

# Mothers' Socialization of Emotions and Theory of Mind, Emotion Regulation in Children with Autism Spectrum Disorders

Nathalie Nader-Grosbois<sup>1</sup>, Emilie Jacobs<sup>1</sup>, Stéphanie Mazzone<sup>1</sup>, Nathalie Poirier<sup>2</sup>

<sup>1</sup> Chair Baron Frère in Special Education, Psychological Sciences Research Institute, UCLouvain, Louvain-la-Neuve, Belgium

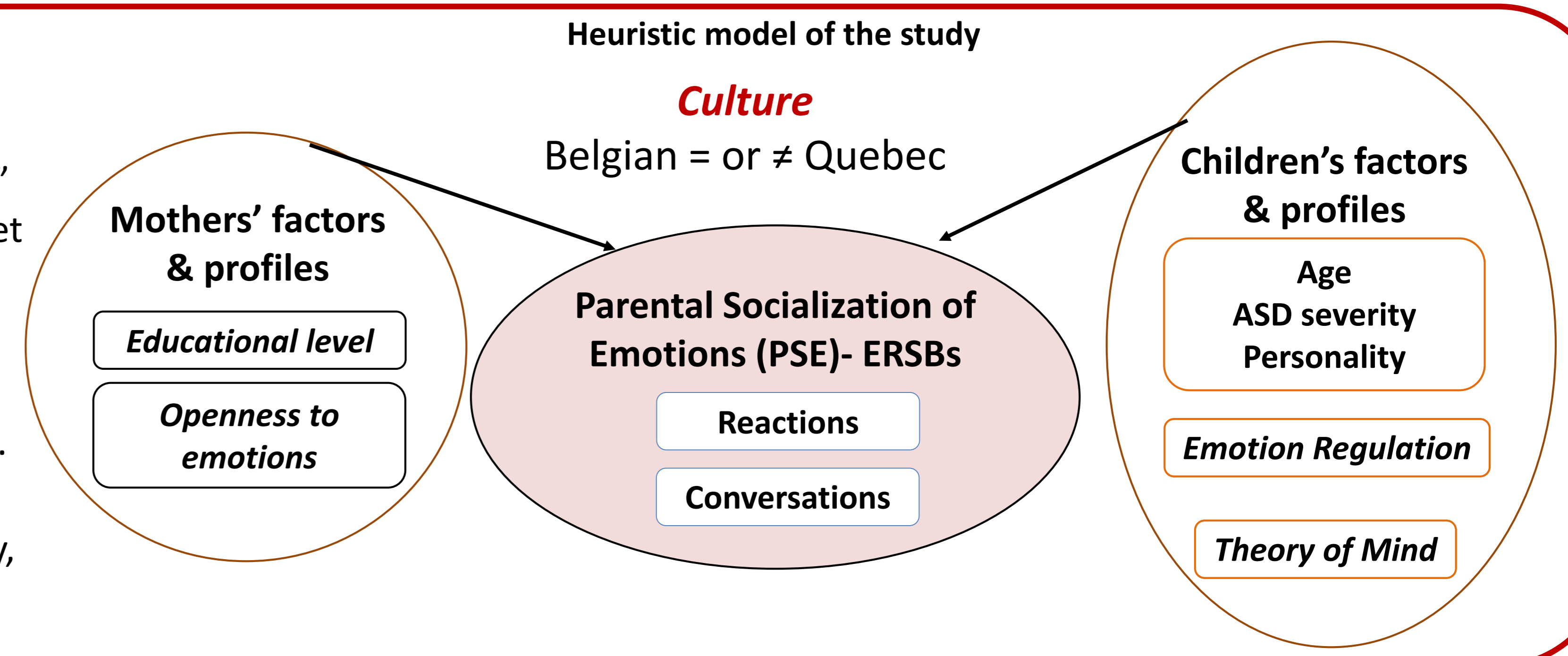
<sup>2</sup> Department of Psychology, University du Québec in Montréal, Canada

## Objectives & Theoretical model

The theoretical background to explore the interaction between socio-emotional abilities in ASD children and Parental Socialization of emotions (PSE) are: the "heuristic model of social competences" (Yeates et al., 2007, adapted by Nader-Grosbois, 2011), the "Theory of Mind" (Flavell, 1999), the model of "Emotion-Related Socialization Behaviours" (ERSBs, Eisenberg et al., 1998), which integrate both cultural and individual factors in children and their family.

This comparative study aimed to

- (1) identify similarities vs differences between Belgian and Quebec mothers in their emotional profiles, reactions and conversations about emotions toward their ASD children.
- (2) examine predictors of these reactions and conversations, including mothers' factors (educational level, culture, emotional openness profiles), children's factors (age, personality, severity of autism) and children's ToM abilities and emotion regulation.



## Methods

### Participants

- 101 children with ASD (90% boys; 4-13 years) and their mothers
- Recruited in French-speaking areas of Belgium (n = 52) and in Quebec (n = 49).

Measures: questionnaires completed by mothers

### Mothers' measures

- Dimensions of Openness to Emotions DOE (Reichert & Genoud, 2012)
- Parental Reactions toward Positive and Negative Emotions (Daffe & Nader-Grosbois, 2009)
- Questionnaire of Parent-Child Conversations about Emotions (QPCC, Mazzone, Roskam, Mikolajczak, Nader-Grosbois, 2017) (frequency, numbers of emotional terms)

### Children's measures

- Bipolar Rating Scales based on the Five-Factor Model (EBMCF, Roskam et al., 2000)
- Theory of Mind Inventory (ToMI-vf, Houssa et al., 2014; ToMI, Hutchins et al., 2012)
- Emotion Regulation Checklist (ERC-vf, Nader-Grosbois & Mazzone, 2015; ERC, Shields & Cicchetti, 1997)
- CARS-T (Schopler et al., 1980; Rogé, 1989) completed by a psychologist or teacher

## Results

### (1) Cross-cultural comparisons

Table 1. Descriptive analyses and independent t-tests between mothers from Belgium and Québec

	Belgian sample M (SD) n = 52	Quebec sample M (SD) n = 49	X <sup>2</sup> /t	d
<b>Mothers' characteristics</b>				
Age (in years)	38.78 (5.01)	37.96 (5.21)	1.20	
Educational level (% of superior grade)	71%	86%	2.58	
<b>Mothers' dimensions of emotional openness</b>				
Cognitive representation of emotions	2.75 (.69)	3.24 (.62)	-3.59***	.65
Communication of emotions	2.31 (.69)	2.81 (.46)	-4.14***	.58
Perception of Internal Bodily Indicators of Emotions	2.09 (.99)	3.27 (.76)	-6.23***	.88
Perception of External Bodily Indicators of Emotions	2.04 (.69)	3.15 (.61)	-8.18***	.64
Regulation of emotions	2.07 (.62)	2.98 (.54)	-7.47***	.58
Normative Restrictions of Affectivity	1.99 (1.03)	3.13 (1.12)	-5.01***	1.08
<b>Mothers' reactions to negative emotions</b>				
Problem-focused	5.48 (1.25)	5.92 (.78)	-2.04*	1.02
Encouragement of expression of emotion	4.39 (1.42)	5.14 (.85)	-3.09**	1.15
<b>Mothers' reactions to positive emotions</b>				
Socialization	5.11 (1.39)	5.84 (1.01)	-2.87**	1.19
<b>Mother-child conversations about emotions</b>				
Frequency of conversations about emotions	2.31 (.78)	2.73 (.54)	-2.70**	.64

\*p < .05; \*\*p < .01; \*\*\*p = .001

- All dimensions of mothers' emotional openness differ significantly in disfavor way for Belgian mothers (H1a)
- Cross-cultural differences appear for problem-focused, encouragement to child's negative emotions and socialization to child's positive emotions, in disfavor way for Belgian mothers, for but not for other reactions (H1b)
- Cross-cultural differences appear for frequency of conversations and the numbers of emotions-related verbs in disfavor way for Belgian mothers (H1c)

Table 2. Descriptive analyses and independent t-tests between ASD children from Belgium and Québec

	Belgian sample M (SD) n = 52	Quebec sample M (SD) n = 49	X <sup>2</sup> /t	d
<b>Children's characteristics</b>				
Sex (% boys)	90%	87%	.37	
Age in months	90.42 (24.96)	93.88 (33.11)	-.49	
Level of severity of autism	32.04 (5.95)	31.63 (6.26)	.27	
<b>Children's personality factors</b>				
Extraversion	5.22 (1.75)	5.55 (1.29)	-.87	
Emotional stability	5.32 (1.13)	5.11 (1.29)	.81	
Conscientiousness	5.61 (1.65)	5.43 (1.66)	.51	
Openness to experience	5.54 (1.7)	6.44 (1.41)	-2.66*	1.54
Agreeableness	5.59 (1.52)	6.21 (1.39)	-1.94†	1.44
<b>Children's socio-emotional competences</b>				
ToMI-Total (max = 20)	14.28 (2.68)	14.45 (2.15)	-.20	
ToMI-"Thoughts" Factor 1	12.01 (3.21)	11.55 (3.16)	.44	
ToMI-"Socio-emotional" Factor 2	15.87 (2.22)	17.28 (1.99)	-1.99	.67
ToMI-"Beliefs" Factor 3	16.76 (3.04)	17.10 (1.91)	-.40	
Emotion Regulation	2.53 (.17)	3.39 (.35)	-6.66**	3.12
Emotion Dysregulation	1.96 (.11)	1.77 (.36)	.91	

† = .053; \*p < .01; \*\*p = .001

- Belgian ASD children are significantly less open to experience in their personality and weaker in emotion regulation than Quebec ASD children

### Links between mothers' ERBs

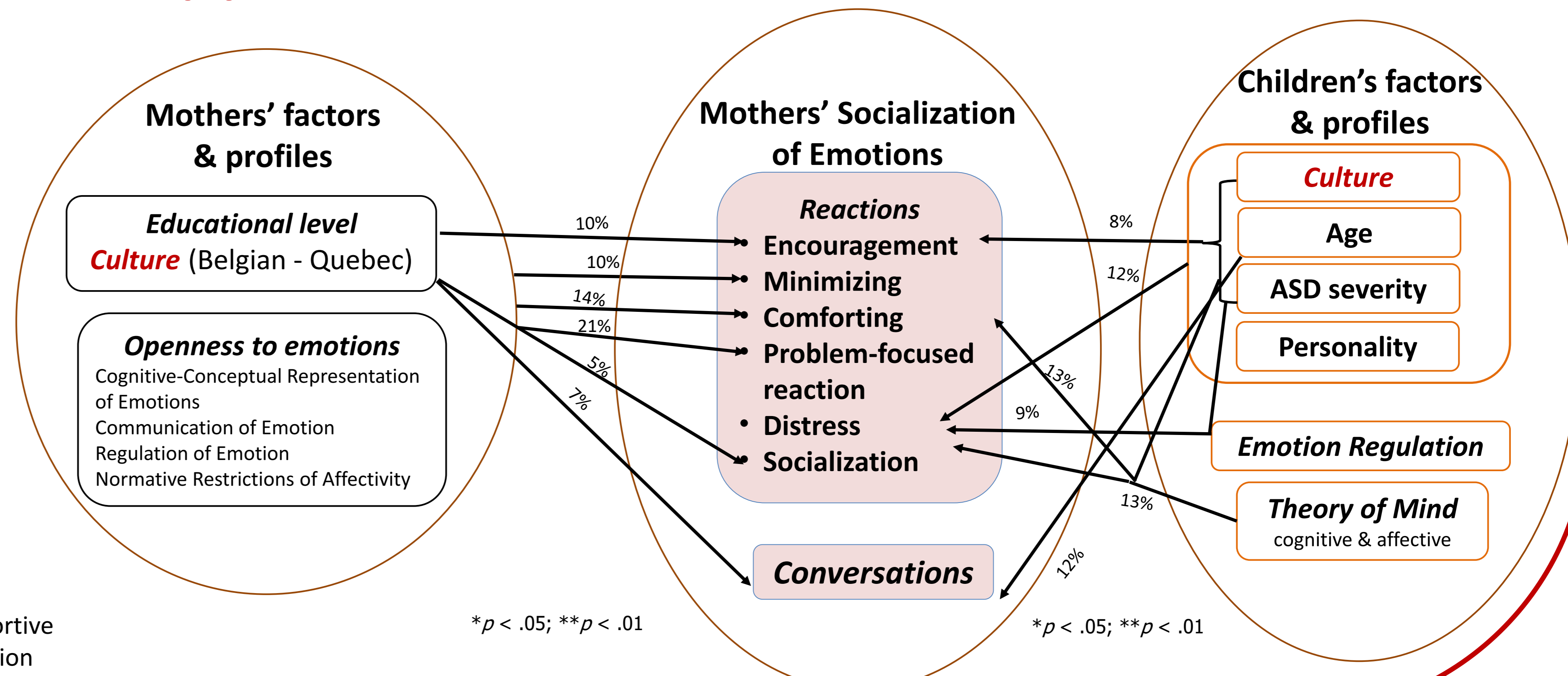
Table 3. Spearman correlations between mothers' reactions and conversations

Mothers' reactions to negative emotions	Mothers-child conversations about emotions (frequency)
Comforting	.233*
Problem-focused	.352***
Encouragement of expression of emotion	.451***
Distress	-.029
Punitive	.035
Minimizing responses	.060
<b>Mothers' reactions to positive emotions</b>	
Socialization	.325**
Encouragement	.114
Reprimand	.128
Discomfort	-.007

\*p < .05; \*\*p < .01; \*\*\*p = .001

→ Frequency of conversations about emotions are positively linked with the three supportive reactions to child's negative emotions and with only socialization to child's positive emotion

### (2) Predictors of mothers' socialization of emotions



\*p < .05; \*\*p < .01

\*p < .05; \*\*p < .01

## Conclusions

The study showed the relevance of examining bidirectional links between socio-emotional abilities in children and ERSBs in parents, integrating both individual and cultural factors. Coherence between supportive reactions and conversations was obtained. It seems important to take account of parents' educational level, cultural factors affecting their emotional openness profiles and their reactions and conversations about emotions, in order to adapt the intervention provided for parents and their ASD children. It appears essential to take account of the severity of ASD and of ToM profiles related to affective and cognitive mental states, in order to give parents of ASD children better guidance about how to react to their children's emotions.