verbal parental mentalization: an initial portrait of associations between parental embodied mentalizing, mind-mindedness, and maternal characteristics in a structured and unstructured context. *Frontiers in Psychology*, *14*(July), 1–9. https://doi.org/10.3389/fpsyg.2023.1176502

Gagné, K., Lemelin, J. P., & Tarabulsy, G. M. (2021). Non-verbal and verbal parental mentalization as predictors of infant attachment security: Contributions of parental embodied mentalizing and mind-mindedness and the mediating role of maternal sensitivity. *Infant Behavior and Development*, *65*(July), 1–11. https://doi.org/10.1016/j.infbeh.2021.101622

Ghanbari, S., Goudarzi, Z., Ebrahimi, F., Sabzalizadeh, F., Erfanian Delavar, D., & Javaherian, N. (2023). Temperament and Emotional and Behavioral Problems in Children: The Moderating Role of Maternal Reflective Functioning. *Journal of Infant, Child, and Adolescent Psychotherapy*, *22*(2), 138–153. https://doi.org/10.1080/15289168.2023.2193132

Goodman, R. J., Trapp, S. K., Park, E. S., & Davis, J. L. (2021). Opening minds by supporting needs: do autonomy and competence support facilitate mindfulness and academic performance? *Social Psychology of Education*, *24*(1), 119–142. https://doi.org/10.1007/s11218-020-09577-9

Gur, A., Hindi, T.-N., Mashiach, S., Roth, D., & Keren, M. (2023). Parental reflective functioning and coping among parents of toddlers with severe developmental disabilities: An early integrative bio-psycho-social rehabilitative intervention in daycare facilities. *Research in Developmental Disabilities*, *139*, 104555. https://doi.org/10.1016/j.ridd.2023.104555

Hashemi, Z., & Einy, S. (2021). The Effectiveness of Parent-Child Interactive Therapy on Parenting Stress and Parenting Self-efficacy of Mothers of Children With Learning Disabilities. *Journal of Learning Disabilities*, *10*(3), 380–393. https://doi.org/10.32598/jld.10.3.7

Helwig, C. C. (2006). The development of personal autonomy throughout cultures. *Cognitive Development*, *21*(4), 458–473. https://doi.org/10.1016/j.cogdev.2006.06.009

Ishii, K., Morita, K., & Sumita, H. (2022). Reliability and validity of the Japanese treatment self-regulation questionnaire for Japanese workers. *BMC Public Health*, *22*(1), 1–8. https://doi.org/10.1186/s12889-022-14281-8

JongSik, J., Geonwoo, K., Hyewon, J., Narae, L., & Oh, S. (2023). Meta-analysis on the effectiveness of parent education for children with disabilities. *World Journal of Clinical Cases*, *11*(29), 7082–7091. https://doi.org/10.12998/wjcc.v11.i29.7082

Kirk, E., & Sharma, S. (2017). Mind-mindedness in mothers of children with autism spectrum disorder. *Research in Autism Spectrum Disorders*, *43–44*(October 2016), 18–26. https://doi.org/10.1016/j.rasd.2017.08.005

Kungl, M. T., Gabler, S., White, L. O., Spangler, G., & Vrticka, P. (2024). Precursors and Effects of Self-reported Parental Reflective Functioning: Links to Parental Attachment Representations and Behavioral Sensitivity. *Child Psychiatry & Human Development*. https://doi.org/10.1007/s10578-023-01654-2

Larkin, F., Hayiou, M. E., Zaynah, T., Leonard, M., & Williams, F. J. (2020). Mind - Mindedness and Stress in Parents of Children with Developmental Disorders. *Journal of Autism and Developmental Disorders*. https://doi.org/https://doi.org/10.1007/s10803-020-04570-9

Larkin, F., Schacht, R., Oostenbroek, J., Hayward, E., Fernyhough, C., Muñoz Centifanti, L. C., & Meins, E. (2021). Mind-mindedness versus mentalistic interpretations of behavior: Is mind-mindedness a relational construct? *Infant Mental Health Journal*, *42*(2), 176–187. https://doi.org/10.1002/imhj.21901

Lee, Y. J., Park, H. J., & Lee, S. Y. (2022). Learning to Live With Ambiguity : Rethinking Ambiguous Loss for Mothers of Children With Disabilities. *SAGE Open*, 1–9. https://doi.org/10.1177/21582440221095014

Lindblom, J., Pajulo, M., Nolvi, S., Tervahartiala, K., Karlsson, H., Karlsson, L., & Korja, R. (2022). Early pathways of maternal mentalization: Associations with child development in the FinnBrain birth cohort study. *Frontiers in Psychology*, *13*(December), 1–20. https://doi.org/10.3389/fpsyg.2022.855190

Litman, J. A. (2008). Interest and deprivation factors of epistemic curiosity. *Personality and Individual Differences*, *44*(7), 1585–1595. https://doi.org/10.1016/j.paid.2008.01.014

Litman, J. A. (2010). Relationships between measures of I- and D-type curiosity, ambiguity tolerance, and need for closure: An initial test of the wanting-liking model of information-seeking. *Personality and Individual Differences*, *48*(4), 397–402. https://doi.org/10.1016/j.paid.2009.11.005

Locati, F., Federica, C., Karin, E., Nick, M., & Laura, P. (2025). Mentalization, theory of mind and socioemotional development in middle childhood. *Current Psychology*, *44*(6), 4462–4475. https://doi.org/10.1007/s12144-025-07475-x

Luyten, P., Mayes, L. C., Nijssens, L., & Fonagy, P. (2017). The parental reflective functioning questionnaire: Development and preliminary validation. *PLOS ONE*, *12*(5), e0176218. https://doi.org/10.1371/journal.pone.0176218

Mattheß, J., Koch, G., Keil, T., Roll, S., Berghöfer, A., Ludwig-Körner, C., Schlensog-Schuster, F., Sprengeler, M. K., von Klitzing, K., & Kuchinke, L. (2023). Past attachment experiences, the potential link of mentalization and the transmission of behavior to the child by mothers with mental health problems: cross-sectional analysis of a clinical sample. *European Child and Adolescent Psychiatry*. https://doi.org/10.1007/s00787-023-02291-9

Meins, E., & Fernyhough, C. (2015). *Mind-mindedness coding manual, Version 2.2.* University of York, York, UK.

Meins, E., Fernyhough, C., Fradley, E., & Tuckey, M. (2001). Rethinking Maternal Sensitivity: Mothers' Comments on Infants' Mental Processes Predict Security of Attachment at 12 Months. *Journal of Child Psychology and Psychiatry*, *42*(5), 637–648. https://doi.org/10.1111/1469-7610.00759

Miller, C. T., Gire, D., Hoke, K., Huk, A. C., Kelley, D., Leopold, D. A., Smear, M. C., Theunissen, F., Yartsev, M., & Niell, C. M. (2022). Natural behavior is the language of the brain. *Current Biology*, *32*(10), R482–R493. https://doi.org/10.1016/j.cub.2022.03.031

Nicholls, G., Bailey, T., Grindle, C. F., & Hastings, R. P. (2023). Challenging behaviour and its risk factors in children and young people in a special school setting: A four wave longitudinal study. *Journal of Applied Research in Intellectual Disabilities*, *36*(2), 366–373. https://doi.org/10.1111/jar.13066

Orcan, F. (2020). Parametric or Non-parametric: Skewness to Test Normality for Mean Comparison. *International Journal of Assessment Tools in Education*, *7*(2), 255–265. https://doi.org/10.21449/ijate.656077

Pitzen, J., Lawler, J., Chow, C. M., Arble, E., & Huth-Bocks, A. C. (2025). Parenting reflectivity and mind-mindedness as unique predictors of children's attachment security and social–emotional development. *British Journal of Developmental Psychology*. https://doi.org/10.1111/bjdp.12560

Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology*, *57*(5), 749–761. https://doi.org/10.1037/0022-3514.57.5.749

Ryan, R. M., & Deci, E. L. (2019). Brick by Brick: The Origins, Development, and Future of Self-Determination Theory. In E. A. J. (Ed.), *Advances in Motivation Science* (1st ed., Vol. 6, pp. 111–156). Elsevier Inc. https://doi.org/10.1016/bs.adms.2019.01.001

Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, *61*, 111–125. https://doi.org/10.1016/j.cedpsych.2020.101860

Ryan, R. M., Ryan, W. S., Di Domenico, S. I., & Deci, E. L. (2019). The Nature and the Conditions of Human Autonomy and Flourishing. In R. M. Ryan (Ed.), *The Oxford Handbook of Human Motivation* (pp. 88–110). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190666453.013.6

Schwarzer, N.-H., Nolte, T., Fonagy, P., & Gingelmaier, S. (2021). Mentalizing and emotion regulation: Evidence from a nonclinical sample. *International Forum of Psychoanalysis*, *30*(1), 34–45. https://doi.org/10.1080/0803706X.2021.1873418

Shattnawi, K. K., Bani, S. W. M., Al-Natour, A., Al-Hammouri, M. M., Al-Azzam, M., & Joseph, R. A. (2021). Parenting a Child With Autism Spectrum Disorder: Perspective of Jordanian Mothers. *Journal of Transcultural Nursing*, *32*(5), 474–483. https://doi.org/10.1177/1043659620970634

Smorti, M., Sica, L. S., Costa, S., Biagioni, S., & Liga, F. (2022). Warmth, competence, and wellbeing: The relationship between parental support, needs satisfaction, and interpersonal sensitivity in Italian emerging adults. *European Journal of Developmental Psychology*, *19*(5), 633–653. https://doi.org/10.1080/17405629.2021.1936492

Sprecher, E. A., Cresswell, C., Kerr-Davis, A., Sleed, M., & Midgley, N. (2023). Caregiver Mentalizing and Child Emotional Regulation: A Novel Approach to Examining Bidirectional Impact. *Journal of Infant, Child, and Adolescent Psychotherapy*, *22*(4), 358–374. https://doi.org/10.1080/15289168.2023.2274200

Williams, G. C., & Deci, E. L. (1996). Internalization of biopsychosocial values by medical students: A test of self-determination theory. *Journal of Personality and Social Psychology*, *70*(4), 767–779. https://doi.org/10.1037/0022-3514.70.4.767

Yoon, H. Y., & Choi, Y. K. (2019). The development and validation of the perceived competence scale for disaster mental health workforce. *Psychiatry Investigation*, *16*(11), 816–828. https://doi.org/10.30773/pi.2019.0140

Young, S., Shakespeare-Finch, J., & Obst, P. (2020). Raising a child with a disability: a one-year qualitative investigation of parent distress and personal growth. *Disability & Society*, *35*(4), 629–653. https://doi.org/10.1080/09687599.2019.1649637