Doctoral (PhD) dissertation

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Mentalizing in the parent-child relationship

2024

EÖTVÖS LORÁND UNIVERSITY
FACULTY OF EDUCATION AND PSYCHOLOGY

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DOI:10.15476/ELTE.2024.160

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Budapest, 2024

EÖTVÖS LORÁND TUDOMÁNYEGYETEM

ADATLAP a doktori értekezés nyilvánosságra hozatalához

I. A doktori értekezés adatai

A szerző neve: Szabó Brigitta

A doktori értekezés címe és alcíme: Mentalizing in the parent-child relationship

A doktori iskola neve: Pszichológiai Doktori Iskola

A doktori iskolán belüli doktori program neve: Fejlődés- és klinikai gyermekpszichológia program

A témavezető neve és tudományos fokozata: Miklósi Mónika PhD és Futó Judit PhD

A témavezető munkahelye: ELTE PPK Fejlődés- és Klinikai Gyermekpszichológia Tanszék

MTA Adatbázis-azonosító: 10075558

DOI-azonosító[1]:10.15476/ELTE.2024.160

II. Nyilatkozatok

1. A doktori értekezés szerzőjeként[2]

a) hozzájárulok, hogy a doktori fokozat megszerzését követően a doktori értekezésem és a tézisek nyilvánosságra kerüljenek az ELTE Digitális Intézményi Tudástárban. Felhatalmazom a Pszichológiai Doktori Iskola hivatalának ügyintézőjét Kulcsár Dánielt, hogy az értekezést és a téziseket feltöltse az ELTE Digitális Intézményi Tudástárba, és ennek során kitöltse a feltöltéshez szükséges nyilatkozatokat.
b) kérem, hogy a mellékelt kérelemben részletezett szabadalmi, illetőleg oltalmi bejelentés közzétételéig a doktori értekezést ne bocsássák nyilvánosságra az Egyetemi Könyvtárban és az ELTE Digitális Intézményi Tudástárban;[3]
c) kérem, hogy a nemzetbiztonsági okból minősített adatot tartalmazó doktori értekezést a minősítés (-ig tartó időtartama alatt ne bocsássák nyilvánosságra az Egyetemi Könyvtárban és az ELTE Digitális Intézményi Tudástárban;[4]
d) kérem, hogy a mű kiadására vonatkozó mellékelt kiadó szerződésre tekintettel a doktori értekezést a könyv megjelenéséig ne bocsássák nyilvánosságra az Egyetemi Könyvtárban, és az ELTE Digitális Intézményi Tudástárban csak a könyv bibliográfiai adatait tegyék közzé. Ha a könyv a fokozatszerzést követőn egy évig nem jelenik meg, hozzájárulok, hogy a doktori értekezésem és a tézisek nyilvánosságra kerüljenek az Egyetemi Könyvtárban és az ELTE Digitális Intézményi Tudástárban.[5]

2. A doktori értekezés szerzőjeként kijelentem, hogy
a) a ELTE Digitális Intézményi Tudástárba feltöltendő doktori értekezés és a tézisek saját eredeti, önálló szellemi munkám és legjobb tudomásom szerint nem sértem vele senki szerzői jogait;
b) a doktori értekezés és a tézisek nyomtatott változatai és az elektronikus adathordozón benyújtott tartalmak (szöveg és ábrák) mindenben megegyeznek.

3. A doktori értekezés szerzőjeként hozzájárulok a doktori értekezés és a tézisek szövegének plágiumkereső adatbázisba helyezéséhez és plágiumellenőrző vizsgálatok lefuttatásához.

Kelt: 2024.06.05.

Szabó Brigitta

a doktori értekezés szerzőjének aláírása

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[1] A kari hivatal ügyintézője tölti ki.
[2] A megfelelő szöveg aláhúzandó.
[3] A doktori értekezés benyújtásával egyidejűleg be kell adni a tudományági doktori tanácshoz a szabadalmi, illetőleg oltalmi bejelentést tanúsító okiratot és a nyilvánosságra hozatal elhalasztása iránti kérelmet.
[4] A doktori értekezés benyújtásával egyidejűleg be kell nyújtani a minősített adatra vonatkozó közokiratot.
[5] A doktori értekezés benyújtásával egyidejűleg be kell nyújtani a mű kiadásáról szóló kiadói szerződést.

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Acknowledgements

I owe the greatest thanks to my supervisors, Mónika Miklósi PhD and Judit Futó PhD. During the four years, they supported me continuously, personally and professionally. Thank you for allowing me to bring about my own ideas. I am also grateful, that they always believed in me even when I did not believe in myself at all.

I am also very grateful to Carla Sharp PhD (University of Houston) and Patrick Luyten PhD (University of Leuven, University College London), who were my co-authors during the process as two of the most famous researchers of mentalizing. In addition to a lot of expert knowledge, I learned a lot from them about professional humility and support, as they embraced a young researcher.

I owe a special thanks to my opponents Beatrix Koronczai PhD and Francesca Penner PhD. My dissertation improved significantly as a result of their comments.

I would like to thank my colleagues from the ELTE Department of Developmental and Clinical Child Psychology for the support I received during the four years. I thank my fellow PhD students, Rozi, Barbi and Csaba, as we were always there for each other.

I owe a debt of gratitude to all psychology students, without whom my research would not have been possible. I am also very grateful that so many parents and adolescents participated in our research.

Finally, I would like to thank all my loved ones for enduring these not-so-stressful four years by my side and for supporting me throughout. Special thanks to Bálint, my secure base, who loved and supported me through the whole process.

Abbreviations

90% CI - 90% confidence interval

ANOVA - Analysis of variance

APA - American Psychiatric Association

ASQ - Attachment Style Questionnaire

BPD - Borderline personality disorder

CFA – Confirmatory factor analysis

CFI - The Comparative Fit Index

CMS - Certainty about Mental States

CR - Confidence

DBD - Disruptive behavior disorders

DC - Discomfort with closeness

IC - Interest and Curiosity

ILK - The Invertar zur Erfassung der Lebensqualität Kindern und Jugendlichen

M - Mean

Max - maximum

MBT - Mentalizing-based psychotherapy

Min - Minimum

MORS - The Mothers' Object Relations Scale

MORS-I - Mothers' Object Relations Scales Short-Form Invasiveness subscale

MORS-W - Mothers' Object Relations Scales Short-Form Warmth subscale

NA - The need for approval

PM - Pre-Mentalizing

PR - Preoccupation with relationships

PRF- Parental reflective functioning

PRFQ - The Parental Reflective Functioning Questionnaire

PRFQ-0-5 - The Parental Reflective Functioning Questionnaire for parents of children up to five years of age

PRFQ-A - The Parental Reflective Functioning Questionnaire for parents of adolescents

PSOC - The Parental Sense of Competence Scale

PSS - The Perceived Stress Scale

QOL - -Quality of life

RFQ - The Reflective Functioning Questionnaire

RFQ_C - The Reflective Functioning Questionnaire Certainty about mental states subscale

RFQ_U - The Reflective Functioning Questionnaire Uncertainty about the mental states subscale

RFQ-8 – The eight-item version of The Reflective Functioning Questionnaire

RFQ-R-7 The revised seven-item version of The Reflective Functioning Questionnaire

RFQY - The Reflective Function Questionnaire for Youth

RFQY-5 – The five-item version of The Reflective Function Questionnaire for Youth

RMSEA - The root means square error

RS - Relationships as secondary

SD – Standard deviation

SDQ -The Strengths and Difficulties Questionnaire

SE – Standard error

SRMR - Standardised Root Mean Square Residual

SSD - Somatic symptom disorders

TLI – The Tucker-Lewis Index

List of Tables

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List of Publications

List of publications used in the dissertation:

Szabó, B., Futó, J., Luyten, P., Boda, M., & Miklósi, M. (2023). The psychometric properties of the Hungarian Parental Reflective Functioning Questionnaire. *European Journal of Developmental Psychology*, 1-18. https://doi.org/10.1080/17405629.2023.2276482

Szabó, B., Miklósi, M., Boda, M., & Futó, J. (2022). The adaptation of The parental reflective functioning questionnaire adolescent version to the Hungarian language and presentation of its psychometric characteristics. *Psychiatria Hungarica: A Magyar Pszichiatriai Tarsasag tudomanyos folyoirata*, *37*(2), 150-165.

Szabó, **B**., Futó, J., & Miklósi, M. (In Press). What makes mothers feel competent? *Psihologija*

Szabó, B., Sharp, C., Futó, J., Boda, M., Losonczy, L., & Miklósi, M. (2024). The reflective function questionnaire for youth: Hungarian adaptation and evaluation of associations with quality of life and psychopathology. *Clinical child psychology and psychiatry*, 13591045241252205. https://doi.org/10.1177/13591045241252205

List of publications during the PhD scholarship period, which are not included in my dissertation:

Szabó, B., Futo, J., & Miklósi, M. (2023). The relationship between mothers' attachment style, mindful parenting, and the perception of their child. *Československá psychologie*, *67*(5), 260-272. https://doi.org/10.51561/cspsych.67.5.260

Siska, D., **Szabó, B.,** & Cserép, M. (2023). Eating habits among Hungarian adolescents. *Orvosi Hetilap*, *164*, 49–64. https://doi.org/10.1556/650.2023.32657

Szeifert, N. M., Sebők, B., Szilágyi, S., **Szabó, B**., Miklósi, M., & Schmelowszky, Á. (2023). The psychological impact of the COVID-19 pandemic on emergency care workers. *Orvosi Hetilap*, *164*(52), 2046-2054. https://doi.org/10.1556/650.2023.32924

Cserép, M., **Szabó, B**., Tóth-Heyn, P., Luczay, A., Dezsőfi-Gottl, A., Cseh, Á., ... & Szumska, I. (2023). The role of cognitive emotion regulation in disordered eating among chronically ill adolescents. *Orvosi hetilap*, *164*(48), https://doi.org/1895-1903. 10.1556/650.2023.32877

Losonczy, L., & **Szabó, B.** (2023). The relationship between parental reflective functioning, parental cognitive emotion-regulation and the perception of the adolescents' quality of life. *Psychiatria Hungarica: A Magyar Pszichiatriai Tarsasag Tudomanyos Folyoirata*, *38*(2), 110-120.

Tamás, B., & **Szabó, B**. (2023). Adolescents' quality of life in the light of mentalization and emotion regulation. *Psychiatria Hungarica: A Magyar Pszichiatriai Tarsasag tudomanyos folyoirata*, *38*(2), 121-128.

Cserép, M., **Szabó, B**., Tóth-Heyn, P., Szabo, A. J., & Szumska, I. (2022). The Predictive Role of Cognitive Emotion Regulation of Adolescents with Chronic Disease and Their Parents in Adolescents' Quality of Life: A Pilot Study. *International Journal of Environmental Research and Public Health*, *19*(23), 16077. https://doi.org/10.3390/ijerph192316077

Szabó, **B**., & Miklósi, M. (2024). Looking for borderline personality disorder. *Neuropsychopharmacologia Hungarica, 26*(1), 53–56.

Szegő, Zs., & **Szabó, B**. (2024) The associations between attachment, mentalizing and resilience among adults. *Neuropsychopharmacologia Hungarica, 26*(1), 39–52.

Molnár, E., & **Szabó, B**. (2024) The relationship between mentalizing, attachment, and perceived stress. *Neuropsychopharmacologia Hungarica, 26*(1), 17–29.

Karlóciai, Zs., Jersele, A., **Szabó, B**., & Miklósi, M. (In Press) Hungarian Version of Family Relations Test (H-FRT) – Development and Psychometric Characteristics. *Magyar Pszichológiai Szemle*

Miklósi, M., Vajsz, K., Oláh, S., Nagy, V., & **Szabó, B**. [Manuscript submitted for publication]. Attention-deficit/hyperactivity symptoms, mental health, and the strengths of the healthy adult self: an investigation of Bernstein's Strengths Scale using a network approach.

Németh, B., Sulyok R., **Szabó, B.**, & Miklósi, M. [Manuscript submitted for publication]. Adultcentrism is not incompatible with advancing children's participation in family

Due to the page limits, Appendix A contains the details of 43 conference presentations made during the period of the PhD scholarship.

Preface

„To see ourselves from the outside and others from the inside" (Fonagy et al., 2023, p. 253)

The citation above is one of the best summaries of a uniquely human capacity called mentalizing. Mentalizing or reflective functioning enables us to understand ourselves and others as motivated by internal mental experiences such as thoughts and feelings (Bateman & Fonagy, 2004). Consequently, mentalizing is essential to navigating the social world. Mentalizing is closely linked to the intergenerational transmission of attachment (Slade, 2005; Slade et al., 2005a), therefore mentalizing-based psychotherapy (MBT) was initially used to treat borderline personality disorder (American Psychiatric Association; APA, 2013). However later on research indicated that many mental disorders are linked to different mentalizing deficits (Fonagy et al., 2016), therefore mentalizing-based techniques are currently used in a variety of settings.

Despite the importance of mentalizing in mental health, at the time of this dissertation, there were no validated Hungarian questionnaires to measure parental and adolescent mentalizing capacity. We aimed to fill this gap and adapt questionnaires which were already widely used in other languages in order to make it possible to assess parental and adolescent mentalizing in the Hungarian language. Our next objective was to measure these constructs' correlates with other measures of mental health in Hungarian samples, as no such studies were previously conducted. We aimed to focus on both adolescents' and their parents' mental health.

Hopefully, our validated questionnaires and results can be the base of future studies including prevention and interventions, and the results can be implemented in the Hungarian psychological practice.

I. Introduction

I.1. The summary of attachment theory

John Bowlby (1969/1982) stated that infants are born with attachment behaviours to ensure closeness to the attachment figures. Attachment figures contribute to an infant's sense of safety, healthy exploration of the environment, and the development of adaptive emotion regulation skills. Through their interactions with attachment figures, children internalize expectations regarding caregiver responses and the effectiveness of their behaviour, thus building internal working models. As a result having an available, sensitive attachment figure responsive to the child's support-seeking increases the child's sense of security and confidence in proximity-seeking as an effective distress regulation strategy. However, when the attachment figure is not available, sensitive, or responsive, severe attachment-related doubts compound the distress that first prompted proximity-seeking, resulting in a feeling of insecurity among the child.

Using the Strange Situation Procedure Ainsworth identified three basic patterns of attachment (Ainsworth et al., 1978; Tóth, 2011). Babies with secure attachment styles are usually upset by separation, and they respond by searching and crying when their caregiver is absent. Upon the parent's return, the child contacts them immediately and clearly shows their desire for closeness. As a result of contact and parental reassurance, they continue to explore the environment, so that in securely attached babies, the systems that regulate attachment and exploratory behaviors are balanced. It is rare for babies with insecure-avoidant attachments to exhibit any signs of being upset by the new circumstances or the absence of their parents. When the parent returns, they avoid contact and communication with them, and if the parent approaches, they catch their gaze, turn away, or move away. Throughout the entire situation, their attention is primarily focused on the games. In babies with avoidant attachment, the balance between attachment and exploration has shifted towards exploration. A baby with an insecure-resistant attachment shows signs of anxiety from the beginning; instead of exploring their toys and interacting with the stranger, they prefer to stay close to their parents. When a parent is separated from them, they express a strong desire for closeness, which they want to maintain even after the parent returns. Nevertheless, the presence of the attachment figure does not calm them; they cry or complain until the end of the test, and they rarely engage in independent exploratory activities. In infants with resistant attachment, the balance of the behavioral systems tends toward the excessive expression of attachment behaviors, at the expense of exploratory behavior. Among mothers and infants living under average, everyday

conditions, researchers were unable to categorize 5-20% of dyads into any of the three attachment patterns (Van Ijzendoorn et al., 1999). The proportion of babies with "unclassifiable" behavior that does not fit into any pattern reached 40-80% in the groups of mothers suffering from particularly vulnerable conditions or severe psychological problems (Granqvist et al., 2017). According to Main and Solomon (1990), these infants were unable to cope with the stressful situation by using an organized, coherent attachment strategy despite the presence of the attachment person in the Strange Situation Test, in contrast to infants with three coherent, organized attachment patterns. A newly identified group was referred to as disorganized/disoriented as a result of its particular behavioral characteristics, such as simultaneous or consecutive contradictory behavior sequences, misdirected, hesitant or stereotyped movements, persistent immobility or freezing, or signs of parental fear.

Although attachment is most noticeable early in life, John Bowlby (1969/82) stressed that attachment-related experiences shape an individual's psychosocial functioning throughout their lifespan. Other relationship partners often become attachment figures during adolescence and adulthood, including close friends, romantic partners, teachers and therapists. Adult attachment style is described as the "*systematic patterns of expectations, needs, emotions, emotion-regulation strategies, and social behaviour*" in close relationships (Shaver & Mikulincer, 2002, p. 134). Previous studies also highlighted the intergenerational transmission of attachment (Crowell & Feldman, 1991; Fonagy et al., 1991). Adults tend to use the internal models of their parents to guide their own parenting behaviours (identification; Cohen et al., 2011; Coyl et al., 2010; La Valley & Guerrero, 2012). Furthermore, the current self-model also influences parental behaviours, which is rooted in the parents' own attachment experiences (Bretherton, 1985).

Bartholomew and Horowitz (1991) identified four adult attachment patterns along two dimensions: the image of others and the self-image, which can be both positive or negative. A person with a secure attachment style displays intimacy and autonomy because both their self-image and the image of others are positive. A positive image of others, but not the self, characterizes someone with a preoccupied attachment style. The person strives for self-acceptance by gaining the acceptance of someone who is essential to them, so they experience high anxiety levels in their attachment relationships. Individuals with a dismissing attachment pattern have a positive image of themselves and a negative of others, so they protect themselves by avoiding close relationships and thus maintaining a sense of independence and invulnerability, which results in experiencing low anxiety levels in their relationships.

Individuals with a fearful attachment pattern have negative images of themselves and others, so they experience both attachment anxiety and avoidance.

I.2. Object relations

Psychoanalytic theory conceptualizes object relations as developmentally organized, intrapsychic, and dynamic psychological structures that consist of self- and object representations (Hamilton, 1989). According to the prototype hypothesis (Madigan et al., 2015), early attachment representations influence other relationships throughout life. As a result, the parent's own attachment representations can affect the relationship with the child and can predict the child's attachment pattern (Van Ijzendoorn, 1995). The ability to perceive a child's emotions is a caregiver skill fundamental to providing sensitive care. Through their own attachment experiences, parents acquire this ability (Leyh et al., 2016). Instead of objective reports and characteristics, the parent's image of the child is influenced by their own inner world (Danis et al., 2012). By endowing their child with characteristics through their own attachment representation, the parent also influences the child's behaviour. Parental attachment and child perception were consistent in Madigan et al.'s (2015) longitudinal study. Parents with autonomous attachment representations were 25 times more likely to represent their children in a balanced manner. Moreover, the relationship between the parent's attachment pattern and the child's attachment pattern is entirely mediated by the parent's formed perception of the child. As compared to the previous prenatal measurement, the subsequent measurement of the child at 11 months did not improve the prediction of the child's attachment. Therefore, object relations are an essential indicator of early parent-child relationships

I.3. The definition of mentalizing

Mentalizing or reflective function refers to "*the mental process by which an individual implicitly and explicitly interprets the actions of himself and others as meaningful based on intentional mental states such as personal desires, needs, feelings, beliefs, and reasons*" (Bateman & Fonagy, 2004, p. 21). As the definition suggests, mentalizing is a multidimensional construct encompassing implicit-explicit, self-other, internally-externally based, and cognitive-affective dimensions (Fonagy et al., 2016). Implicit mentalizing develops early and is nonconscious, non-verbal, fast, and cognitively efficient but inflexible. On the other hand, explicit or controlled mentalizing develops later and is slower, more deliberate, and more flexible, involving verbal communication and higher cognitive demands, e.g., when a patient is

asked to consider someone else's perspective in a psychotherapy session (Yatziv et al., 2018). Another dimension relates to one's own or others' mental states, which involves the capacity to recognize alternative viewpoints and acknowledge that one's own and others' emotions may differ in response to a given situation (Ballespí et al., 2021a). Internal mentalization refers to focusing on one's own or others' internal states, such as thinking about others' emotions in a situation. In contrast, external mentalization relies on external features, such as facial expressions and behavior, e.g., when a therapist infers how a patient feels based on their facial expressions (Bateman & Fonagy, 2004). It is important to differentiate between cognitive mentalizing, which refers to the cognitive processes, such as reasoning about why someone might feel sad, and affective mentalizing, which involves subjective experience, such as empathizing with someone else.

The process of mentalizing is fundamentally interactive, as it develops in the context of interactions with others and is continually influenced by their mentalization levels (Fonagy et al., 2016). The child's mentalizing capacity is highly dependent on the quality of their early attachment relationships (Luyten et al., 2017). Attachment relationships reflect how well subjective experiences are mirrored by attachment figures, which influence the development of affect regulation and self-control, the foundations of mentalizing (Fonagy and Target, 1997). For caregivers in the early stages of attachment, it is important to be able to comprehend their own and others' mental states as they recall childhood experiences with their own attachment figures (Fonagy et al., 1998). It is also worth noting, that according to Fonagy et al. (2016), mentalizing difficulties may result from both deactivation (avoidance) and hyperactivation (anxiety) of the attachment system.

Two broad types of mentalizing impairments have been described (Fonagy et al., 2016). Hypomentalizing refers to concrete or psychic equivalent thinking, which means the inability to form complex models of one's own and others' minds (e.g., "*People's thoughts are a mystery to me*."). Hypomentalizing is associated with increased levels of eating disorder symptoms and self-harm (Cucchi et al., 2018), emotion dysregulation problems (Euler et al., 2021), and depressive symptoms (APA, 2013; Luyten & Fonagy, 2014). The opposite tendency is called hypermentalizing or pseudo-mentalizing (Sharp al., 2011), which refers to excessive mentalizing and forming mentalistic representations without anchoring them in reality (e.g., "*I always know what I feel*."). A review by McLaren et al. (2022) indicates that hypermentalizing is more closely related to borderline personality disorder, attention-deficit hyperactivity disorder, and social anxiety disorder symptoms compared to control groups (APA, 2013). However, McLaren et al. (2022) also noted that hypermentalizing and hypomentalizing are not

mutually exclusive; a person can exhibit elevated levels of both hypermentalizing and hypomentalizing, and neither is associated exlusively with any form of psychopathology.

I.4. The role of parental reflective functioning

Researchers have demonstrated that the sensitivity and responsiveness of caregivers explain only a relatively small portion of the intergenerational transmission of attachment, resulting in what is referred to as a "*transmission gap*" (Van Ijzendoorn & Bakermans-Kranenburg, 2019). Fonagy et al. (1995) proposed that the reflective function of parents might partially account for this transmission gap. Parental reflective functioning (PRF) refers to parents' capacity to reflect on their own and their child's internal mental experiences (Slade, 2005). PRF is the specific manifestation of the broader concept of reflective functioning (Fonagy et al., 2016) within the parent-child relationship. For example, if a baby is distressed and crying during vaccinations, a parent with a high level of parental mentalizing may assume that the child is suffering from pain. In this case, the parent will display marked mirroring as well as calming behaviors. Parents may also exhibit maladaptive reflective functioning when they believe their child is intentionally misbehaving when crying during vaccination to embarrass them, which can lead to aggressive behavior. PRF enables parents to access emotions and memories related to their own early attachment experiences (Luyten et al., 2017). PRF has been shown to be associated with attachment security and adaptive emotional regulation capacities and thus can be expected to play a role in the intergenerational transmission of secure attachment (Fonagy et al., 2023).

I.5. Measurement and Correlates of Parental Reflective Functioning

I.5.1. The Parental Reflective Functioning Questionnaire

Fonagy et al. (1991) developed the Reflective Self-Function Scale to assess the capacity of parents to understand mental states. The Reflective Self-Function Scale (later renamed as Reflective Functioning Scale; RFS; Fonagy et al., 1998) was originally developed for use in the Adult Attachment Interview (AAI; George et al., 1985) to identify markers of a person's ability to comprehend their own and others' mental states as they recall childhood experiences with their own attachment figures. As a result of applying the RFS to the Parent Development Interview (PDI; Aber et al., 1985, Unpublished), a new RF measure called PDI-RF has also been developed (Slade et al., 2004). The parents' mental representation of the child as well as their own mental representation of themselves as a parent was evaluated during this interview.

Parental Reflective Functioning Questionnaire (PRFQ; Luyten et al., 2017) is the first self-report measure of PRF. The PRFQ is more cost-effective than prior interview-based measures and is the main self-report measure used today. However, until this dissertation, there was no Hungarian translation available. Originally developed in English, it consists of three subscales (α = .70 - .82). The first subscale, Pre-Mentalizing (PM), reflects the parents' tendency for malevolent attributions about their child's behaviour and their difficulty entering the child's subjective world, e.g. "*My child cries around strangers to embarrass me*". The second subscale, Certainty about Mental States (CMS), assesses a parent's confidence in understanding their child's mental state, such as "*I always know what my child wants.*" Higher scores on CMS indicate more genuine and adaptive parental mentalizing; very high scores, however, reflect excessive mentalizing. Lastly, Interest and Curiosity (IC) measures parents' curiosity about their child's mental experiences, e.g. "*I am often curious to find out how my child feels*". Initially designed for parents of children under five (PRFQ-0-5), the PRFQ was later adapted by rephrasing the items for parents of adolescents (PRFQ-A; Luyten et al., 2017). The expected three-factor solution had an acceptable fit, in maternal and paternal samples as well. All items had significant factor loadings on their respective factors, and internal consistencies ranged between .62 and .78 (Dieleman et al., 2019). However, it is worth noting the relevance of the child's age in parental mentalizing. Using the same PRFQ items for children of different ages may not be appropriate. A parent may imagine different scenarios when thinking about a young child or an adolescent, e.g. item seven, *"I find it hard to actively participate in make-believe play or imaginary activities with my child".*

Certain findings indicated that Pre-Mentalizing was negatively correlated with maternal age and education level (Luyten et al., 2017). Additionally, PM displayed a moderately positive association with attachment avoidance and anxiety, while CMS exhibited a weaker negative association with both. Maternal Pre-Mentalizing was negatively related to infant attachment security, while maternal IC displayed a positive relationship. However, CMS did not predict infant attachment security. Using The Reflective Functioning Questionnaire (RFQ) for construct validity, Fonagy et al. (2016) assessed the association between the PRFQ and general mentalizing. There are two subscales of the RFQ, Certainty (RFQ_C, e.g. "*I always know how I feel*") and Uncertainty (RFQ_U, e.g. "*People's thoughts are a mystery to me*"). There was a negative association between the RFQ_C and PRFQ PM subscale. Additionally, the RFQ_U subscale was positively correlated with the PM subscale and negatively correlated with the CMS subscale.

Subsequently, the PRFQ has been validated in various languages (Table 1). Most studies supported the three-factor structure of the PRFQ, although some items were omitted during analysis. Overall, Cronbach's α or McDonald's ω values were acceptable for CMS and IC across all studies. However, for the Pre-Mentalizing subscale, these values were low in Chinese, Korean, and Danish samples (Ye et al., 2022; Lee et al., 2021; Wendelboe et al., 2021).

Prior studies have mostly used interview-based methods to assess caregivers' adult attachment styles in relation to their parental reflective functioning. In these studies, ratings of coherence were the strongest predictor of parents' RF (Fonagy et al., 1991). Research on the association between PRF and caregivers' adult attachment styles based on self-report measures is lacking. Pazzagli et al. (2017) investigated the relationship between the PRFQ and caregiver attachment style using the five subscales of the Attachment Style Questionnaire (ASQ; Feeney et al., 1994): Confidence (e.g. "*Overall, I am a worthwhile person.*"), Relationships as secondary (e.g. "*To ask for help is to admit that you are a failure.*"), The need for approval (e.g., "*It's important to me that others like me.*"), Discomfort with closeness (e.g., "*I find it hard to trust other people.*"), and Preoccupation with relationships (e.g., "*I worry that others won't care about me as much as I care about them.*"). A secure attachment style is characterized by high Confidence scores and low scores on the other subscales. The ASQ subscales can also be classified according to attachment anxiety (about abandonment; Need for Approval and Preoccupation with Relationships) and avoidance (of intimacy; Discomfort with Closeness and Relationships as Secondary). All insecurity subscales were associated with PM among mothers. Discomfort with closeness had a negative association, while The need for approval, Preoccupation with relationships, and Relationships as secondary showed positive associations. IC and CMS were positively correlated with the Confidence subscale, and a negative correlation was found between the IC and the Relationships as a secondary subscale.

According to Rostad and Whitaker (2016), caregivers' attachment avoidance correlated significantly only with CMS and IC, while attachment anxiety was not related to the PRFQ subscales among caregivers of children up to five years of age. According to Luyten et al. (2017), only PM and CMS were associated with attachment avoidance and anxiety among caregivers of children up to five years of age. In sum, there is no consistent association between PRF and a caregiver's adult attachment style, even in samples of parents of children under five years of age, and prior studies did not discuss these associations in depth.

Table 1

The summary of the previous PRFQ validation studies

Study	Sample	Statistical method	Final factor solution	Cronbach's α or McDonald's ω
Lee et al. (2021)	Korean	Exploratory factor analysis	Five factors: three factors similar to the original CMS, IC, PM and two additional PM factors. Shorter PM subscales are problematic.	ω of PM, IC, and CMS = .68, .76, and .82, respectively
Wendelboe et al. (2021)	Danish	Confirmatory factor analysis after removing items 7, 10, and 13	CMS, IC, PM	α of PM, IC, and CMS = .48, .69, and.75, respectively
Ye et al. (2022)	Chinese	Confirmatory factor analysis after removing items 10, 11, 12, 14, 18	CMS, IC, PM	ω of PM, IC, and CMS = .68, .76, and .82, respectively
Pazzagli et al. (2017)	Italien	Confirmatory factor analysis after removing items 6, 11, 14	CMS, IC, PM	α of PM, IC, and CMS = .67 , .62 , and .81, respectively
DeRoo et al. (2019)	Canadian	Confirmatory factor analysis after removing items 11 and 18	CMS, IC, PM	α of PM, IC, and CMS = .91, .88, and .88, respectively
Moreira & Fonseca (2023)	Portuguese	Confirmatory factor analysis	CMS, IC, PM	α of PM, IC, and CMS = .81, .88, and .89, respectively

Note. *CMS* Certainty about Mental States, *IC* Interest and Curiosity, *PM* Pre-Mentalizing

I.5.2. Parental sense of competence

During the past decades, parental cognition has been the focus of parenting research. Parental sense of competence became a widely-studied construct (Johnston & Mash, 1989; Knoche et al., 2007; Deković et al., 2010), including the level of satisfaction with the role of being a parent as well as beliefs about parental efficacy. Parental sense of competence is associated with a wide range of adaptive parenting practices, better parental mental health, and child psychosocial outcomes (for reviews, see de Montigny & Lacharité, 2005; Jones & Prinz, 2005). Furthermore, parental competence is positively related to genuine parental reflective functioning (Gordo et al., 2020; Luyten et al., 2017) and a secure parents' adult attachment style (Nijssens et al., 2018). Previous studies also highlighted the mediator role of parental reflective functioning between parents' adult attachment and parental sense of competence (Nijssens et al., 2018; Burkhart et al., 2017). Furthermore, Nijssens et al. (2018) also found that parental competence was more strongly related to attachment anxiety than attachment avoidance. Previous research also assessed the relationship between maternal attachment style using the pattern by Bartholomew and Horowitz (1991) and maternal self-esteem, which is a closely-related construct to maternal competence (Curran et al., 2021). Secure attachment of the mother was positively associated with self-esteem, while fearful and preoccupied attachment styles had a negative relationship with self-esteem. The maternal dismissive attachment was unrelated to maternal self-esteem. To the best of our knowledge, no previous research assessed the relationship between the attachment styles by Bartholomew and Horowitz (1991) and parental competence.

I.5.3. Parental stress

In the parent-child relationship, the experience of stress is abundant. Attachment insecurities are risk factors that reduce resilience in times of stress and contribute to emotional problems and poor adjustment, especially people with a negative model of self are vulnerable to psychological distress (Bowlby, 1969/1982). Previous studies are inconsistent regarding the relationship between the attachment styles introduced by Bartholomew and Horowitz (1991) and stress (Kemp & Neimeyer, 1999; Pielage et al., 2000). In a study by Pielage et al. (2000), fearful and preoccupied attachment were positively related to the number of stressful events experienced, whereas secure attachment showed a negative relationship with perceived stress. The association between stress and the dismissing category was nonsignificant. Further, in the study by Kemp and Neimeyer (1999), the dismissing group showed the lowest level of distress,

followed by the secure, fearful and preoccupied groups, respectively. The secure and dismissing groups did not differ from each other, and both showed less distress than the preoccupied group. The dismissing group was also characterized by lower levels of distress than the fearful group. The findings are in line with the notion that those with dismissing attachment patterns have a positive perception of themselves and a negative perception of others, so they avoid close relationships so that they remain independent and invulnerable, which results in low levels of anxiety in relationships (Bartholomew and Horowitz, 1991). A previous meta-analysis conducted on adults (Dagan et al., 2020) also indicated that individuals with hyperactivating attachment strategies (i.e., preoccupied) report higher anxiety symptoms than those with deactivating attachment strategies (i.e., dismissing).

Stress also has a major impact on our ability to mentalize: during periods of high stress, explicit mentalization (Allen & Fonagy, 2006) is inhibited, while implicit mentalization is activated (Yatziv et al., 2018). Higher levels of parental reflective functioning (Shai et al., 2017) are also associated with lower levels of parental stress (Luyten et al., 2017; McMahon & Meins, 2012; Rutherford et al., 2013). Furthermore, mentalizing mediates the link between attachment and interpersonal distress (Hayden et al., 2019), while parental stress is also associated with lower levels of perceived parental competence (Gordo et al., 2018; Luyten et al., 2017; McBride, 1989).

1.6. Measurement and Correlates of Reflective Functioning

I.6.1. The Reflective Functioning Questionnaire for Youth

Fonagy et al. (2016) developed The Reflective Functioning Questionnaire (RFQ) to measure adult mentalizing capacity, which consists of 46 items. The questionnaire includes two scales, Scale A and Scale B. The items on Scale B are polar-scored, with higher scores indicating a higher level of reflective function, e.g. „*I believe that people can see a situation very differently based on their own beliefs and experiences*" (1 = strongly disagree – 6 = strongly agree). Scale A is a median scale, with more genuine reflective functions toward the scale's midpoint, while extremely low or high scores reflect a low reflective function (strongly agree and strongly disagree = 2, disagree and agree = 4, disagree somewhat and agree somewhat = 6). This scale indicates that some uncertainty is healthy in mentalizing while being overly confident or having little confidence are both mentalizing difficulties, e.g. „*People's thoughts are a secret to me*". Perkins (2009) conducted an exploratory factor analysis on the adult RFQ, identifying two

conceptually coherent factors: Internal-self (e.g. "*I often get confused about what I am feeling")* and Internal-other (e.g. "*I usually know exactly what other people are thinking")*. The measure was named RFQ-15, consisting of 11 items for Internal-self (Cronbach's α =.75) and four items for Internal-other (Cronbach's α = .63). Further studies with the adult RFQ resulted in an eight-item questionnaire, RFQ-8 (Cronbach's α = .54 - .78), with two subscales: Certainty (RFQ_C, a reversed scored item: *„I don't always know why I do what I do"*) and Uncertainty (RFQ_U, e.g. "*Sometimes I do things without really knowing why"*). The items of the RFQ-8 need to be rescored before calculating the scales. RFQ_C evaluates agreement with statements like "*I don't always know why I do what I do*." so lower scores indicate a more genuine mentalization. For RFQ_C, the original seven-point scale is rescored to 3, 2, 1, 0, 0, 0, 0. Rescoring allows higher scores to represent greater certainty. Conversely, for RFQ_U, items such as "*Sometimes I do things without really knowing why*." were recoded to 0, 0, 0, 0, 1, 2, 3, thereby attributing very high scores to a stance characterized by minimal knowledge about mental states. At present, the RFQ-8 is the most commonly used version of the RFQ.

However, concerns were raised about the RFQ-8, as it may assess a single latent dimension of hypomentalizing, but it is unlikely to be able to identify maladaptive forms of hypermentalizing (Müller et al., 2021). Additionally, some of the RFQ items refer to emotional lability and impulsivity rather than mentalization. As a result of these concerns, Horváth et al. (2023) revised the adult RFQ-8 in a Hungarian adult sample. They removed one item and suggested using Likert-type items instead of median scoring to create RFQ-R-7 (McDonald's ω = .92), which measures hypomentalization, e.g. "*People's thoughts are a mystery to me"* (1 = strongly disagree – 7 = strongly agree).

Sharp et al. (2009) adapted the adult 46-item version of the RFQ for adolescents, creating the Reflective Function Questionnaire for Youth (RFQY) by rephrasing the items to be easier to understand for adolescents, e.g. instead of "*I believe that my parents' behavior towards me should not be explained by how they brought up*" the RFQY contains the following item: "*I believe that my parents' behavior towards me should not be explained by how they were raised*." Results were replicated in a clinical sample of inpatient adolescents. Ha et al. (2013) found a significant negative relationship between the RFQY Total Score and borderline features (APA, 2013) in a clinical sample. Lind et al. (2020) found that only Scale B of the RFQY showed a significant association with externalizing symptoms among inpatient adolescents, while internalizing symptoms were unrelated to the RFQY subscales. Sharp et al. (2021) conducted item response theory analyses to refine RFQY Scale B from a non-clinical sample of adolescents, resulting in a shortened version called RFQY-5 (Cronbach's α = .75).

I.6.2. The role of mentalizing in adolescence

Mental health researchers focus on adolescence since many mental disorders first appear before or during this period (Merikangas et al., 2009; Patton et al., 2014). Psychiatric symptoms in youths are often categorized according to the Internalizing-Externalizing dichotomy (Achenbach, 1966). Externalizing problems encompass aggressive and delinquent behavior, attention problems, and hyperactivity, while internalizing symptoms include anxiety, depression, and somatic complaints (APA, 2013). The presence of psychiatric symptoms alone does not necessarily indicate how an individual is functioning, which may, in some cases, be better indicated by measures such as quality of life (Weitkamp et al., 2013). Quality of life (QOL) is a multidimensional concept that involves not only objective indicators such as living conditions, employment, and education but also subjective assessments of physical, emotional, and social functioning (Wallander et al., 2001). Initially, children's quality of life was primarily measured through survival indicators and measurable negative outcomes, such as mortality (Wallander & Koot, 2016). Over time, it was recognized that the concept of QOL should encompass more than just the absence of negative experiences (Cummins, 1995). One major challenge in studies involving children is the respondent, as according to the literature, the parent's opinion cannot replace that of the child (Kiss et al., 2007).

The capacity to mentalize plays a prominent role in the psychosocial adaptation of adolescents (Clarke et al., 2020). Several studies have demonstrated significant structural and functional changes in adolescents' brains related to their mentalizing abilities (Blakemore, 2008). The mentalizing capacity is closely linked to early attachment relationships, with parental reflective functioning playing a key role in its development (Fonagy et al., 2016). However, during adolescence, there is a shift in the attachment hierarchy as peers' influence increases (Blakemore, 2008). In peer interactions, individuals have the opportunity to engage in more relational exchanges and consider a greater number of perspectives, which require mentalizing abilities (Jewell et al., 2016). Thus, neural development and social experiences are intertwined in a transactional manner.

Internalizing and externalizing problems of youth have been linked to mentalizing difficulties (Halfon et al., 2020; Taubner et al., 2013). Previous studies indicate that internalizing problems are related to both self-mentalizing (Ballespí et al., 2021a; Ballespí et al., 2022) and other-mentalizing (Ballespí et al., 2018) problems. Furthermore, the meta-analysis of Chevalier et al. (2023) highlighted that mentalizing assessed in a relational context is unrelated to internalizing symptoms. Bizzi et al. (2019) conducted a study examining whether

children with somatic symptom disorders (SSD) and disruptive behavior disorders (DBD) exhibit higher rates of difficulties in mentalizing using interviews (APA, 2013). The results showed that the DBD group had the greatest mentalizing difficulties, followed by the SSD group, while the control group had the least mentalizing difficulties.

I.6.3. Mentalizing in the global context of mental health

Previous research has primarily focused on the relationship between mentalizing and specific mental disorders (Fonagy et al., 2016), with only a few studies examining the relationship between mentalizing and global measures of mental health in the context of adolescent psychopathology (Ballespí et al., 2018, 2021b). Viewing mentalizing in a global context rather than within the context of a specific disorder can be beneficial for several reasons. Firstly, Mentalization-Based Treatment (MBT) was initially developed to treat borderline personality disorder (BPD; APA, 2013); however, its adaptations have shown efficacy in treating various mental disorders across different settings (Bateman & Fonagy, 2004). Secondly, considering mental disorders as categorical conditions overlooks the high rates of comorbidities (Merikangas et al., 2009). In response to that, psychiatric disorders were initially explained by three higher-order factors (Internalizing, Externalizing, and Thought Disorders) but explained even better with one General Psychopathology dimension (the p factor), and transdiagnostic approaches are recommended (Caspi et al., 2014). Mentalizing has been proposed as a transdiagnostic factor (Ballespí et al., 2018), and it is a key component of many empirically validated treatments (Bateman & Fonagy, 2004). Ballespí et al. (2018) examined the relationship between mentalizing and mental health from a transdiagnostic perspective and found that mentalizing capacity was not associated with internalizing and externalizing symptoms. However, mentalizing showed robust positive associations with social and role functioning, happiness, self-esteem, resiliency, and transcendence. These findings suggest that mentalizing may positively impact mental health independent of symptoms. However, the authors noted the need for replication using self-reports of psychopathology in adolescents. Additionally, Ballespí et al. (2018, 2021b) found no significant association between the self-other mentalizing polarities and internalizing or externalizing symptoms. However, self-mentalizing was associated with self-esteem and motivation toward life goals, while other-mentalizing was associated with general, social, and role functioning.

II. Aims

Study 1: The adaptation of The Parental Reflective Functioning Questionnaire (0-5) to the Hungarian language and presentation of its psychometric characteristics

This study aimed to translate the Parental Reflective Functioning Questionnaire (0-5) into Hungarian and investigate its three-factor structure. From a theoretical perspective, these three factors refer to relatively distinct features of parental mentalizing (Luyten et al., 2017). In addition, the PRFQ has been validated in various languages, and the majority of studies supported the PRFQ's three-factor structure (Wendelboe et al., 2021; Ye et al., 2022; Pazzagli et al., 2017; DeRoo et al., 2019; Moreira & Fonseca, 2023), therefore confirmatory factor analysis was chosen as the statistical method. The second objective was to assess its relationships with general reflective functioning, attachment dimensions, and caregivers' perceptions of their children among primary caregivers of children up to five years of age. In a previous study, Fonagy et al. (2017) used the PRFQ and RFQ to evaluate convergent validity, therefore we also used the RFQ. Moreover, given that literature suggests PRF's role in the intergenerational transmission of attachment (Fonagy et al., 2023), the study also aimed to explore the relationship between PRF and caregivers' attachment styles, utilizing the Attachment Style Questionnaire (ASQ; Feeney et al., 1994), which had been previously used in Italian validation (Pazzagli et al., 2017). The investigation also measured the association between PRF and object relations, an essential indicator of early parent-child relationships (Danis et al., 2005). The Mothers' Object Relations Scale (MORS; Oates et al., 2018) was used to assess caregivers' representations of their infants in terms of Warmth (e.g. "*My child smiles at me.*") and Invasiveness (e.g. "*My child annoys me*."), as it is a widely used questionnaire in Hungarian.

Study 2: The adaptation of The Parental Reflective Functioning Questionnaire Adolescent Version to the Hungarian language and presentation of its psychometric properties

In this study, we aimed to translate The Parental Reflective Functioning Questionnaire Adolescent Version into the Hungarian language and test its structural validity and internal consistency. As explained in the Aims of Study 1, we aimed to confirm the three-factor solution of the PRFQ.

Study 3: What makes mothers feel competent? The relationship between parental reflective functioning, attachment style, parental competence, and stress

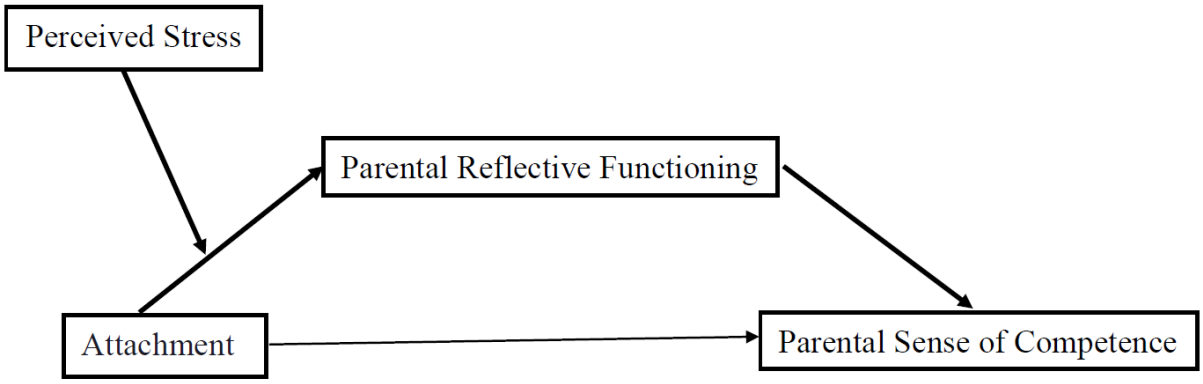
Adolescents face new biological, psychological, and social challenges (Crone & Dahl, 2012; Rudolph, 2002; Zarrett & Eccles, 2006), which impact the quality of the parent-child relationship (Branje, 2018; Mastrotheodoros et al., 2020). As a result, many pieces of research focus on adolescents' outcomes (Colarossi & Eccles, 2003; Shoshani & Steinmetz, 2014; Stewart & Suldo, 2011; Wille et al., 2008), while less is known about the mental health of their parents. Previous studies indicated that parental reflective functioning, attachment, parental sense of competence, and stress are related constructs (Gordo et al., 2018; Luyten et al., 2017; McBride, 1989). However, no study tested these relationships in a community sample of parents of adolescents. Furthermore, previous research regarding the attachment of parents used scales, e.g. anxiety and avoidance (Hayden et al., 2019), instead of attachment styles which incorporate the variations of these scales or got inconsistent results using attachment styles (Kemp & Neimeyer, 1999; Pielage et al., 2000).

This study aimed to explore the relationship between parental reflective functioning, parents' adult attachment, perceived parental sense of competence and stress among mothers of adolescents between the ages of 12 and 18 years. We expected mothers with a secure attachment style to perceive the least stress (Kemp & Neimeyer, 1999; Pielage et al., 2000), the highest level of parental competence (Nijssens et al., 2018) and the most genuine parental reflective functioning (Grienenberger et al., 2005; Pazzagli et al., 2018; Slade et al., 2005a; Zeegers et al., 2017). We also hypothesized the opposite relationships between the study variables and the insecure attachment styles. Furthermore, we also expected that genuine parental reflective functioning is negatively related to stress while positively associated with parental competence (Shai et al., 2017). We also expected parental competence and stress to be negatively related constructs among parents of adolescents (Gordo et al., 2018; Luyten et al., 2017). Based on previous findings highlighting the mediator role of parental reflective functioning between parents' adult attachment and parental sense of competence (Nijssens et al., 2018; Burkhart et al., 2017) and the notion that mentalizing established in the context of attachment relationships (Luyten et al., 2017), we hypothesized that the connection between parents' adult attachment and parental competence is mediated by parental reflective functioning among parents of adolescents. Furthermore, we expected that the connection between parents' adult attachment and mentalizing is moderated by perceived stress, as the

capacity to mentalize depends on the stress level (Luyten et al., 2017; McMahon & Meins, 2012; Rutherford et al., 2013). Our conceptual figure for the moderated mediation model is illustrated in Figure 1.

Figure 1

Conceptual figure for the moderated mediation model



Additionally, we also expected that higher levels of parental sense of competence predict lower levels of perceived stress, as prior studies indicated a negative association between these constructs (Gordo et al., 2018; Luyten et al., 2017; McBride, 1989). We also expected that higher levels of PRF predicted lower levels of stress since prior studies also showed a negative association between these constructs (Luyten et al., 2017; McMahon & Meins, 2012; Rutherford et al., 2013). To the best of our knowledge, no prior studies have examined these relationships among Hungarian mothers of adolescents. However, as both feeling competent and being able to mentalize genuinely are considered factors that contribute to resilience (Masten & Obradović, 2006; Safiye et al., 2023), we expected that these constructs can decrease adolescent's mother's stress levels during this challenging period of time.

Study 4: The Reflective Function Questionnaire for Youth: Hungarian adaptation and evaluation of associations with quality of life and psychopathology

This study aimed to translate the 46-item version Reflective Function Questionnaire for Youth into Hungarian and present its psychometric properties. Contrary to the PRFQ, many versions with different factor structures are used for the RFQ (Perkins, 2009; Sharp et al., 2009; Fonagy

et al., 2016; Sharp et al., 2021; Horváth et al., 2023). We aimed to find the best factor solution, therefore exploratory factor analysis was the chosen method. We also aimed to assess the relationship between mentalizing, demographic characteristics, psychopathology and quality of life. To our best knowledge, quality of life has not been studied in relation to mentalizing capacity among adolescents. However, mentalizing showed robust positive associations with social and role functioning, happiness, self-esteem, resiliency, and transcendence (Ballespí et al., 2018, 2021b) so we hypothesized that higher levels of mentalizing would be associated with improved quality of life. We also expected that higher levels of mentalizing are related to lower levels of psychopathology, as much previous research found mentalizing difficulties in specific mental disorders (Ha et al., 2011; Halfon et al., 2020; Bizzi et al., 2019; Taubner et al., 2013; Ballespí et al., 2021a; Ballespí et al., 2022).

For the reason of clarity, the methods, results and discussion parts are shown per study.

III. Study 1: The adaptation of The Parental Reflective Functioning Questionnaire (0-5) to the Hungarian language and presentation of its psychometric characteristics[1]

III.1. Methods

III.1.1. Participants

A total of 263 mothers completed the PRFQ and the RFQ from a community sample. Among them, 201 mothers also completed the MORS and the ASQ. The mothers' ages ranged from 19 to 49 years (M = 34.63 years, SD = 5.55). Participants were asked to complete the questionnaire packet for a specific child if they had more than one child. Among the respondents, 245 completed the questionnaires for their first child (93.2%), while 18 mothers responded to their additional children (6.8%). Regarding gender distribution, 138 mothers (52.5%) provided responses about their sons and 125 mothers (47.5%) about their daughters. The age of the youngest child was one month, while the oldest was 60 months (M = 27.91 months, SD = 15.80). Other demographic characteristics are presented in Table 2.

Table 2

Demographic characteristics (N = 263)

Demographics		*n* (%)
Residency		
	Capital city	97 (36.9)
	Town	105 (39.9)
	Smaller settlement	61 (23.2)
Economical activity status		
	Employed	65 (24.7)
	Maternal leave	187 (71.1)
	Other (Unemployed, chronically ill, housewife)	11 (4.2)
Level of education		
	Medium level (12 years) and low level (≤ 8 years)	89 (33.8)
	High level (university degree)	174 (66.2)
Perceived financial status		
	Below the average	13 (4.9)
	Average	197 (74.9)
	Above the average	53 (20.2)
Relationship status		
	Married	168 (63.9)
	Partner relationship	62 (23.6)
	Other (single, divorced, window)	33 (12.5)

1 This chapter was written based on the article "The psychometric properties of the Hungarian Parental Reflective Functioning Questionnaire" (Szabó et al., 2023) published in the European Journal of Developmental Psychology.

III.1.2. Measures

Among the demographic variables, we asked about the parent's age, highest level of education, relationship status, place of residence, economical activity, perceived financial status. We also asked about child's gender, age and the place in the sibling order.

The Parental Reflective Functioning Questionnaire (PRFQ; Luyten et al., 2017) comprises eighteen items scored on a Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree) (α = .70 - .82). Further characteristics of the scale are described in the Introduction. The PRFQ was translated into Hungarian by two independent native Hungarian and English authors. After comparing the two versions, a third independent psychologist suggested additional modifications to the item wording. A mother with a medium level of education reviewed the items and proposed minor revisions to enhance questionnaire comprehension. Subsequently, an independent psychologist back-translated the final Hungarian version into English, which was then discussed with the scale developers. Besides the PRFQ, we used validated Hungarian questionnaires.

The Reflective Functioning Questionnaire (RFQ; Fonagy et al., 2016) assesses general mentalizing with eight items scored on a scale from 1 (strongly disagree) to 7 (strongly agree). The questionnaire has two subscales: Certainty about mental states (RFQ_C; α = .63) and Uncertainty about mental states (RFQ_U; α = .77). The Cronbach's α for RFQ_C was acceptable in the current sample (α = .75), whereas the Cronbach's α for RFQ_U fell below acceptable (α = .57). It is important to note that Cronbach's α is influenced by the number of items so that a lower α can be acceptable for shorter subscales (Taber, 2018; Vaske et al., 2017). Furthermore, Uncertainty is a more pathological aspect of mentalizing, and measuring it in a community sample could explain the lower Cronbach's α (Fonagy et al., 2016).

The Mothers' Object Relations Scale (MORS; Oates et al., 2018) is a 14-item questionnaire scored from 0 (never) to 5 (always), evaluating caregivers' perceptions of their infants in terms of Warmth (α = .79) and Invasiveness (α = .71). The MORS exhibited acceptable Cronbach's α in the present study (α = .76 - .82).

The Attachment Style Questionnaire (ASQ; Feeney et al., 1994) comprises 40 items scored from 1 (strongly disagree) to 6 (strongly agree) and includes five scales (α = .65 – .74, Hámori et al., 2016). In our sample, the Cronbach's α values for the subscales were acceptable (α = .71 – .86). Further characteristics of the scale are described in the Introduction.

III.1.3. Statistical analysis

Data were analyzed using Jamovi (The jamovi project, 2022) and IBM SPSS 22 (IBM Corp., 2011). We aimed to collect data from a minimum of 200 participants to reach the minimum sample size needed for factor analytic studies (Kyriazos, 2018). Initially, we assessed the original three-factor structure of the PRFQ through confirmatory factor analysis with robust maximum likelihood estimation to account for deviations from multivariate normality assumptions. We considered several fit indices with the following limits (Brown, 2015): the root means square error (RMSEA; ≤ .06 good, ≤ 0.08 acceptable) with a 90% confidence interval (90% CI), the Comparative Fit Index (CFI; ≥ .95 good, ≥ .90 acceptable), the Tucker-Lewis Index (TLI; ≥ .95 good, ≥ .90 acceptable), Standardised Root Mean Square Residual (SRMR; ≤ .05 good, ≤ 0.08 acceptable). Next, we assessed the relationship between demographic variables and the PRFQ subscales. Subgroups with very low case numbers (< 5%) were merged into new categories. The skewness and kurtosis were between ±1 in the case of the scales, indicating that a parametric test could be conducted (Bulmer, 1979). There were no outliers. The significance level was set at an α-level of .05, using Bonferroni correction for multiple comparisons. We used a set of independent sample t-tests to compare the difference in the mean of the scales by dichotomous demographic variables. We also used a series of one-way ANOVAs to assess the scales's means by the categorical demographic variables. The association between scales were measured by Pearson's correlation analysis.

III.1.4. Procedure

The research was approved by the Faculty of Education and Psychology's Research Ethics Committee of Eötvös Loránd University (reference Nr: 2021/267-2). This study utilized an online questionnaire system (Qualtrics, 2020) for data collection. The sample was recruited from toddler-parent groups and forums on social media through volunteer sampling. The data collection took place in the fall of 2020. Participants were informed about the principles of anonymity and confidentiality, and their written consent was obtained. We provided accurate information about the purpose of the research. No compensation was provided for participating in the study. Filling out was voluntary and anonymous and could be cancelled anytime. Completing the questionnaire after informed consent took approximately thirty minutes. The inclusion criteria required participants to be primary of a child up to the age of 60 months. However, only two fathers completed the questionnaire packet and were consequently excluded from the analyses.

III.2. Results

III.2.1. Structural validity

The fit indices of the initial three-factor model were not acceptable, even after adding correlations between error covariances (Table 3). Item 18 did not significantly load on the IC factor (p = .116). The modification indices indicated that item 11 cross-loaded on the IC and PM factors. Next, these two items were omitted from the subsequent CFA. As the RMSEA was unacceptable, we added correlations between error covariances among items that belonged to the same factor, had similar wording in Hungarian, and had residual covariances above 10. The model fit became acceptable (Figure 2).

The CMS and IC were positively associated, while the PM was independent of the other factors. Except for some items of the PM factor, all the item-total correlations were above .40 (Table 4). The standardized factor loadings were also low in the case of the PM, while in the case of the CMS and IC, the standardized factor loadings were high (Figure 2). Additionally, we examined Pearson's inter-item correlation coefficients per factor. The Pearson correlation coefficients were large for the CMS and IC items (Table 5). In the case of the PM, however, the coefficients were generally small (Table 6). Estimates of Cronbach's α were good for the CMS subscale (α = .90) and IC (α =.95), while the Cronbach's α of the PM was lower (α = .60). With the removal of more items, Cronbach's α would decrease. Furthermore, based on the standardized factor loadings (>.5), we could only keep two PM items, so we decided to keep the whole scale instead.

Table 3

The results of the confirmatory factor analyses (N = 263)

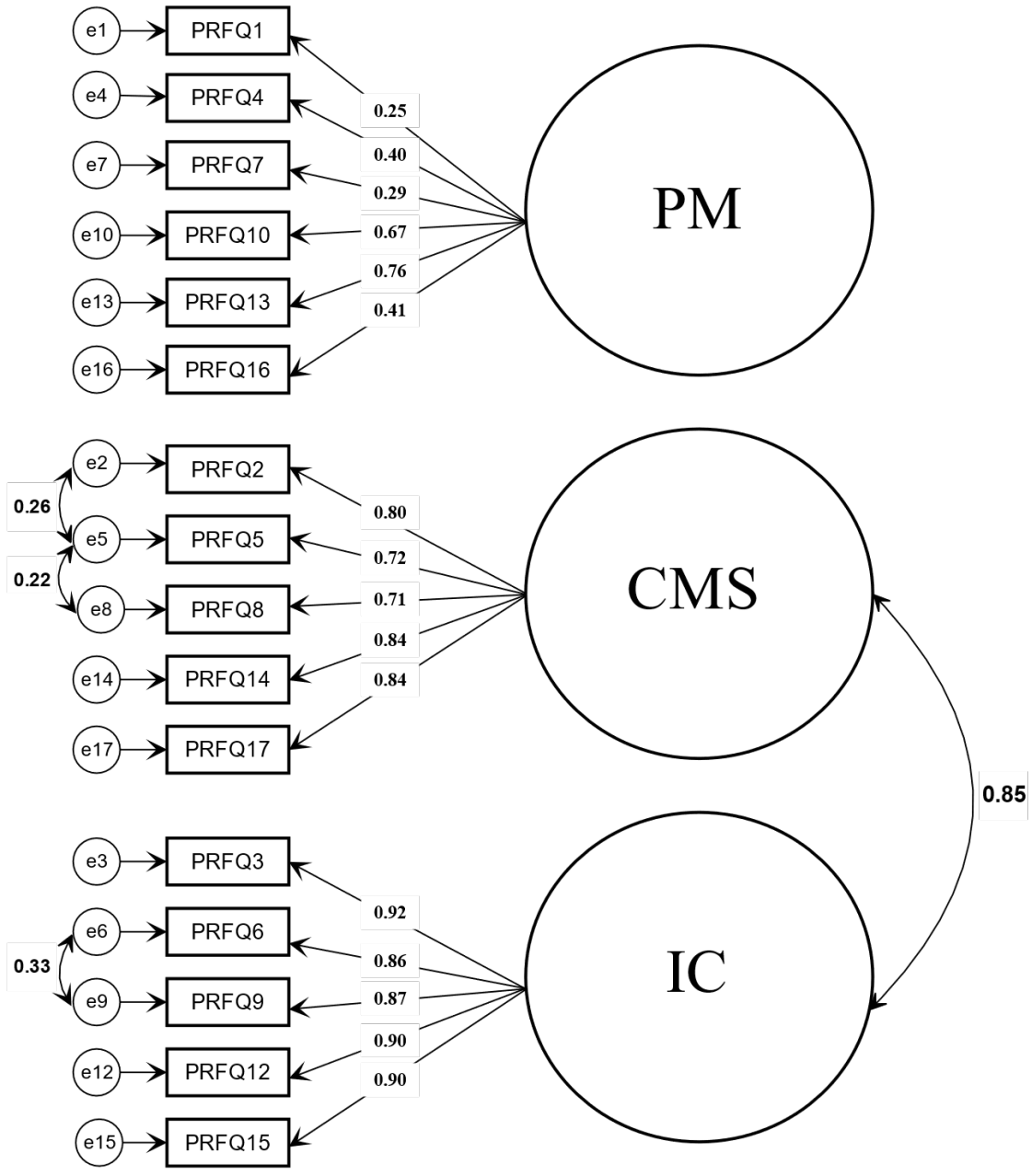
Model		*df*	RMSEA	CI 90% RMSEA	CFI	TLI	SRMR	α_{CMS}	α_{IC}	α_{PM}
Three factors with 18 items	494.976*	132	0.102	0.093 - 0.112	0.872	0.852	0.102	.78	.91	.60
Three factors with 18 items adding correlations between error covariances	404.529*	127	0.092	0.081 - 0.101	0.902	0.883	0.096	.78	.91	.60
Three factors with 16 items	282.188*	101	0.083	0.071 - 0.094	0.931	0.919	0.073	.90	.95	.60
Three factors with 16 items adding correlations between error covariances	237.335*	98	0.074	0.062 - 0.085	0.947	0.935	0.068	.90	.95	.60

Note. CMS Certainty about Mental States factor, *IC* Interest and Curiosity factor, *PM* Pre-Mentalizing factor.

* $p < .001$

Figure 2

The final factor structure of The Parental Reflective Functioning Questionnaire Hungarian Version



Note. N = 263. Confirmatory factor analysis robust maximum likelihood estimation. *CMS* Certainty about Mental States factor, *IC* Interest and Curiosity factor, *PM* Pre-Mentalizing factor. Rectangles indicate measured variables, while small circles indicate error terms. Bold estimates are statistically significant ($p < .05$). Standardized factor loadings are shown.

Table 4

Descriptive statistics and item-total correlations of The Parental Reflective Functioning Questionnaire items (N = 263)

	Mean(*SD*)	Corrected item-total correlation	A if item deleted
Certainty about Mental States			
2 I always know what my child wants.	4.03(1.76)	.77	.87
5 I can completely read my child's mind.	3.37(1.67)	.75	.88
8 I can always predict what my child will do.	3.59(1.72)	.70	.89
14 I always know why I do what I do to my child.	5.38(1.89)	.73	.88
17 I always know why my child acts the way he or she does.	4.01(1.77)	.79	.86
Pre-Mentalizing			
1 The only time I'm certain my child loves me is when he or she is smiling at me.	1.46(1.11)	.23	.56
4 My child cries around strangers to embarrass me.	1.25(0.77)	.28	.54
7 I find it hard to actively participate in make believe play with my child.	2.34(1.63)	.31	.56
10 My child sometimes gets sick to keep me from doing what I want to do.	1.16(0.59)	.40	.52
13 When my child is fussy he or she does that just to annoy me.	1.24(0.71)	.40	.50
16 Often, my child’s behavior is too confusing to bother figuring out.	1.94(1.23)	.43	.46
Interest and Curiosity			
3 I like to think about the reasons behind the way my child behaves and feels.	5.49(2.06)	.89	.94
6 I wonder a lot about what my child is thinking and feeling.	5.14(2.04)	.86	.94
9 I am often curious to find out how my child feels.	5.62(2.06)	.86	.94
12 I try to see situations through the eyes of my child.	5.16(1.97)	.87	.94
15 I try to understand the reasons why my child misbehaves.	5.36(2.06)	.86	.94

Table 5

Pearson's inter-item correlation coefficients of the CMS and IC scales

	CMS						IC				
	PRFQ2	PRFQ5	PRFQ8	PRFQ14	PRFQ17		PRFQ3	PRFQ6	PRFQ9	PRFQ12	PRFQ15
PRFQ2	—					PRFQ3	—				
PRFQ5	.695*	—				PRFQ6	.804*	—			
PRFQ8	.603*	.633*	—			PRFQ9	.802*	.828*	—		
PRFQ14	.644*	.595*	.543*	—		PRFQ12	.817*	.796*	.785*	—	
PRFQ17	.683*	.632*	.641*	.715*	—	PRFQ15	.847*	.747*	.761*	.816*	—

Note. CMS Certainty about Mental States, *IC* Interest and Curiosity

* $p < .001$

Table 6

Pearson's inter-item correlation coefficients of the Pre-Mentalizing items

	PRFQ1	PRFQ4	PRFQ7	PRFQ10	PRFQ13	PRFQ16
PRFQ1	—					
PRFQ4	.226**	—				
PRFQ7	.091	.066	—			
PRFQ10	.137*	.235**	.235**	—		
PRFQ13	.156*	.315**	.139*	.537**	—	
PRFQ16	.170**	.166**	.374**	.204**	.295**	—

Note. * $p < .05$, ** $p < .01$

III.2.2. Convergent validity: associations with general mentalizing

Only Pre-Mentalizing modes were significantly associated with the severe general mentalizing impairments measured by the RFQ subscales. As expected, the RFQ Certainty subscale had a negative relationship with PM, while the Uncertainty subscale had a positive relationship with PM (Table 7). Both associations represented medium effect sizes. The other PRFQ subscales were not significantly related to the general mentalizing impairment subscales.

III.2.3. Associations with the demographic variables

The mothers' economic activity status was associated with PRFQ_IC (Table 8). The effect size was small. Actively working mothers and mothers on maternal leave showed more IC than unemployed, chronically ill, and housewife mothers. The other demographic characteristics were not significantly related to the study variables.

III.2.4. Associations with parents' adult attachment

The IC was unrelated to the parents' adult attachment subscales (Table 9). However, CMS had a weak positive relationship with the Confidence subscale, the only "secure" scale. CMS was also negatively correlated with The need for approval and Preoccupation with relationships scales; the effect sizes were weak. PM correlated negatively with the Confidence subscale and positively with all the "insecure" subscales. The effect sizes ranged from small to medium.

III.2.5. Associations with object relations

The Warmth was positively related to the CMS and IC while negatively related to PM (Table 9). The effect size was small in the case of the IC and medium in the case of the PM and CMS. The Invasiveness showed the opposite relationship, except that it was unrelated to IC. The effect size was medium in the case of the CMS and large in the case of the PM.

Table 7

Descriptive statistics, reliabilities and bivariate relationships (Pearson's correlation coefficients) of study variables (N = 263)

	Min	Max	Mean	*SD*	Skewness	Kurtosis	α	1	2	3	4	5
1. RFQ_C	0	3	1.43	0.79	0.31	-0.88	.75	—				
2. RFQ_U	0	2.83	0.42	0.45	0.72	-0.04	.57	-.61*	—			
3. PRFQ_CMS	1	7	3.87	1.49	-0.45	-0.53	.90	.05	-.07	—		
4. PRFQ_IC	1	7	5.35	1.9	0.34	-1.26	.95	-.07	.10	.77*	—	
5. PRFQ_PM	1	5.5	1.56	0.6	0.86	0.84	.60	-.39*	.32*	.01	.10	—

Note. RFQ_C The Reflective Functioning Questionnaire Certainty about mental states subscale, *RFQ_U* The Reflective Functioning Questionnaire Uncertainty about the mental states subscale, *PRFQ* The Parental Reflective Functioning Questionnaire, *CMS* Certainty about Mental States, *IC* Interest and Curiosity, *PM* Pre-Mentalizing.

* $p < .01$ ($\alpha = .05/5$, using Bonferroni correction)

Table 8

One-way ANOVA with Bonferroni post hoc group comparison of PRFQ_IC in relation to the activity status (N = 263)

Measure	1. Active		2. Maternal leave		3. Other		$F(2, 260)$	η^2	Post Hoc Test (Bonferroni)		
									Group comp.	Mean diff.	*p*
	M	*SD*	*M*	*SD*	*M*	*SD*					
PRFQ_IC	564.84	368.87	472.38	380.95	175.42	337.80	5.28*	.04	1 vs 2	92.46	.27
									1 vs 3	389.42	.005
									2 vs 3	296.96	.04

Note. PRFQ_IC The Parental Reflective Functioning Questionnaire Interest and Curiosity subscale

* $p = .006$

Table 9

Descriptive statistics, reliabilities and bivariate relationships (Pearson's correlation coefficients) of study variables (n = 201)

	Min	Max	Mean	*SD*	Skewness	Kurtosis	α	1	2	3	4	5	6	7	8	9	10
1. PRFQ_CMS	1.40	7	4.33	1.08	-0.14	-0.02	.79	—									
2. PRFQ_IC	2.60	7	6.05	0.85	-0.97	0.71	.73	.35**	—								
3. PRFQ_PM	0	0.74	0.18	0.14	0.49	0.04	.51	-.30**	-.19**	—							
4. RS	7	32	16.40	5.58	0.40	-0.31	.71	-.13	-.02	.36**	—						
5. NA	7	42	19.58	7.18	0.77	0.14	.80	-.23**	-.14	.38**	.33**	—					
6. DC	12	57	35.28	9.73	0.12	-0.63	.86	-.13	.06	.18**	.51**	.33**	—				
7. PR	8	48	26.85	8.74	0.20	-0.68	.83	-.21**	-.07	.36**	.32**	.61**	.36**	—			
8. CR	11	48	32.99	7.70	-0.48	-0.04	.83	.28**	.13	-.28**	-.46**	-.52**	.68**	-.54**	—		
9. MORS-W	25	42	36.45	4.16	-0.66	-0.18	.82	.35**	.21**	-.48**	-.27**	-.25**	-.20	-.28**	.34**	—	
10. MORS-I	8	33	17.20	4.73	0.70	0.43	.76	-.34**	-.08	.57**	.28**	.30**	.27**	.41**	-.31**	-.36**	—

Note. N = 201. *PRFQ* The Parental Reflective Functioning Questionnaire, *CMS* Certainty about Mental States, *IC* Interest and Curiosity, *PM* Pre-Mentalizing, *RS* Relationships as secondary, *NA* The need for approval, *DC* Discomfort with closeness, *PR* Preoccupation with relationships, *CR* Confidence *MORS-I* Mothers' Object Relations Scales Short-Form Invasiveness subscale *MORS-W* Mothers' Object Relations Scales Short-Form Warmth subscale

* $p < .005$ (α = .05/10, using Bonferroni correction.)

III.3. Subdiscussion

The primary objective of this study was to adapt The Parental Reflective Functioning Questionnaire (0-5) to the Hungarian language. Confirmatory factor analysis confirmed the three-factor structure after the removal of two items. This exclusion of items is in line with previous research; for instance, Pazzagli et al. (2017) also removed item 11 from the Italian PRFQ, while Ye et al. (2022) and DeRoo et al. (2019) omitted items 11 and 18 in the Chinese and Canadian validation studies. Notably, items 11 and 18 are the sole reversed items in the PRFQ. As the literature indicates, the inclusion of both positively and negatively worded items can introduce difficulties, potentially measuring distinct underlying constructs (Weems & Onwuegbuzie, 2001).

The Cronbach's α values for CMS and IC were found to be excellent. In contrast, the Pre-Mentalizing subscale displayed a notably lower Cronbach's α. Our findings are in accordance with prior research, where overall, Cronbach's α or McDonald's ω was acceptable for CMS and IC in previous validation studies but exhibited low values for PM in Chinese, Korean, and Danish samples (Ye et al. 2022 Lee et al., 2021; Wendelboe et al., 2021). It is important to consider that lower α values can still be acceptable for shorter subscales (Taber, 2018; Vaske et al., 2017). Furthermore, Pre-Mentalizing represents the most maladaptive facet of parental mentalizing captured by the PRFQ and thus might be more challenging to rate for mothers in a community sample (Luyten et al., 2017). It is also possible that the low Cronbach's α, item-total correlations and standardized factors loadings reflect the complexity of the PM subscale (Wendelboe et al., 2021). Item 1, "*The only time I'm certain my child loves me is when he or she is smiling at me.*", may reflect a teleological stance, which is excessively external. Likewise, a pretend mode of mentalizing, that is, seeing mental states as separate from reality, may be better captured by item 4, "*My child cries around strangers to embarrass me.*", item 10, "*My child sometimes gets sick to keep me from doing what I want to do*", and item 13, "*When my child is fussy he or she does that just to annoy me*.". Items 7, "*I find it hard to actively participate in make-believe play with my child.*", and 16, "*Often, my child's behaviour is too confusing to bother figuring out*." may indicate a complete disengagement from the mental world. Pearson's inter-item correlation coefficients for PM items were also mainly small, supporting the hypothesis that the items indicate different modes of Pre-Mentalizing. However, further replication of these findings and qualitative research is needed before any substantial conclusions can be drawn about potential differences in the meaning of these items. Upon removing more items from PM, Cronbach's α would decrease, and based on the standardized

factor loadings, we could only keep two PM items, so we decided to keep the entire scale. Using the PM with fewer items has also been demonstrated to be problematic (Lee et al., 2021).

Those with a low level of education and younger caregivers were expected to demonstrate a higher level of Pre-Mentalizing (Luyten et al., 2017). However, only the mothers' economic activity status was associated with IC, and the effect size was small. Actively working mothers and mothers on maternal leave showed more IC than unemployed, chronically ill, and housewife mothers. In the original study, the number of working days was positively associated with IC (Luyten et al., 2017); however, we did not hypothesize this relationship as we measured economic activity status instead of the working day. Since increased stress levels are associated with a decreased mentalizing capacity (Fonagy et al., 2023), stress levels among unemployed and chronically ill mothers may affect their mentalizing capacity. As a result of the COVID pandemic, kindergartens and nurseries were closed, and there were many uncertainties; therefore, chronic illness or unemployment could be even more stressful, and being home all the time, not by choice, and spending excessive amounts of time with their children could make them less interested in their children's mental states. We suggest that mentalizing-based interventions should focus on unemployed, chronically ill, and housewife mothers.

The RFQ_C and PM subscales were expected to have a negative correlation. In addition, we hypothesized that RFQ_U was positively correlated with PM and negatively correlated with CMS (Fonagy et al., 2016). In our study, the RFQ_C had a negative relationship with PM, while the RFQ_U had a positive relationship with PM. Both associations represented medium effect sizes. The current study's results align with previous research on the relationship between RFQ and PRFQ, indicating that these constructs are different and that measuring them separately is warranted (Luyten et al., 2017). Taken together, these findings are consistent with the assumption that the RFQ was developed to assess severe impairments in mentalizing (Fonagy et al., 2016), similar to the PRFQ PM subscale, but does not tap into potentially more positive features of mentalizing, such as Interest and Curiosity and Certainty about Mental States.

In view of the fact that object relations are an essential indicator of early parent-child relationships, as well as parental mentalizing plays a role in the transmission of attachment across generations, we expected associations between the PRFQ and the MORS (Oates et al., 2018). A positive correlation was hypothesized between Warmth and IC, and a negative correlation was hypothesized between Invasiveness and IC. It was expected that the MORS subscales and PM would exhibit opposite patterns (Luyten et al., 2017). The Warmth perception was positively related to the CMS and IC while negatively related to the Pre-Mentalizing. The effect size was small in the case of the IC and medium in the case of the PM and CMS. The

Invasiveness showed the opposite relationship, except that it was unrelated to the IC. The effect size was medium in the case of the CMS and large in the case of the PM. Consequently, our findings are consistent with prior studies indicating that parental mentalizing is associated with the quality of early parent-infant attachment (Fonagy et al., 2022). Nevertheless, IC was not related to perceptions of Invasiveness. Considering that invasiveness is the more pathological aspect of object relations, it may provide insight into the mother's internal world more than her child's behaviour, as indicated by the literature (Danis et al., 2012). When observing the invasiveness of a baby, mothers may be unaware of the baby's emotions (CMS, Why is the baby acting this way?) or prementalize them (PM, The baby does this to annoy me), which speaks more about the mother than the child. The perception of invasiveness is independent of interest, since the mother's own attachment history is more important when perceiving a child's negative emotions (Slade et al., 2004). In sum, in the case of the invasiveness perception, self-mentalizing captured by CMS and PM is needed. However, in order to notice warmth, such as a smile, a mother must be interested in the child, so to perceive positive emotions self, other and self-other mentalizing are also required, which can be captured by all three subscales. It is worth also noting that we expected the associations based on Luyten et al. (2017). However, they measured the infant-mother attachment using the Strange Situation Procedure (Ainsworth et al., 1978), an objective measure, so the differences might be due to using the self-report MORS, as it relies on the mother's perception only. As a consequence of these associations of parental reflecting functioning, interventions targeting this skill set are widely used (Slade, 2005; Slade et al., 2005b).

The PM was expected to be associated negatively with insecure parents' adult attachment scales, while Confidence was predicted to be positively correlated with CMS and IC (Pazzagli et al., 2017). A negative correlation was also expected between the IC and the Relationships as a secondary subscale. In our study, the IC subscale was unrelated to the attachment subscales. The CMS was positively related to the "secure" subscale and negatively correlated with The need for approval and Preoccupation with relationships scales; in line with the prior study, the effect sizes were weak (Pazzagli et al., 2017). As CMS measures the certainty of a child's mental state, it is not surprising that it is associated only with scales that measure attachment anxiety rather than avoidance. Consequently, higher scores on the CMS are more negatively associated with excessive focus on others as measured by the ASQ because higher scores on the CMS indicate more genuine certainty in the child's mental experience. Pre-Mentalizing had a negative relationship with the Confidence subscale and positive relationships with all the "insecure" subscales. The effect sizes ranged from small to medium, similar to the

study by Pazzagli et al. (2017). Thus, our results indicate that among Hungarian mothers of children up to five years of age, Pre-Mentalizing is even more critical, as it is also associated with the security of the mothers' attachment besides all the insecurity dimensions. The lack of association between the IC and the caregiver's adult attachment style is consistent with previous studies conducted on parents of children under five years of age (Luyten et al., 2017; Rostad and Whitaker, 2016). However, Pazzagli et al. (2017) found a positive correlation between the IC and CMS with the Confidence subscale and a negative correlation between the IC and Relationships as a secondary subscale. Nevertheless, Pazzagli et al. (2017) measured the PRF of parents of school-aged children, so there may be age-dependent differences in the role of the PRF. Based on the associations between the object relation scales and PRF, the CMS and PM scales are more focused on the self, whereas the IC scale is more focused on the other. In the early stages of attachment, caregivers might need to understand their own attachment history to mentalize the child properly (Fonagy et al., 1998) as in the early stages, parents' image of their child is shaped by their own inner world (Danis et al., 2012; Madigan et al., 2015). Later, the attachment relationship changes. Children move into the partnership stage of attachment as they age, and their internal working model becomes more sophisticated. In addition, they become more active, and their verbal communication also improves. During these years, parents are expected to be attentive to their children's thoughts and emotions in addition to understanding their own attachment history. Consequently, in the first few years, self-mentalizing might be the most important dimension of PRF (captured by CMS and PM), while later on there might be an increase in the importance of self-, other-, and self-other mentalizing (captured by CMS, PM and IC).

Taken together, as a result of low Cronbach's alpha, item-total correlations, and factor loadings, we considered removing the PM factor. These psychometric weaknesses, however, may be due to the complexity of the scale, as each item represents a different mentalizing difficulty (Wendelboe et al., 2021) and its pathological aspect (Luyten et al., 2017). Therefore, maybe they are not even limitations at all. Despite this, the PM was the only scale of the PRFQ that was related to all study variables, including parents' adult attachment, object relations, and general mentalizing. As a result, our results also suggest that this scale might be the most important domain of PRF among Hungarian mothers, which was why it was decided to retain it.

This study is not without limitations. Considering the cross-sectional nature of this study, future studies should replicate our findings using longitudinal designs. This study also relied on self-report measures only, which might involve reporting bias. There is also a need to

further validate these findings among fathers and in clinical samples as well. The study only investigated structural and convergent validity but did not investigate other forms of validity, i.e., discriminant, predictive, and test-rest reliability.

Despite these limitations, our study provides the first preliminary evidence for the factor structure of the Hungarian PRFQ.

IV. Study 2: The adaptation of The Parental Reflective Functioning Questionnaire Adolescent Version to the Hungarian language and presentation of its psychometric properties[2]

IV.1. Methods

IV.1.1. Sample

In our cross-sectional study, we analyzed the data of two hundred and forty mothers from a community sample between the ages of 27 and 52 (*M* = 44.00 yrs, *SD* = 4.89). The highest education attained by three respondents was primary school (1.3%); 82 mothers had a secondary school degree (34.2%), while 155 persons had a college or university degree (64.6%). Among the mothers, 118 (49.2%) completed the questionnaire package for their sons, while 122 (50.8%) for their daughters. The youngest child was 12, while the oldest was 18 years old (*M* = 14.39 yrs, *SD* = 1.85). Table 10 shows the additional demographic characteristics of the sample.

2 This chapter was written based on the article "*The adaptation of The parental reflective functioning questionnaire adolescent version to the Hungarian language and presentation of its psychometric characteristics*" (Szabó et al., 2022) published in the Psychiatria Hungarica.

Table 10

Demographic characteristics (N = 240)

Demographics	*n* (%)
Relationship status	
Married	152 (63.3)
Partner relationship	43 (17.9)
Single, divorced or widow	45 (18.8)
Residency	
Capital town	65 (27.1)
Town	122 (50.8)
Smaller settlement	53 (22.1)
Economical activity status	
Employed	208 (85.4)
Unemployed, housewife or on maternal leave	35 (14.6)
Perceived financial status	
Below the average	19 (7.9)
Average	179 (74.6)
Above the average	42 (17.5)
Number of children	
One	80 (33.3)
Two	96 (40)
Three or more	64 (26.7)
Child's place in the sibling order	
First	106 (44.2)
Second or more	134 (12.9)
Current education of the adolescent	
Grammar-school	81 (33.8)
Secondary technical school, vocational school or professional school	45(18.7)
Primary school	114 (47.5)

IV.1.2. Measures

Among the demographic variables, we asked about the parent's age, highest education, marital status, place of residence, economic activity, financial situation and number of children. We also asked about the gender, the place in the sibling order and the current education of the adolescent.

The adolescent version of the Parental Reflective Function Questionnaire (Luyten et al., 2017) is a self-report measure of parental mentalizing with eighteen items on a seven-point Likert scale (1 = strongly disagree – 7 = strongly agree) (Cronbach α = .70 – .82). Further characteristics of the scale are described in the Introduction. The original authors gave their

written consent to adapt the questionnaire into Hungarian. Two independent translators translated The English version into Hungarian. After comparing the translations, a mother with a medium level of education reviewed the items and proposed minor revisions to enhance questionnaire comprehension. A third independent translator translated it into English. We sent the original, Hungarian and retranslated versions back to the original authors, and they did not recommend any changes.

IV.1.3. Data analysis

During the analyses, we used the Jamovi (The jamovi project, 2022) and IBM SPSS Statistics 22 (IBM Corp., 2011) programs. We collected data from a minimum of 200 participants for factor analysis (Kyriazos, 2018). In order to confirm the original three-factor structure, we conducted a confirmatory factor analysis. The following fit indices were considered (Brown, 2015): the root means square error (RMSEA; ≤ .06 good, ≤ 0.08 acceptable) with a 90% confidence interval (90% CI), the Comparative Fit Index (CFI; ≥ .95 good, ≥ .90 acceptable), the Tucker-Lewis Index (TLI; ≥ .95 good, ≥ .90 acceptable). After the confirmatory factor analysis, we performed a principal axis factoring with oblimin rotation following the guidelines of Field (2013). We assessed the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (0.8 - 1.0 adequate sampling, 0.7 - 0.79: middling, 0.6 - 0.69: mediocre, less than 0.6: the sampling is not adequate, less than 0.5: the results of the factor analysis are not suitable for the data; Kaiser, 1974). A significant Bartlett's Test of Sphericity indicates that the factor analysis may be worthwhile for the data set (Shrestha, 2021). The determinant of the correlation matrix should be greater than 0.00001 (Field, 2013). During the analysis, we suppressed factor loadings less than 0.3 (Field, 2013). We considered factor loadings above 0.4 stable (Guadagnoli and Velicer, 1988) and high crossloadings between factors by the ratio of loadings being greater than 75%. We aimed to find factors with at least three non-cross-loading items and stable loading scores. We also assessed Cronbach's αs of the scales.

Next, we examined the relationship between demographic variables and PRFQ subscales. Those subgroups with very low case numbers (< 5%) were merged into new categories. For the scales, both skewness and kurtosis were between 1, indicating that a parametric test could be conducted (Bulmer, 1979). There were no outliers. The significance level was set at an α-level of .05, using Bonferroni correction for multiple comparisons. The difference in the mean of the scales by dichotomous demographic variables was compared using independent sample t-tests. Furthermore, we conducted a series of one-way ANOVAs in order

to determine differences in the means of the scales based on the categorical demographic variables. Using Pearson's correlation analysis, the association between scales was measured.

IV.1.4. Procedure

The Faculty of Education and Psychology's Research Ethics Committee of Eötvös Loránd University approved the research (reference Nr: 2020/341). We conducted this study following the Declaration of Helsinki. Using an online questionnaire package (Qualtrics, 2020), we examined a community sample of parents with children aged 12-18. The data collection took place in the fall of 2020. We distributed the questionnaire mainly in parents' internet groups and collected additional respondents online using the snowball method. Completing the questionnaire after informed consent took approximately thirty minutes. We provided accurate information about the purpose of the research. There was no deception. Filling out was voluntary and anonymous and could be cancelled anytime. Any of the caregivers could fill out the questionnaire, but only ten fathers participated as opposed to 240 mothers, so we finally decided to exclude fathers from the analysis.

IV.2. Results

IV.2.1. Confirmatory factor analysis

Confirmatory factor analysis was used to examine the original three-factor structure on a Hungarian sample. The fit indices of the model were not acceptable on our data (χ^2 =249.38, *df* = 132, $p < .001$, $\chi^2/df = 1.89$, CFI = 0.862, TLI = 0.841, RMSEA = 0.061 (90% CI 0.049-0.073), and the fit could not be improved either by adding covariates or by omitting poorly fitting items.

IV.2.2. Principal axis factoring

After the confirmatory factor analysis, we performed a Principal axis factoring with oblimin rotation. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .789 indicating a middling sampling. The Bartlett's Test of Sphericity was significant ($p < .001$), highlighting that the factor analysis may be appropriate/suitable for the data set. The determinant of the correlation matrix was 0.015.

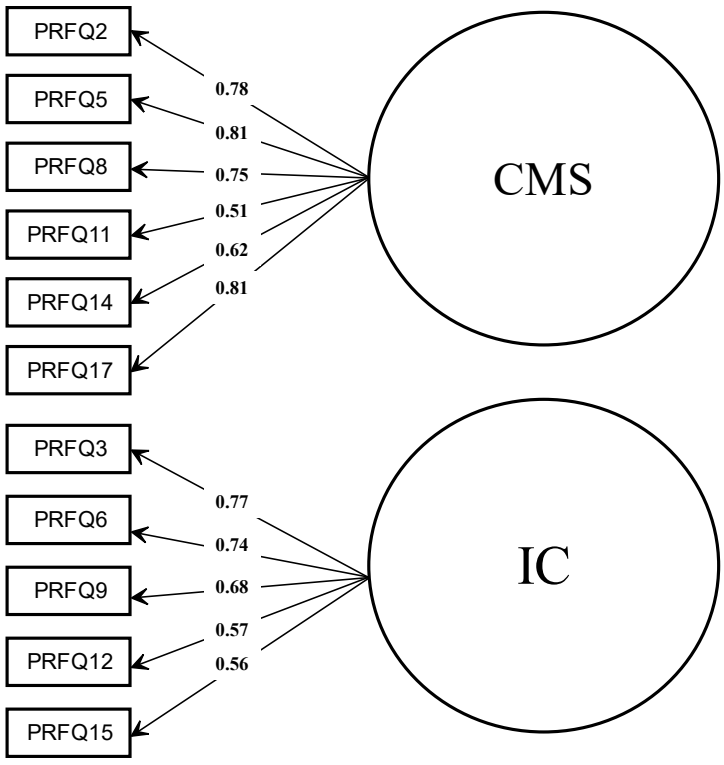
Items one, seven, ten, thirteen and eighteen and item four were omitted because of the small factor loadings. We also removed item sixteen, as retaining this item lowered the

Cronbach's α coefficient (Cronbach's α = .61). The analysis resulted in two factors with an eigenvalue greater than one. In the final model, the eigenvalues of the two factors were 3.37 and 2.16, respectively, the explained variance was 29.5% and 20.7%, a total of 50.2%. These factors corresponded to the subscales of CMS and IC of the original questionnaire. The final factor structure of the Hungarian sample is illustrated in Figure 3.

The Cronbach's α of the CMS was good (Cronbach's α = .81), while Cronbach's α of the IC was acceptable (Cronbach's α = .70). The descriptive statistics of the PRFQ-A items are shown in Table 11. All the factor loading were above .5, and except for two items, the item-total correlations were above .4. The removal of item fifteen would have decreased the Cronbach's α coefficients while removing item eleven would have only increased the Cronbach's α by .2. Therefore, we decided to keep all of the items.

Figure 3

The final factor structure of The Hungarian Parental Reflective Functioning Questionnaire Adolescent Version (N = 240)



Note. *CMS* Certainty about Mental States. *IC* Interest and Curiosity. Principal axis factoring with oblimin rotation. Original item numbers are shown.

IV.2.3. Bivariate relationships

The IC and the CMS were positively associated (r = .48, p < .001), and the effect size was medium. The PRFQ-A showed no significant association with the demographic variables.

Table 11

Descriptive statistics and item-total correlations of The Hungarian Parental Reflective Functioning Questionnaire Adolescent Version items (N = 240)

	Mean (*SD*)	Corrected item-total correlation	α if item deleted
Certainty about Mental States	26.65	—	—
2. I always know what my child wants.	4.63 (1.54)	.63	.76
5. I can completely read my child's mind.	3.87 (1.66)	.67	.75
8. I can always predict what my child will do.	4.32 (1.53)	.61	.77
11. I can sometimes misunderstand the reactions of my child.	4.19 (1.86)	.35	.83
14. I always know why I do what I do to my child.	5.12 (1.61)	.48	.79
17. I always know why my child acts the way he or she does.	4.52 (1.76)	.67	.75
Interest and Curiosity	30.43	—	—
3. I like to think about the reasons behind the way my child behaves and feels.	6.2 (1.29)	.58	.59
6. I wonder a lot about what my child is thinking and feeling.	5.74 (1.55)	.49	.64
9. I am often curious to find out how my child feels.	6.31 (1.16)	.43	.66
12. I try to see situations through the eyes of my child.	5.98 (1.12)	.41	.67
15. I try to understand the reasons why my child misbehaves.	6.2 (1.13)	.39	.68

Note. Original item numbers are shown.

IV.3. Subdiscussion

In this study, we aimed to translate The Parental Reflective Functioning Questionnaire Adolescent Version into the Hungarian language and test its structural validity. From a theoretical perspective, the three factors of the PRFQ refer to relatively distinct features of parental mentalizing (Luyten et al., 2017). Furthermore, the PRFQ has been validated in various languages, and the majority of studies supported the PRFQ's three-factor structure (Wendelboe et al., 2021; Ye et al., 2022; Pazzagli et al., 2017; DeRoo et al., 2019; Moreira & Fonseca, 2023), therefore confirmatory factor analysis was chosen as the first statistical method. However, the fit indices of the original three-factor model were not acceptable on our data, and the fit could not be improved either by adding covariates or by omitting poorly fitting items. Therefore, an exploratory factor analysis was also conducted. We removed items due to small factor loadings or their negative influence on Cronbach's α.

In the end, the PM items were all omitted and item 18 was also removed from the IC items. The exclusion of item 18 is in line with previous research (Ye et al., 2022; DeRoo et al., 2019). Furthermore, as we noted in Study 1, Pre-Mentalizing represents the most maladaptive facet of parental mentalizing captured by the PRFQ and thus might be more challenging to rate for mothers in a community sample (Luyten et al., 2017). Furthermore, the PM subscale is the most complex scale of the PRFQ (Wendelboe et al., 2021), as each item represents a different mentalizing difficulty (see Study 1 for a more in-depth explanation), therefore instead of using the PM scale, we advise using its items separately. However, further replication of these findings and qualitative research is needed before any substantial conclusions can be drawn about the PM scale. PM items may have disappeared due to developmental reasons. During childhood, as the internal working model of the child becomes more sophisticated, they step into the partnership stage of attachment (Bowlby, 1969/1982). In the partnership, the child develops the ability to understand and take into consideration the caregiver's goals and interests independently of their own. The child's ability to communicate also improves during this period. Based on these, parents might have more opportunities to pre-mentalize their children in the early years, whereas later in the partnership, children can communicate their mental states, therefore parents of community samples do not have as many opportunities to pre-mentalize their children. It is also worth noting, that The PRFQ-A was developed to measure adolescents' caregivers' mentalizing by rephrasing the items of the original PRFQ that was created for parents of children up to the age of five. However, it is important to note that a

parent may imagine different scenarios when considering a young child or adolescent. In line with this notion, item seven "*I find it hard to actively participate in make believe play or imaginary activities with my child*." was removed from the Hungarian adolescent version due to the small factor loading, while it remains in the Hungarian PRFQ for younger children.

There are some limitations to this study. In light of its cross-sectional nature, future research should replicate our findings using longitudinal designs. Furthermore, this study relied solely on a self-report measure, which may be subject to reporting bias. Additionally, these findings need to be validated among fathers and in clinical samples. A structural validity analysis was conducted, however, other forms of validity were not examined, such as convergent validity, discriminant validity, predictive validity, or test-retest validity.

Even with these limitations, our study provides the first preliminary evidence for the factor structure of the Hungarian PRFQ-A.

V. Study 3: What makes mothers feel competent? The relationship between parental reflective functioning, attachment style, parental competence, and stress[3]

V.1. Methods

V.1.1. Participants

The sample included 186 mothers of adolescents between 12 and 18 years of a community sample. The mean age of the mothers was 44.33 years (*SD* = 4.62, Range: 34–57 years). Seventy mothers had one (37.6%), 66 had two (35.5%), and 50 had three or more children (26.9%). Seventy-four participants completed the questionnaire regarding their first child (39.8%), 24 regarding their second child (12.9%), and 88 regarding their third or more child (47.3%). Among these children, 95 were females (51.1%), and 91 were males (48.9%). Their mean age was 14.40 years (*SD* = 1.84). For further demographic characteristics of the sample, see Table 12.

3 This chapter was written based on the article "*What makes mothers feel competent*?" (Szabó et al., 2024) accepted for publication in Psihologija.

Table 12

Demographic characteristics ($N = 186$)

Demographics		*n* (%)
Residency		
	Capital city	52 (28)
	Town	94 (50.5)
	Smaller settlement	40 (21.5)
Economical activity status		
	Employed	157 (84.4)
	Unemployed, houswife or on maternal leave	29 (15.6)
Level of education		
	Medium level (12 years)	63 (33.9)
	High level (university degree)	123 (66.1)
Perceived financial status		
	Below the average	15 (8.1)
	Average	134 (72)
	Above the average	37 (19.9)
Type of the school the child attends		
	Secondary school	101 (54.3)
	Primary school	85 (45.7)
Relationship status		
	Married	114 (61.3)
	Partner relationship	32 (17.2)
	Single, divorced or widow	40 (21.5)

V.1.2. Measures

Among the demographic variables, we asked about the parent's age, highest education, marital status, place of residence, economical activity, financial situation and number of children. We also asked about the gender, the place in the sibling order and the current education of the adolescent.

The Hungarian version of the Parental Reflective Functioning Questionnaire - Adolescent version (PRFQ-A; Luyten et al., 2017; Szabó et al., 2022) is a self-report measure designed to assess parental reflective functioning among parents of children aged between 12 and 18 years on two subscales. The first subscale is Certainty about Mental States (CMS). On this scale, higher scores indicate a tendency for parents to be highly certain about their child's mental state, while lower scores indicate a lack of certainty (e.g., „*I always know what my child wants.*"). Interest and Curiosity (IC) is the second subscale, with low levels representing the loss of interest in the adolescent's mental state (e.g., „*I like to think about the reasons behind the way my child behaves and feels*."). Higher scores on each scale represent a more genuine parental mentalizing (from strongly disagree = 1 to strongly agree = 7). The PRFQ-A showed good psychometric properties in the Hungarian sample (α = .70 - .81, Szabó et al., 2022). The subscales also showed good internal consistencies with Cronbach's αs of .81 for the Certainty about Mental States subscale and .73 for the Interest and Curiosity subscale in this study.

The Attachment Style Questionnaire (ASQ; Feeney et al., 1994; Hámori et al., 2016) is a self-report questionnaire developed to measure adult attachment (α = .76 – .84; Feeney et al., 1994). The ASQ consists of 40 Likert-type items (from disagree = 1 to agree = 6) with five subscales: Confidence (e.g. "*Overall, I am a worthwhile person.*"), Relationships as secondary (e.g. "*To ask for help is to admit that you are a failure.*"), The need for approval (e.g., "*It's important to me that others like me.*"), Discomfort with closeness (e.g., "*I find it hard to trust other people.*"), and Preoccupation with relationships (e.g., "*I worry that others won't care about me as much as I care about them.*"). Participants with a secure attachment style have high scores on the Confidence subscale while low scores on the other subscales. In contrast, people with insecure attachment styles show the opposite pattern. Using k-means cluster analysis, the participants can be classified into Bartholomew and Horowitz's attachment styles. The ASQ proved to be a reliable questionnaire to measure adult attachment in the Hungarian sample (α = .60 – .79; Hámori et al., 2016). In this study, the subscales showed internal consistencies with Cronbach's αs ranging from .71 to .80.

The Parental Sense of Competence Scale (PSOC; Johnston & Mash, 1989; Márk-Ribiczey et al., 2016) assesses two aspects of parents' perception of their parental role. The first

dimension is Satisfaction, which is a measure of emotional well-being within the parental role (e.g., „*Being a good mother is a reward in itself*".). The second dimension is Efficacy, which measures parents' beliefs about parenting abilities and effectiveness (e.g., „*The problems of taking care of a child are easy to solve once you know how your actions affect your child, an understanding I have acquired*".). The PSOC consists of 17 Likert-type items (from strongly disagree = 1 to strongly agree = 6), with higher scores representing a stronger parental sense of competence. The PSOC subscales had good internal consistencies in a Hungarian sample (α = .70 and α = .80; Márk-Ribiczey et al., 2016), and both subscales showed good to very good internal consistencies (α = .80 and α = .76, respectively) in this study.

The Perceived Stress Scale (PSS; Cohen et al., 1983; Stauder & Konkolÿ Thege, 2006) is a 14-item measure of global perceived stress (α = .84; Cohen et al., 1983) using Likert-type scales (from never = 0 to very often = 4), where higher scores reflect more perceived stress (e.g., „*In the last month, how often have you felt that you were unable to control the important things in your life?").* The PSS showed very good internal consistency in the Hungarian sample (α = .88; Stauder & Konkolÿ Thege, 2006). In our sample, it also had a very good internal consistency (α = .89).

V.1.3. Data Analyses

We calculated the sample size using the general rules for regression (15 participants * k, 50 + 8k, 104 + k, where k is the number of predictors; Field et al., 2012; Green, 1991). The largest required sample size was 135, which we exceeded with 50 participants.

The statistical analyses were performed using SPSS version 22 (IBM Corp., 2011) and PROCESS v3.4 (Hayes, 2017). First, we standardized the scales of the ASQ; then, we used K-means cluster analysis to identify the attachment styles of the mothers. We used a parametric test if the skewness and kurtosis were between ±1 (Bulmer, 1979). Since most participants reached 6.2 points or more on the IC scale (57.5%), we also recoded this scale into a dichotomous variable (= 1 if >= 6.2 and = 0 if < 6.2), and tested the associations with the dichotomous IC variables as well as the IC scale.

Next, we assessed the relationship between the scales and the demographic variables. In the case of the scales, we used a set of Pearson correlations, independent-sample t-tests and one-way ANOVAs. In contrast, in the case of the dichotomous IC variable, we used Chi-square tests to assess its relationship with categorical demographic variables. The significance level was set at an α level of .05, using Bonferroni correction for multiple comparisons.

We evaluated the relationships between the study variables with Pearson correlation in the case of scales. At the same time, we measured the relationship between the IC and study variables with a set of independent sample t-tests. We assessed the relationships between attachment styles and scales with a series of one-way ANOVAs. Chi-square tests were used to measure the relationship between the attachment styles and the dichotomous IC variable. Lastly, we conducted two separate moderated mediation analyses with maternal attachment style as the independent variable and PSS as the moderator. The mediator was the CMS scale controlling the analysis for the economic activity status. It is important to note that the two models differed in the dependent variable, which was either PSOC Efficacy or Role-satisfaction. Since the attachment style is a multicategorical variable, we used indicator coding (Hayes, 2017). Hence, the model compares the three insecure attachment styles to secure attachment (reference group).

We also conducted two linear regression analyses with the Enter method. In the first model, the parental mentalizing subscales, IC and CMS were the predictors, while PSS was the dependent variable. In the second model, we chose PSOC Efficacy and Role-satisfaction as independent variables, and the PSS was the dependent variable. Multicollinearity was controlled by Pearson's correlation coefficients ($r < .7$), means of tolerance (TOL > 0.10) and variance inflation factor (VIF < 10), and autocorrelation with Durbin-Watson test ($d > d_u$; $d < 4 - d_u$). Under these conditions, none of the variables studied together showed multicollinearity. Outliers were controlled by the Cook's distance (> 1). The linear relationship between the dependent and independent variables was assessed with a scatter plot.

V.1.4. Procedure

This study was conducted following the Declaration of Helsinki (Code of Ethics of the World Medical Association) and was approved by the Faculty of Education and Psychology's Research Ethics Committee (reference Nr: 2021/267-2). We utilized an online questionnaire system (Qualtrics, 2020) for data collection. The sample was recruited from parent groups and forums on social media through volunteer sampling. We informed the participants about the study's purpose, ensured their anonymity, and did not compensate them for their participation. Filling out was voluntary and anonymous and could be cancelled anytime. Completing the questionnaire after informed consent took approximately thirty minutes. Participants completed a questionnaire packet after providing written consent that included a demographic form, the Parental Reflective Functioning Questionnaire Adolescent Version, the Attachment Style Questionnaire, the Parental Sense of Competence Scale, and the Perceived Stress Scale. Any

caregiver could fill out the questionnaire, but only ten fathers participated, so we decided to exclude fathers from the analysis.

V.2. Results

V.2.1. Identifying the attachment styles

Table 13 shows the descriptive statistics of the study variables. After standardizing the scales, we used k-means cluster analysis on the ASQ scales. We identified four attachment styles (Table 14). There were only minor differences between the current and the original cluster analyses by Feeney et al. (1994), and the Explained Error Sum of Squares was above 50% (Takács et al., 2015), indicating that the four-cluster model fits the current sample. In the current sample, 63 mothers had secure, 47 dismissing, 50 preoccupied, and 26 mothers had fearful attachment styles.

Table 13

Descriptive statistics of study variables (*N* = 186)

	Min	Max	Mean	*SD*	Skewness	Kurtosis
CMS	1.17	6.83	4.40	1.13	-0.31	-0.11
IC	2.40	7	6.10	0.85	-1.34	2.51
RS	7	35	15.70	5.40	0.75	0.57
NA	7	32	17.80	5.30	0.32	-0.28
DC	10	55	33.80	8	0.01	0.02
PR	8	43	23.80	6.70	0.32	-0.11
CR	15	37	35.10	6.40	-0.61	0.18
PSS	5	42	22.60	7.50	0.15	-0.10
PSOC Efficacy	7	34	23.78	5.50	-0.62	0.22
PSOC Satisfaction	16	50	35.30	7	-0.33	-0.34

Note. CMS Certainty about Mental States, *IC* Interest and Curiosity, *RS, NA, DC, PR, CR* the subscales of the Attachment Style Questionnaire, *RS* relationships as secondary, *NA* the need for approval, *DC* discomfort with closeness, *PR* preoccupation with relationships, *CR* confidence*, PSS* Perceived Stress Scale*, PSOC* Parental Sense of Competence Scale

Table 14

The cluster analysis of the current sample (N = 186)

	Fearful	Dismissing	Secure	Preoccupied
RS	high	medium*	low	low
NA	high	low*	low	medium*
DC	high	high	low	low*
PR	high	medium	low	high
CR	low	medium	high	medium

Note. RS Relationships as secondary*, NA* The need for approval*, DC* Discomfort with closeness*, PR* Preoccupation with relationships*, CR Confidence,* * difference compared to the original cluster analysis conducted by Feeney et al. (1994).

V.2.2. Associations with the demographic variables

Following the cluster analysis, the relationships between the study variables and the demographic characteristics were assessed. Only the perceived level of stress was related to the economical activity status, $t(184) = -3.22$, $p = .002$, $d = 0.59$: employed mothers perceived a lower level of stress ($M = 21.88$, $SD = 6.97$) than unemployed mothers ($M = 26.62$, $SD = 8.82$). The other demographic characteristics were unrelated to the study variables; therefore, they were not controlled for in the moderated mediation analysis.

V.2.3. Bivariate relationships

We identified significant relationships between maternal attachment style and other study variables (Tables 15 and 16). In the case of the perceived level of stress and parental role-satisfaction, all the pairwise comparisons were significant between the attachment styles except for the relationship between the preoccupied and the dismissing attachment styles. Mothers with a secure attachment style perceived the least stress and were the most satisfied with their parental role, while mothers with a preoccupied and dismissing attachment style showed higher levels of stress and lower levels of role-satisfaction than the secure mothers. The most stress and the least satisfaction characterized the fearful attachment style.

In the case of parental self-efficacy, besides the difference between the preoccupied and the dismissing attachment styles, the difference between the secure and dismissing attachment styles also did not reach significance. Mothers with a secure attachment style reported the most self-efficacy, while those with dismissing attachment style showed less and preoccupied mothers the least self-efficacy. The lowest level of self-efficacy characterized mothers with a fearful attachment style.

There were only significant differences in the level of CMS between the secure and fearful attachment styles and the dismissing and fearful attachment styles. Compared to mothers with a secure attachment style, mothers with a dismissing attachment style showed less certainty, and mothers with a fearful attachment style showed the lowest level of certainty.

The Chi-square test did not indicate a significant relationship between the IC scale and the attachment styles, X^2 $(3, N = 186) = 4.84$, $p = .18$.

Table 15

One-way ANOVA with Bonferroni post hoc group comparison of study variables in relation to the maternal attachment style (N = 186)

Measure	1. Secure		2. Preoccupied		3. Dismissing		4. Fearful		$F(3,182)$	η^2	Post Hoc Test (Bonferroni)		
											Group comp.	Mean diff.	*p*
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*					
PSS	17.87	6.33	22.53	5.85	24.44	6.18	30.77	6.59	28.64*	.32	1 vs 2	-4.66	.001
											1 vs 3	-6.57	< .001
											1 vs 4	-12.90	< .001
											2 vs 3	-1.91	.79
											2 vs 4	-8.24	< .001
											3 vs 4	-6.33	< .001
Satisfaction	39.81	5.63	35.62	6.12	33.44	5.44	27.23	5.74	9.70*	.35	1 vs 2	4.19	.001
											1 vs 3	6.37	< .001
											1 vs 4	12.58	< .001
											2 vs 3	2.18	.38
											2 vs 4	8.39	< .001
											3 vs 4	6.21	< .001
CMS	4.78	1.12	4.26	.96	4.43	.96	3.69	1.13	6.58*	.10	1 vs 2	.52	.08
											1 vs 3	.35	.52

											1 vs 4	1.09	< .001
											2 vs 3	-.17	1.00
											2 vs 4	.57	.20
											3 vs 4	.74	.04
IC	6.09	0.93	6.22	0.66	6.20	0.81	5.75	0.96	2.03	.03	1 vs 2	-.11	1
											1 vs 3	-.13	1
											1 vs 4	.33	.56
											2 vs 3	-.02	1
											2 vs 4	.45	.19
											3 vs 4	.47	.14

Note. PSS Perceived Stress Scale*, Satisfaction* Parental Sense of Competence Scale Satisfaction subscale, *CMS* Certainty about Mental States, *IC* Interest and Curiosity.

* $p < .01$ ($\alpha = .05/4$, using Bonferroni correction)

Table 16

The Welch's ANOVA (W-test) with Bonferroni post hoc group comparison of Efficacy in relation to the maternal attachment style (N = 186)

											Post Hoc Test (Bonferroni)		
Measure	1. Secure		2. Preoccupied		3. Dismissing		4. Fearful		*F*(3,82.14)	ω^2	Group comp.	Mean diff.	*p*
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*					
Efficacy	25.90	4.94	23.13	6.02	23.96	4.51	19.50	5.36	9.40*	.12	1 vs 2	2.78	.04

		1 vs 3	1.94	.29
		1 vs 4	6.40	< 0.001
		2 vs 3	-0.83	1.00
		2 vs 4	3.63	.03
		3 vs 4	4.46	.01

Note. The condition of equality of variances was violated ($p = .03$); therefore, a robust procedure was used. *Efficacy* The Parental Sense of Competence Scale Efficacy subscale

* $p < .01$

The IC subscale was not significantly related to the other study variables (Table 17). CMS was negatively related to the perceived level of stress and positively associated with parental self-efficacy and role-satisfaction. Furthermore, self-efficacy and role-satisfaction were negatively associated with the perceived level of stress (Table 18).

Table 17

Results of the independent sample t-test comparing the relationship between the Interest and curiosity dichotomous variable and the study variables (N = 186)

Study variable	Low IC		High IC		*t*(184)	*p*	Cohen's *d*
	M	*SD*	*M*	*SD*			
PSS	23.44	7.69	22.01	7.28	1.30	.20	0.19
Satisfaction	34.51	7.75	35.85	6.40	-1.29	.20	0.19
Efficacy	22.92	5.56	24.42	5.46	-1.83	.07	0.27
CMS	4.18	1.08	4.57	1.14	-2.35	.02	0.35

Note. IC Interest and Curiosity, *Low IC* reaching less than 6.2 points on the Interest and Curiosity subscale, *High IC* reaching 6.2 points or more on the Interest and Curiosity subscale, *PSS* Perceived Stress Scale*, Satisfaction* Parental Sense of Competence Scale Satisfaction subscale, *Efficacy* Parental Sense of Competence Scale Efficacy subscale, *CMS* Certainty about Mental States

* $p < .01$ ($\alpha = .05/4$, using Bonferroni correction)

Table 18

Bivariate relationships (Pearson's correlation coefficients) of study variables (N = 186)

	1	2	3	4	5
1. PSS	—				
2. PSOC Satisfaction	-.58*	—			
3. PSOC Efficacy	-.34*	.51*	—		
4. CMS	-.39*	.35*	.49*	—	
5. IC	-.09	.07	.16	.11	

Note. PSS Perceived Stress Scale*, PSOC* the Parental Sense of Competence Scale, *CMS* Certainty about Mental States

* $p < .01$ ($\alpha = .05/5$, using Bonferroni correction)

V.2.4. The moderated mediation analysis

In the moderated mediation analysis (Table 19), compared to the secure attachment style as a reference group, all the insecure attachment styles were directly related to lower levels of role-satisfaction. In the case of self-efficacy, only the fearful attachment style compared to the secure attachment style as the reference group showed a negative association directly.

Table 19

Moderated mediation analyses (N = 186)

Outcome	Model	Predictor	coeff	se	*t*	*p*
CMS	$R^2 = .20$, $F(8,177) = 5.64$, $p < .001$					
		constant	4.45	0.28	15.83	< .001
		dismissing	-0.19	0.22	-0.85	.40
		preoccupied	0.06	0.23	0.25	.80
		fearful	-0.01	0.36	-0.02	.99
		PSS	-0.07	0.02	-3.35	.01
		dismissing x PSS	0.08	0.03	2.30	.02
		preoccupied x PSS	0.03	0.03	0.83	.41
		fearful x PSS	-0.02	0.04	-0.59	.55
		economical activity status	-0.01	0.22	-0.01	.99
Satisfaction	$R^2 = .38$, $F(5,180) = 22.33$, $p < .001$					
		constant	33.63	2.33	14.40	< .001
		dismissing	-3.55	1.10	-3.23	.01
		preoccupied	-5.95	1.08	-5.50	< .001
		fearful	-11.25	1.39	-8.06	< .001

	CMS	1.25	0.38	3.28	.01
	economical activity status	0.18	1.16	0.15	.88
Efficacy	$R^2 = .31$, $F(5,180) = 16.00$, $p < .001$				
	constant	14.13	1.95	7.24	< .001
	dismissing	-1.83	0.92	-2.01	.05
	preoccupied	-1.52	0.90	-1.68	.09
	fearful	-4.64	1.17	-3.98	< .001
	CMS	2.04	0.32	6.39	< .001
	economical activity status	1.89	0.97	1.95	.05

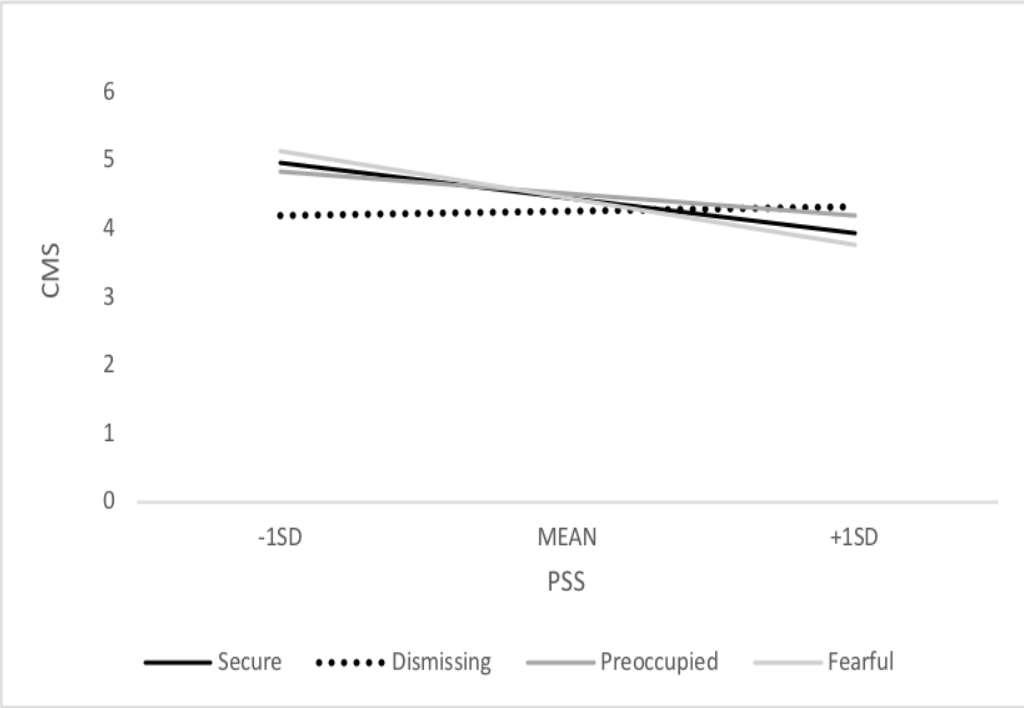
Note. PSS Perceived Stress Scale*, Satisfaction* Parental Sense of Competence Scale Satisfaction subscale, *Efficacy* Parental Sense of Competence Scale Efficacy subscale, *CMS* Certainty about Mental States. Predictors with bold are significant.

The insecure attachment styles compared to the secure attachment style as a reference group were directly unrelated to the CMS, while the CMS showed associations with higher levels of role-satisfaction and self-efficacy. Furthermore, higher levels of PSS were related to lower levels of the CMS.

In this analyses, a significant interaction effect of the dismissing attachment style by PSS suggested a moderation effect (a_2= 0.08, p = .02). Post hoc analysis revealed that the simple unstandardized slope for dismissing attachment style at low-stress levels (-1 *SD*) was -0.77 (p = .01) and at high levels of stress (+1 *SD*) it was 0.39 (p = .31). These results indicate that mothers with a dismissing attachment style with low-stress levels show decreased CMS, while this association was not significant at the high levels of stress. Figure 4 shows the moderation analysis as part of the moderated mediation more precisely. Only the dismissing attachment style differed from the secure attachment style, while the fearful and preoccupied attachment styles were similar to the secure attachment style. At low levels of stress, mentalizing was intact in case mothers had these attachment styles, while they had lower certainty if they had a dismissing attachment style. However, at higher levels of stress, certainty decreased independent of attachment styles.

Figure 4

Moderation analysis with attachment style as the independent variable, Certainty about Mental States as the dependent variable and perceived stress level as the moderator (N = 186)



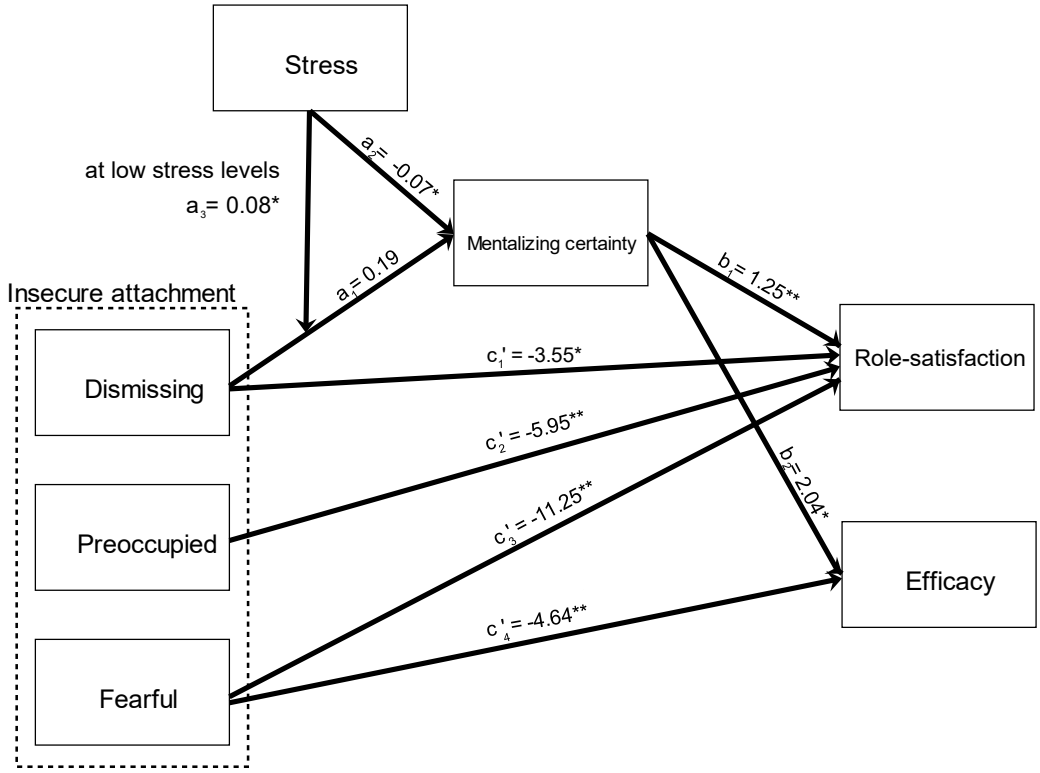
Note. CMS Certainty about Mental States, *PSS* Perceived Stress Scale

For mothers with a dismissing attachment style, lower levels of stress decrease their parental certainty. However, for mothers with other attachment styles, parental mentalizing is unrelated to stress.

At low levels of stress the relationship between dismissing attachment style and role-satisfaction was mediated by CMS ($a_{1L}b_1$= -0.97, [-1.97 - -0.23]), while at high levels of stress the indirect effect was not significant ($a_{1H}b_1$= 0.49, [-0.43 – 1.75]). Furthermore, at low levels of stress the relationship between dismissing attachment style and self-efficacy was mediated by CMS ($a_{1L}b_2$= -1.57, [-2.91 - -0.49]), while at high levels of stress the indirect effect was not significant ($a_{1H}b_2$= .80, [-0.76 – 2.43]). In sum, at low levels of stress, the dismissing attachment style of the mothers is associated with lower levels of certainty, which in turn is related to lower levels of self-efficacy and role-satisfaction (Figure 5).

Figure 5

Moderated mediation analysis (N = 186)



Note. ASQ the Attachment Style Questionnaire, *CMS* Certainty about Mental States, *ai, bi, ci'* unstandardized regression coefficients

At low levels of stress the relationship between dismissing attachment style and role-satisfaction was mediated by CMS ($a_{1L}b_1$= -0.97, [-1.97 - -0.23]).

The analysis was controlled for the economical activity status.

* $p < .05$, ** $p < .001$

V.2.5. Results of the linear regression analyses

The first model, with the PRF subscales as predictors was significant, $F(2,183) = 16.19$, $p < .001$. Only CMS was a significant predictor of stress (B = -2.51, β = - 0.38, $p < .001$), while IC was not related to stress (B = -0.37, β = -0.04, p = .54). Higher levels of CMS predicted lower stress levels.

The second model, with PSOC subscales as predictors was also significant, $F(2,183) = 46.80$ $p < .001$. However, only higher levels of role-satisfaction predicted lower levels of stress (B = -

0.59, β = - 0.55, $p < .001$). Parental efficacy was unrelated to the stress level (B = -0.08, β = -0.06, p = .41).

V.3. Subdiscussion

Previous studies indicated that parental reflective functioning, attachment, stress, and parental sense of competence are related constructs (Nijssens et al., 2018; Luyten et al., 2017); however, it is also worth noting that most of the previous findings have been based on data from parents of small children. Adolescence is a time of change (Crone & Dahl, 2012; Rudolph, 2002; Zarrett & Eccles, 2006), and the parent-child relationship also alter (Branje, 2018; Mastrotheodoros et al., 2020). As a result, many pieces of research focused on adolescents' outcomes (Colarossi & Eccles, 2003; Shoshani & Steinmetz, 2014; Stewart & Suldo, 2011; Wille et al., 2008), while less is known about the mental health of their parents. In our study, we aimed to examine the relationship between these constructs in mothers of adolescents, focusing on what makes mothers competent in this time of many changes and challenges.

Based on previous research, we expected mothers with a secure attachment style to show higher parental role-satisfaction (Nijssens et al., 2018) and experience lower levels of stress (Green et al., 2007; McCarthy et al., 2001) than mothers with insecure attachment styles. As indicated by attachment theory (Bowlby, 1969/1982), adults tend to use the internal models of their parents to guide their own parenting behaviours and their current self-model also influences parental behaviours, which has roots in their own attachment experiences with their caregivers. Furthermore, Bowbly (1969/1982) also stated that attachment insecurities contribute to vulnerability to stress as people acquire adaptive emotion regulation skills in their early attachment relationships. In our study, all the pairwise comparisons were significant in the perceived stress and parental role-satisfaction between the attachment styles, except for the relationship between the preoccupied and the dismissing attachment styles. The lack of difference between the results related to the latter two attachment styles indicates that in relation to parental stress and self-efficacy, it is indifferent whether it is the „self" or the „other" dimension that is negative. Thus, there are only three distinct categories in this relation: 1) No anxiety, no avoidance; 2) anxiety or avoidance; 3) both anxiety and avoidance.

In the case of parental self-efficacy, besides the difference between the preoccupied and the dismissing attachment styles, the difference between the secure and dismissing attachment styles also did not reach significance. The association may be explained by the fact that both

attachment styles are characterized by positive self-images. It has also been shown in prior studies that self-image and efficacy are related constructs (Bacchini & Magliulo, 2003).

An individual's mentalizing capacity is also rooted in their early attachment experiences (Fonagy & Target, 1997). Based on previous findings (Pazzagli et al., 2018; Zeegers et al., 2017), we expected that mothers with a secure attachment style would show higher levels of parental reflective functioning compared to mothers with insecure attachment styles. Compared to mothers with a secure attachment style, mothers with a dismissing and preoccupied attachment style showed less certainty, and mothers with a fearful attachment style showed the lowest level of certainty. However, statistically significant differences in the level of CMS were only found between the secure and fearful attachment styles and the dismissing and fearful attachment styles. These results indicate that with regard to the certainty dimension, preoccupied and dismissing attachment styles are very similar to the secure attachment style. At the same time, they are markedly different from the fearful attachment style. These results indicate that CMS only decreases when both the „self" and the „other" dimensions of attachment are negative, as in the case of the fearful attachment style.

The IC dimension of parental reflective functioning was unrelated to the study variables. However, the certainty dimension of the parental reflective functioning showed a positive association with parental competence and attachment security, while it was negatively associated with the perceived level of stress. Previous studies indicated that the two factors show a similarly strong association with the study variables (Luyten et al., 2017; Gordo et al., 2020). However, these studies all focused on parents of younger children. The current results might imply that the dimensions of parental mentalizing might have different roles that depend on the age of the child. In the case of parents of younger children, both the IC, as well as the certainty dimensions of parental reflective functioning, are related to parental competence, attachment style and perceived stress. However, in the case of parents of adolescents, only the certainty dimension of parental reflective functioning is related to the same constructs. These results can be implemented into attachment theory (Bowlby, 1969/1982). As children age and their internal working model becomes more sophisticated, they step into the partnership stage of attachment. In the partnership, the child develops the ability to understand their caregiver's goals and interests independently of their own and to take them into account while their communication also improves. In the early years, parents have to show interest to deepen their connection, while later in the partnership, less interest and curiosity is needed from the parents as the children can share their mental states of themself on the base of the secure base. It is also worth noting that in adolescence, the attachment hierarchy changes as the role of the peers

becomes more important than the parents' (Andrews et al., 2021), so parents might also take a step back to support their children's autonomy.

Our results are in line with previous research indicating that certainty about the mental states is related to lower levels of perceived stress (Luyten et al., 2017; McMahon & Meins, 2012; Rutherford et al., 2013) and higher levels of parental self-efficacy and role-satisfaction (Gordo et al., 2020; Luyten et al., 2017). Furthermore, self-efficacy and role-satisfaction were negatively associated with the level of perceived stress (Gordo et al., 2018; Luyten et al., 2017; McBride, 1989) in the community sample of mothers of adolescents. Taken together, these results imply that when the perceived stress of mothers is lower, they feel more competent and are more certain about the mental states of their children. In addition, mothers feel more competent when they are more certain about the mental states of their children.

As this is the second study to use the Hungarian PRFQ-A, our study also provides some evidence concerning this measure. There was good to very good internal consistency between both subscales in this study. Nevertheless, only CMS was associated with the mother's attachment styles, stress levels, and parental sense of competence. In addition, there was no relationship between IC and CMS.

We conducted a moderated mediation analysis with maternal attachment style as the independent variable, PSOC Efficacy and Satisfaction subscales as the dependent variables, PSS as the moderator and the CMS scale as the mediator. When compared to the secure attachment style (used as a reference group), all the insecure attachment styles were characterized by lower levels of role-satisfaction. In contrast, only the fearful attachment style was negatively associated with parental self-efficacy. As role-satisfaction is an affective construct (Johnston & Mash, 1989), it can capture both the self and other dimensions of attachment. In parallel, self-efficacy is a cognitive construct (Johnston & Mash, 1989), so both attachment dimensions must be negative to undermine it.

Surprisingly, when the insecure attachment styles were compared to the secure attachment style as a reference group, they were unrelated to the certainty about mental states subscale. However, it is important to note that the level of CMS was significantly different only between the fearful and secure attachment styles, and between the fearful and dismissing attachment styles at the bivariate level. As the child's mentalizing capacity develops in the context of early attachment relationships (Luyten et al., 2017), we expected strong associations between attachment and parental reflective functioning. Our results, however, may be influenced by the measures we used, since we measured attachment in general, whereas prior studies have typically measured parents' attachment styles to their own caregivers (Slade et al.,

2004). In addition, we used attachment styles as categorical variables, which may have influenced our results as well. Scharfe et al (2017) show that viewing attachment styles as categorical variables may misclassify some individuals near the boundary, thereby increasing statistical error and reducing the power to detect attachment's effects. In addition, clinical and nonclinical groups have differing baseline proportions of attachment categories, suggesting that certain categories may be more or less important depending on the sample or participant experience. Additionally, categorization assumes that individuals' strategies are black and white; however, a more flexible approach may result in greater success. In examining the associations between CMS and the ASQ subscales as scales, we also found weak correlations (r = -.17 to .37) except for the Relationship subscale as a secondary subscale, which was unrelated to CMS (p = .07). In light of this, future studies should also test the moderated mediation model with both continuous and categorical attachment variables.

In line with previous research, CMS was associated with higher levels of role-satisfaction and self-efficacy (Gordo et al., 2020; Luyten et al., 2017) and lower levels of perceived stress (Luyten et al., 2017; McMahon & Meins, 2012; Rutherford et al., 2013). At low levels of stress, the relationships between dismissing attachment style and role-satisfaction and self-efficacy were mediated by the CMS. That is, at low levels of stress, mothers with a dismissing attachment style, through lower levels of parental certainty, showed decreased levels of role-satisfaction and self-efficacy.

In sum, the insecure attachment styles all predicted lower levels of parental role-satisfaction, while the fearful attachment style further predicted lower levels of parental efficacy. In the case of the dismissing attachment style, besides the attachment style itself, CMS and the levels of stress were also important predictors of the parental sense of competence. These results imply that when the perceived stress level is low, the dismissing attachment style might undermine parental certainty, which in turn leads to lower levels of perceived competence. In contrast, when the perceived stress level is high, it is the stress itself that undermines certainty independent of the attachment style. As mothers with a dismissing attachment style have a positive self-image and a negative image of others, they avoid close relationships, so they can have fewer experiences where they can mentalize. Given the lack of experience, even situations with lower levels of stress can reduce their certainty, which undermines their perceived parental competence.

Based on these findings, we recommend stress reduction during interventions for mothers of adolescents as stress levels, independent of attachment style, reduce their mentalizing. Besides stress reduction, our results suggest that targeting parental CMS during

therapeutic work with mothers of adolescents with a dismissing attachment style can also increase their perceived parental competence. Our results also indicated that in the case of all the insecure attachment styles, the attachment styles themself reduce parental satisfaction. Taken together, during psychotherapy for mothers with insecure attachment styles targeting the attachment style itself should be the focus. Furthermore, in the case of the fearful attachment style, the effects also influence their parental efficacy, which is the cognitive component of the parental sense of competence. These results highlight the need to address the cognitive consequences of this attachment style on parental efficacy during interventions.

Furthermore, self-efficacy and role-satisfaction were negatively associated with the level of perceived stress at the bivariate level, which is in line with prior studies (Gordo et al., 2018; Luyten et al., 2017; McBride, 1989). However, it should be noted that in the multivariate analysis, only higher levels of role-satisfaction were significantly associated with lower levels of stress, while efficacy was not significantly associated with stress when considered together in the same model with role-satisfaction. There may be a difference between these two subscales due to the fact that role satisfaction is an affective construct, whereas efficacy is a cognitive construct (Johnston & Mash, 1989). Therefore, during interventions, we recommend focusing on parents' emotions towards themselves as parents, e.g., the intervention should incorporate self-compassion practices (Jefferson et al., 2020).

Although this study identified a number of potentially essential relationships, it is not without limitations. Considering the cross-sectional nature of this study, future studies should replicate our findings using longitudinal designs. Further studies should be conducted that complement self-report measures with alternative assessments in order to avoid bias in self-report measures. It is worth noting that the PRFQ captures parents' certainty about the child's mental state while the self-focus is not present. These results highlight the need to assess parental reflective functioning among more dimensions. Further studies should assess these relationships more precisely, encompassing both the self and other aspects of parental mentalizing. Assessing attachment styles with questionnaires can also be biased, so further studies should implement alternative assessments, e.g. interview, projective techniques. Apart from the limitations of the self-report measures, the ASQ measures the attachment styles in general, not in a specific relationship. So the insignificant results might arise from the fact that we did not measure the security of the parent-child relationship. Also, it is worth noting that we measured general stress and not stress in the parent-child relationship, so this might also explain the insignificant results. Future studies should assess the study variables in general and also in a relation-specific manner to shed light on these associations. It is important to note that our

sample size may have limited our ability to observe additional significant relationships in the moderated mediation model (Kline, 2023). Therefore, future studies should examine the associations using larger samples. It will also be necessary to conduct further research to replicate our findings among fathers and in clinical samples as well. It would be beneficial to test alternative models with different directions in future studies.

Despite these limitations, this study highlights that parental sense of competence, parental reflective functioning, attachment style, and stress are related constructs among mothers of adolescents. In the case of mothers of adolescents, only the certainty dimension of parental reflective functioning is related to stress, attachment and parental competence, while the interest and curiosity dimension of parental mentalizing is unrelated. The insecure attachment styles predict lower levels of parental role-satisfaction, while the fearful attachment style also predicts a lower level of parental efficacy among mothers of adolescents. In the case of the dismissing attachment style, besides the attachment style itself, mentalizing and the levels of stress are also important predictors of the parental sense of competence among mothers of adolescents. Based on these findings, interventions targeting parental mentalizing and stress levels besides the parents' adult attachment style might help increase competence among mothers of adolescents.

VI. Study 4: The Reflective Function Questionnaire for Youth: Hungarian adaptation and evaluation of associations with quality of life and psychopathology[4]

VI.1. Methods

VI.1.1. Participants

We recruited the sample from schools in different regions of Hungary to reach participants from diverse socioeconomic backgrounds (Table 20). We used convenience sampling as university students carried the questionnaire packets to the schools. This study included a community sample of 384 adolescents between the ages of 12 and 18 years (M = 15.83 years, SD = 1.58); 72.7% of them were females (n = 279), while 105 were males. For a further demographic description of the sample, see Table 20. The participant's location of residence generalizes to the general population of Hungary, as the majority of the children lived in towns (52.3%). In contrast, the adolescent's current education and the parents' education levels were less diverse in the current sample, as most of the children participating attended grammar schools 66.2%, as less than 5% of the parents had a low level of education (≤8 years). We aimed to collect data from a minimum of 200 participants to reach the minimum sample size for many factor analytic studies (Kyriazos, 2018). Comrey and Lee (1992) also provided the following guidance in determining the adequacy of sample size for factor analysis: 100 = poor, 200 = fair, and 300 = good.

4 This chapter was written based on the article "*The Reflective Function Questionnaire for Youth: Hungarian adaptation and evaluation of associations with quality of life and psychopathology*" (Szabó et al., 2024) published in Clinical Child Psychology and Psychiatry.

Table 20

Demographic characteristics (N = 384)

Demographics	*n* (%)
Current education of the adolescent	
Grammar-school	254 (66.1)
Secondary technical school	70 (18.2)
Vocational school	9 (2.3)
Primary school	50 (13)
Not receiving education	1 (0.3)
Location of residence	
Capital city	98 (25.5)
Town	201 (52.3)
Countryside	85 (22.1)
Education level of the mother	
High level (university degree)	234 (60.9)
Medium level (12 years)	134 (34.9)
Low level of education (≤8 years)	16 (4.2)
Education level of the father	
High level (university degree)	208 (54.2)
Medium level (12 years)	162 (42.2)
Low level of education (≤8 years)	14 (3.6)

VI.1.2. Measures

Two independent authors translated the Reflective Function Questionnaire for Youth into Hungarian, following the guidelines by Van Widenfelt et al. (2005). We involved a 12-year-old adolescent in the translation process, asking for his feedback about the wording of the items. An independent psychologist back-translated the final version of the Hungarian RFQY into English. We sent the back-translated English version of the RFQY to the original authors, and they did not suggest any changes. Further characteristics of the scale are described in the Introduction.

We assessed the adolescents' quality of life with the Hungarian self-reported version of the Invertar zur Erfassung der Lebensqualität Kindern und Jugendlichen (ILK; Mattejat et al., 1998). The ILK consists of seven items measuring the following quality of life domains: academic achievements, family relations, peer relations, alone time, physical health, mental health, and general quality of life. A higher total score means a better quality of life, and a lower one reflects worse. Kiss et al. (2007) reported good psychometric properties of the Hungarian

version of the ILK (Cronbach's α = .73). In our study, the ILK had good internal consistency (Cronbach's α = .77).

The Strengths and Difficulties Questionnaire (SDQ, Goodman et al., 2010) is a brief screening tool for internalizing (emotional+peer symptoms, 10 items) and externalizing problems (conduct+hyperactivity symptoms, 10 items). Turi et al. (2013) reported acceptable psychometric properties of the Hungarian version. In the current sample, Cronbach's α of the internalizing problems subscale was .71, while .70 was for the externalizing symptoms subscale.

VI.1.3. Statistical analysis

We analyzed data using IBM SPSS 20 and factor.12.04.05. We conducted an exploratory factor analysis on the RFQY items following the guidelines of Field (2013). We used the Principal Axis Factoring method with direct oblimin rotation. We used the original Likert-type items for the factor analysis following Horváth et al. (2023). We suppressed factor loadings below 0.3 during the analysis. When the ratio of loadings between factors was greater than 75%, crossloadings were considered high. Our objective was to identify factors with at least three non-cross-loading items and stable loading scores.The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was assessed (0.8 - 1.0 adequate sampling, 0.7 - 0.79 middling, 0.6 - 0.69 mediocre, less than 0.6: inadequate sampling, less than 0.5: the factor analysis does not suit the data). It is confirmed by a significant Bartlett's Test of Sphericity that factor analysis is appropriate for the study. Additionally, we expected the correlation matrix to have a determinant greater than 0.00001. Parallel analysis was used to determine the number of factors (Timmerman & Lorenzo-Seva, 2011), since the RFQY consits of 46 items. We assessed the scales' Cronbach's αs (Nunnally & Bernstein, 1994). Next, we assessed the relationship between the scales and the demographic characteristics. Subgroups with very low case numbers were merged into new categories. We used parametric tests if the skewness and kurtosis were between ±1 (Bulmer, 1979). There were no outliers. We used Bonferroni correction for multiple comparisons (α/n, n = the number of tests). In order to compare the difference between the mean of the scales according to dichotomous demographic variables, we used independent sample t-tests. Additionally, we conducted a series of one-way ANOVAs to assess the scales' means according to the categorical demographic variables. We measured the association between scales by Pearson's correlation analysis.

VI.1.4. Procedure

We conducted the research according to the 1964 Helsinki Declaration. We obtained approval from the Research Ethics Committee at the relevant university (reference Nr: 2021/185) and informed the participants about anonymity, confidentiality, the nature of the study, and they gave written consent. In the case of underage participants (under 18 years in Hungary), the guardians also gave their written permission. We offered no compensation for the participation. A paper questionnaire packet was completed.

VI.2. Results

VI.2.1. Factor analytic results

The assumptions of factor analysis were met. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.858 indicating adequate sampling. Bartlett's Test of Sphericity was significant, χ^2 (1035, N = 384) = 5281.637, p < .001, so our data set was worthy of factor analysis. The EFA resulted in 13 factors with eigenvalues above one. However, parallel analysis indicated that the four-factor solution fits the current sample the best. In the next step, an EFA with fixed four factors was conducted. Items with small communalities (<0.02) were removed in each step and the EFA resulted in four factors. In total, 16 items were removed from the questionnaire, resulting in a final version of 30 items. In the final model, the eigenvalues of the four factors were 6.30, 3.59, 2.50, 1.63, respectively, the explained variance was 21.01%, 11.95%, 8.34%, 5.43%, and a total of 46.73%. The first two factors correspond to Perkins' (2009) Internal-self and Internal-other factors. Our third factor was named Self-other since these items capture the awareness of how one's behaviour impacts others and how others' behaviour affects one's mental states. Strong emotions is the fourth factor, indicating that mentalizing difficulties are associated with strong emotions. The final factor structure is illustrated in Table 21. Descriptive statistics and item-total correlations are presented in Table 22. Despite the fact that item 36 cross-loaded on two factors, the ratio of the loadings was less than 75%, the communality was 0.54, and by omitting this item Cronbach's α coefficient would have been decreased, thus it was decided to keep it. The Cronbach's α coefficients of the scales were .81, .82, .67 and .80, respectively. The Self-other subscale showed lower Cronbach's α, however, it is important to consider that lower α values can still be acceptable for shorter subscales (Taber, 2018; Vaske et al., 2017). Furthermore, the items showed adequate factor loadings and item-total correlation except for item 2. However, by omitting this item Cronbach's α would have increased only slightly, therefore we decided to keep this item. For

easier interpretation, for the following analysis, we scored the items so that higher scores on the Internal-Self, Internal-other and Self-other factors indicate higher interest and certainty, while higher scores on the Strong emotions reflect greater difficulties. Plus, Horváth et al. (2023) also noted that using Likert-type items instead of median scoring is more appropriate in the case of the RFQ.

Table 21

The final factor structure of the Hungarian version of the Reflective Function Questionnaire for Youth (N = 384)

	Factor			
	Internal-self	Internal-other	Self-other	Strong emotions
10. I often get confused about what I am feeling	0.83			
8. I always know what I feel	-0.58			
17. I don't always know why I do what I do	0.54			
36. Sometimes I do things without really knowing why	0.51			-0.36
32. I frequently feel that my mind is empty	0.48			
23. Those close to me often seem to find it difficult to understand why I do things	0.47			
18. I pay attention to my feelings	-0.44			
13. I get confused when people talk about their feelings	0.44			
28. I trust my feelings	-0.41			
25. I usually know exactly what other people are thinking		0.79		
16. I am a good mind reader		0.75		
40. I can mostly predict what someone else will do		0.65		
37. I can tell how someone is feeling by looking at their eyes		0.63		
30. My feelings about a person is hardly ever wrong		0.59		
46. I know exactly what my close friends are thinking		0.54		
1. People's thoughts are a secret to me		-0.38		

45. I pay attention to the impact of my actions on others' feelings	0.61	
20. Understanding the reasons for people's actions helps me to forgive them	0.60	
19. In an argument, I keep the other person's point of view in mind	0.47	
7. I often have to force people to do what I want them to do	-0.43	
14. I believe other people are too confusing to bother figuring out	-0.40	
41. I'm often curious about the meaning behind others' actions	0.38	
2. I worry a lot about what people are thinking and feeling	0.37	
15. I find it difficult to see other people's points of view	-0.36	
29. When I get angry, I say things that I later regret		-0.87
22. When I get angry, I say things without really knowing why I am saying them		-0.87
38. Sometimes I find myself saying things and I have no idea why I said them		-0.49
27. Strong feelings often cloud my thinking		-0.45
35. If I feel unsure of myself, I can behave in ways that offend others		-0.44
44. How I feel can easily affect how I understand someone else's behavior		-0.31

Note. Principal Axis Factoring method with direct oblimin rotation. Original item numbers are shown.

Table 22

Descriptive statistics and item-total correlations of the Hungarian version of the Reflective Function Questionnaire for Youth (N = 384)

Factor	Item	*M*	*SD*	Corrected Item-Total Correlation	Cronbach's A if Item Deleted
Internal-self	1. I often get confused about what I am feeling	3.74	1.51	.67	.78
	8. I always know what I feel	3.95	1.43	.58	.79
	17. I don't always know why I do what I do	3.34	1.47	.58	.79
	36. Sometimes I do things without really knowing why	3.44	1.44	.58	.79
	32. I frequently feel that my mind is empty	3.09	1.57	.49	.80
	23. Those close to me often seem to find it difficult to understand why I do things	3.70	1.56	.49	.80
	18. I pay attention to my feelings	2.95	1.23	.43	.81
	13. I get confused when people talk about their feelings	2.37	1.28	.42	.81
	28. I trust my feelings	2.99	1.24	.35	.81
Internal-other	25. I usually know exactly what other people are thinking	3.30	1.20	.68	.77
	16. I am a good mind reader.	3.65	1.23	.67	.77
	4. I can mostly predict what someone else will do	3.44	1.18	.55	.79
	37. I can tell how someone is feeling by looking at their eyes	3.71	1.31	.57	.79
	3. My feelings about a person is hardly ever wrong	3.72	1.24	.52	.80
	46. I know exactly what my close friends are thinking	4.04	1.19	.53	.79
	1. People's thoughts are a secret to me	3.74	1.25	.40	.82

Self-other	45. I pay attention to the impact of my actions on others' feelings	4.33	1.13	.51	.60
	2. Understanding the reasons for people's actions helps me to forgive them	4.69	1.06	.45	.61
	19. In an argument, I keep the other person's point of view in mind	4.28	1.21	.40	.62
	7. I often have to force people to do what I want them to do	4.80	1.16	.34	.64
	14. I believe other people are too confusing to bother figuring out	4.71	1.20	.37	.63
	41. I'm often curious about the meaning behind others' actions	4.82	1.04	.28	.65
	2. I worry a lot about what people are thinking and feeling	4.03	1.37	.19	.67
	15. I find it difficult to see other people's points of view	4.64	1.16	.35	.63
Strong emotions	29. When I get angry, I say things that I later regret	4.33	1.35	.62	.75
	22. When I get angry, I say things without really knowing why I am saying them	4.08	1.46	.69	.73
	38. Sometimes I find myself saying things and I have no idea why I said them	3.42	1.48	.56	.76
	27. Strong feelings often cloud my thinking	3.71	1.44	.51	.77
	35. If I feel unsure of myself, I can behave in ways that offend others	3.38	1.51	.52	.77
	44. How I feel can easily affect how I understand someone else's behavior	4.03	1.28	.40	.80

Note. Principal Axis Factoring method with direct oblimin rotation. Original item numbers are shown.

In Table 23, descriptive statistics and bivariate relationships are presented in detail. The Internal-self subscale of the RFQY showed a weak positive association with the Internal-other subscale and with the Self-other subscale. The Internal-self subscale was also moderately negatively associated with Strong emotions and internalizing and externalizing symptoms. The association between the Internal-self subscale and quality of life was positive and moderate in strength. Furthermore, the Internal-other subscale was weakly positively associated with the Self-other, weakly negatively with internalizing symptoms and weakly positively with quality of life. The Self-other subscale was also weakly and negatively related to the externalizing symptoms. Furthermore, the Strong emotions were weakly positively associated with internalizing symptoms, weakly negatively related to quality of life, and moderately positively related to externalizing symptoms.

Table 23

Descriptive statistics and bivariate relationships (Pearson's correlation coefficients) of study variables (N = 384)

	M	*SD*	Skewness	Kurtosis	α	1	2	3	4	5	6	7
1. Internal-self	3.71	0.75	-0.17	-0.23	.81	—						
2. Internal-other	3.66	0.85	0.07	-0.25	.82	.23*	—					
3. Self-other	4.54	0.64	-0.54	0.23	.67	.29*	.17*	—				
4. Strong emotions	3.82	1	-0.30	-0.38	.80	-.51*	-.11	-.13	—			
5. Internalizing	7.26	3.75	0.28	-0.58	.71	-.43*	-.14*	-.03	.22*	—		
6. Externalizing	7.22	3.39	0.33	-0.44	.70	-.46*	-.01	-.38*	.40*	.25*	—	
7. Quality of life	20.2	4.33	-0.50	-0.15	.77	.50*	.17*	.13	-.24*	-.67*	-.38	—

Note. Internalizing subscale of The Strengths and Difficulties Questionnaire, *Externalizing* subscale of The Strengths and Difficulties Questionnaire, *Quality of life* the Erfassung der Lebensqualität Kindern und Jugendlichen total score.

* $p < .007$ ($\alpha = .05/7$, using Bonferroni correction)

VI.2.3. Associations with the demographic variables

We found significant gender differences in the Self-other subscale, $t(382) = -2.98$, $p = .003$. The effect size was small, Cohen's $d = -.34$. Girls had significantly higher scores on the Self-other subscale ($M = 4.60$, $SD = 0.61$) than boys ($M = 4.38$, $SD = 0.68$). The other demographic characteristics were unrelated to the RFQY subscales.

VI.3. Subdiscussion

This study aimed to translate the Reflective Function Questionnaire for Youth into Hungarian and present its psychometric properties. We also aimed to assess the relationship between mentalizing, demographic characteristics, psychopathology and quality of life, with the latter association being of particular interest as we are not aware of other studies that have examined this relationship among adolescents. The exploratory factor analysis resulted in four factors: Internal-self, Internal-other, Self-other and Strong emotions, which showed adequate psychometric properties with stable factor loadings and acceptable Cronbach's α coefficients. The first two factors correspond to Perkins' (2009) Internal-self and Internal-other factors, the third factor captures the awareness of how one's behaviour impacts others and how others' behaviour affects one's mental states. The fourth factor is Strong emotions, which comes as no surprise, as the literature indicates strong associations between emotion regulation and mentalizing skills (Schwarzer et al., 2021; Gambin et al., 2020).

We expected that higher levels of mentalizing would be associated with improved quality of life, since in previous pieces of research mentalizing showed robust positive associations with social and role functioning, happiness, self-esteem, resiliency, and transcendence (Ballespí et al., 2018, 2021b). Quality of life was positively associated with the Internal-self and the Internal-other subscales, which is in agreement with the studies by Ballespí et al. (2018, 2021). The Strong emotions subscale was also negatively related to the adolescents' quality of life. The relationship between quality of life and Strong emotions is also in line with prior studies, which indicated a strong relationship between emotion regulation and quality of life (Chervonsky & Hunt, 2019). The Internal-self's relationship with quality of life evidenced the largest effect size, while the Internal-other' association had the smallest effect size. However, the Self-other mentalizing was unrelated to quality of life. It is worth noting that the majority of the ILK items relate to aspects of quality of life that are independent of others, such

as being alone, physical health, and educational achievement, whereas only two items relate to quality of life within relationships, such as relationships with peers and family members.

Previous research regarding the associations between psychopathology and mentalizing is controversial. Ballespí et al. (2018, 2021) found no significant association between the Self-other mentalizing polarities and proxy-reported internalizing or externalizing symptoms of adolescents, while many pieces of research indicated that specific mental disorders symptoms are related to mentalizing difficulties (Ha et al., 2011; Bizzi et al., 2019; Taubner et al., 2013; Ballespí et al., 2021a; Ballespí et al., 2022). Our results are in line with previous research, which indicated that internalizing problems are related to both self-mentalizing (Ballespí et al., 2021a; Ballespí et al., 2022) and other-mentalizing (Ballespí et al., 2018) difficulties. Chevalier et al.'s meta-analysis (2023) showed that mentalizing assessed in a relational context is unrelated to internalizing problems. In line with this result, we also found that the Self-other mentalizing subscale, reflecting the relationship between an individual's internal mental state and that of others, was unrelated to internalizing symptoms. In addition, it should be noted that although the SDQ screens for emotional and peer relationship problems, it does not measure all the internalizing symptoms that may affect adolescents (such as social anxiety). Therefore, the lack of association might by due to the measurement. Consequently, the lack of association may be a result of the measurement.

Furthermore, our results regarding externalizing symptoms are also in agreement with previous research, as youth with externalizing disorders have difficulties identifying their own emotions (Roberton et al., 2012). In line with this, we found a negative relationship between Internal-self mentalizing and externalizing symptoms. Furthermore, we also identified a negative relationship between the Self-other mentalizing and externalizing symptoms, which also comes as no surprise, as externalizing symptoms primarily affect the individual's connection to others (Achenbach, 1966).

Both externalizing and internalising symptoms were related to the Strong emotions scale, which is in line with the strong association between psychiatric symptoms and emotional regulation difficulties (Schäfer et al., 2017). Similar to the study conducted by Bizzi et al. (2019), the effect sizes between psychopathology and mentalizing were larger in the case of externalizing symptoms than in the case of internalizing symptoms.

We also found a significant gender difference in the Self-other subscale, as girls had significantly higher scores than boys. The Self-other subscale consists of items measuring perspective taking, e.g., „*In an argument, I keep the other person's point of view in mind."* and empathic understanding, e.g., „*I pay attention to the impact of my actions on others' feelings*".

The results of our study are similar to previous research since females often score higher on tests of empathy, perspective-taking and social sensitivity than males (Schulte-Rüther et al., 2008; Fukushima & Hiraki, 2006; Rueckert & Naybar, 2008). Furthermore, men are more likely to suffer from psychiatric disorders such as autism spectrum disorder, conduct disorder, and antisocial personality disorder, which are characterized by a lack of empathy and perspective-taking (APA, 2013; Chakrabarti and Baron-Cohen, 2006). In the study by Van der Graaff et al. (2014), adolescent girls also demonstrated higher levels of empathic concern than boys, and while girls' empathic concern remained stable throughout adolescence, boys' empathic concern decreased from early to middle adolescence with a rebound to the initial level thereafter. Additionally, a gender difference in perspective-taking also emerged during adolescence, with girls' increases being steeper than boys'.

The current study has several limitations that should be acknowledged. Firstly, its cross-sectional design limits the ability to establish causal relationships. Future longitudinal studies are needed to provide more robust conclusions about the relationships examined. Secondly, the use of self-report measures introduces potential biases, including the influence of contextual factors, memory, and socially desirable responses. Additionally, the limitations of the RFQ should be considered. Firstly, filling out a self-report measure assumes a certain level of reflective capacity, which may not be uniform across all participants. Incorporating alternative measures, such as observational measures, other informant measures, experimental measures, and qualitative research designs, could be useful. Furthermore, since the original RFQ was initially developed for adults, the process of adapting it for adolescents might not fully account for developmental differences. The information that parents and teachers provide besides the self-report measures might also play a critical role, so using multi-informant methods could provide more reliable information about the complex relationships between the measured constructs. Further research is required to replicate our findings in clinical samples. In addition, it should be noted that girls constitute the majority of our sample, which may have implications. First, females tend to score higher on measures of social cognition than boys (Schulte-Rüther et al., 2008; Fukushima & Hiraki, 2006; Rueckert & Naybar, 2008). Furthermore, it has been shown that males are more likely to experience externalizing symptoms, while females are more likely to experience internalizing symptoms (APA, 2013; Chakrabarti & Baron-Cohen, 2006). In addition, the physical and psychological dimensions of quality of life decline more rapidly for females than for males during adolescence (Bisegger et al., 2005). Consequently, future studies should be conducted with an equal gender distribution, because this may have influenced the scale's mean in the current study.

Despite these limitations, our study provides the first psychometric support for the Hungarian version of the RFQY. The RFQY's correlates with global measures of mental health indicate that adolescents suffering from internalizing, externalizing symptoms or lower levels of quality of life could benefit from Mentalization-Based Treatment (MBT; Bateman & Fonagy, 2004).

VII. Discussion and conclusion

In the first two studies, both versions of The Parental Reflective Functioning Questionnaires were adapted into Hungarian, since prior to this dissertation there were no validated questionnaires available in the Hungarian language to measure parental reflective functioning. In study three, we examined the predictors of parenting competence of mothers raising adolescents since most previous studies focus on adolescents' mental health and research regarding parental mentalizing is usually conducted on parents of small children. Finally, in study four, we presented the Hungarian version of the Reflective Function Questionnaire for Youth, as at the start of this dissertation there was a gap in measuring adolescent mentalizing capacity in Hungary. Our studies aimed to fill in these gaps, as to make mentalizing measurable and assess its correlates in the Hungarian samples.

In studies one and two, we aimed to confirm the three-factor structure of both versions of the PRFQ, since from a theoretical perspective, the three factors refer to relatively distinct features of parental mentalizing (Luyten et al., 2017) and the majority of studies supported the PRFQ's three-factor structure (Wendelboe et al., 2021; Ye et al., 2022; Pazzagli et al., 2017; DeRoo et al., 2019; Moreira & Fonseca, 2023). In the case of the PRFQ-0-5, we confirmed the three-factor solution. In the case of the adolescent version, only two factors emerged: Certainty about Mental States and Interest and Curiosity subscales, while the Pre-Mentalizing factor completely disappeared. In the case of the PRFQ-0-5, we addressed many psychometric limitations for the use of the Pre-Mentalizing scale, including the nature of the community sample and the complexity of the scale. However, besides the limitations, we also discussed the importance of measuring PM. Only Pre-Mentalizing was associated with general mentalizing impairment, indicating that PM is the only PRFQ subscale, which taps into potentially more negative features of mentalizing. Furthermore, measuring Pre-Mentalizing seemed even more critical, as it was also associated with all the attachment subscales and even object relations. Besides the limitations of the PM scale, both questionnaires showed adequate psychometric properties. As a consequence of the associations between parental reflecting functioning, general mentalizing, attachment, and object relations, we concluded that developing interventions that target parental mentalizing (Slade, 2005) are needed in Hungary.

In study three, we aimed to explore the relationship between parental mentalizing, attachment style, parental sense of competence, and stress among parents of adolescents. Adolescence is a time of challenges (Crone & Dahl, 2012; Rudolph, 2002; Zarrett & Eccles, 2006); nevertheless, the mental health of adolescents' parents receives little attention. Previous

studies indicated that parental reflective functioning, attachment, parental sense of competence, and stress are related constructs (Gordo et al., 2018; Luyten et al., 2017; McBride, 1989). However, no study tested these relationships in a community sample of parents of adolescents. We conducted a moderated mediation analysis with maternal attachment style as the independent variable. The dimensions of parental sense of competence, efficacy and satisfaction were chosen as the dependent variables, and stress was the moderator. The mediator was the Certainty about Mental States (CMS) aspect of parental mentalizing. All things considered, our results indicate that it is important to target the attachment style itself during psychotherapy for mothers who have insecure attachment styles. Additionally, in the case of the fearful attachment style, the attachment style also affects parental efficacy, which is the cognitive component of parental competence. In sum, it is necessary to address the cognitive consequences of the fearful attachment style on parental efficacy during interventions. Our findings suggest that stress reduction is an important component of interventions for mothers of adolescents, as it decreases their mentalizing capacity. Besides reducing stress, our findings suggest that targeting parental mentalizing during therapeutic work with mothers of adolescents with dismissing attachment styles can also increase their perceived parental competence.

Study four aimed to translate the Reflective Function Questionnaire for Youth (RFQY) into Hungarian. An important correlate of mental health problems is mentalizing capacity, which appears to be particularly influential during adolescence (Clarke et al., 2020). There has been a substantial amount of research examining the relationship between mentalizing and specific mental disorders in the past (Fonagy et al., 2016), however, only a few studies have examined the relationship between mentalizing and global measures of mental health in the context of adolescent psychopathology (Ballespí et al., 2018, 2021b). However, quality of life has not been studied in relation to mentalizing capacity among adolescents. As a consequence, this study evaluated the relationship of mentalizing with psychopathology and quality of life among adolescents. We identified four factors of the RFQY: Internal-self, Internal-other, Self-other, and Strong emotions. The subscales showed adequate psychometric properties. The RFQY's correlates indicate that Hungarian adolescents suffering from lower levels of quality of life or psychopathology could benefit from Mentalization-Based Treatment (Bateman & Fonagy, 2004). More precisely, to improve youth's quality of life, we recommend focusing on the internal-self and the internal-other mentalizing besides emotion regulation according to our study. In case of externalizing symptoms, targeting the internal-self and the self-other domains of mentalizing, and improving emotion regulation could be beneficial. For adolescents suffering

from internalizing symptoms, we recommend aiming at enhancing internal-self and internal-other mentalizing besides focusing on emotion regulation.

VIII. New results

My doctoral work contributed the following new findings to our field of study:

- New results were obtained in Studies 1 and 2 since we adapted both versions of the Parental Reflective Functioning Questionnaire into Hungarian, which showed adequate psychometric properties.

- It is also a new finding that our research indicates that parental reflective functioning, especially Pre-Mentalizing, is associated with general mentalizing, maternal attachment dimensions and object relations among Hungarian mothers of children up to five years of age.

- It is considered a new result, both at the domestic and international level, that we identified bivariate and multivariate associations between attachment, mentalizing, stress and competence among mothers of adolescents.

- Another new finding is that the Hungarian version of the Reflective Function Questionnaire for Youth also showed adequate psychometric properties.

- It is also a new result, both at the domestic and international level, that the present study is the first to demonstrate that mentalizing deficits in adolescents are associated with poorer quality of life.

IX. Outlooks

The purpose of the studies presented in my dissertation was to make parental and adolescent mentalization measurable in the Hungarian-speaking area, as well as to explore the correlations of these constructs with mental health measures in Hungarian samples.

Since these studies, we have started several types of research, in which we examine the correlations of parental and adolescent mentalizing with ADHD symptoms, callous-unemotional traits and aggression in adolescents. Hopefully, in the future, we can also shed light on the role of mentalizing in antisocial behaviour.

In addition to these studies using questionnaires, we have also developed several mentalizing-based intervention programs. Introduction trauma, stress, and attachment problems are negatively related to the development of mentalizing (Fonagy et al., 2016). Children raised in institutional care are more exposed to these difficulties, therefore the development of population-specific interventions that aim to improve mentalization skills would be highly desirable. Therefore, we launched a mentalizing-based intervention targeting institutional care staff in Hungary. In the interventions, besides mentalizing-focused psychoeducation, we focused on the issues that the staff perceived as most difficult using the mentalizing framework. We also aimed to prevent the staff's burnout.

Recently, we delivered online, cost-effective relaxation materials to Hungarian high school students in the countryside, where there is no psychologist in the school available. We supplemented the relaxation with mentalizing tasks.

Since we distributed the questionnaires in the RFQY study paper format to schools, after filling out the questionnaires, several teachers gave the young people sessions related to mental health and emotions. I hope that with these practical activities, I can contribute to the development of the mental health of Hungarian families. In the future, I will also try to deliver as many prevention and intervention programs as possible to those who need them the most.

For me, the theory of mentalizing is one of the most complex I came across during my psychological studies. It integrates the methods and results of psychoanalysis, cognitive-behavioural therapy and neuroscience, among others (Bateman & Fonagy, 2004). Delving into mentalization gave me a very complex way of seeing, which I try to use with all my patients so that even during clinical work I can help those who need it.

During my dissertation, I was able to delve into the use of modern statistical methods. Since my PhD years, I have often helped other researchers with statistical analyses e.g. focusing

on the emotion regulation of chronically ill adolescents (Cserép et al., 2022, 2023) or the effects of trauma (Szeifert et al., 2023).

Last but not least, I hope that during the many articles (17), lectures (34), conference presentations (43), bachelor (21) and master theses (8), I managed to bring this complex, and sometimes quite abstract, difficult-to-understand approach and research down to Earth to as many people as possible.

X. References

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Appendix A. List of conference presentations

Losonczy, L., Kozma, E., Miklósi, M., & **Szabó, B.** (2023, September 19.). Mindfulness in practice - workshop at the Researchers' Night. [Workshop] Budapest, Hungary.

Szabó, B. , Miklósi, M., Sharp, C., & Futó, J. (2023, September 28– October 1). Does mentalizing moderate the relationship between psychopathology and quality of life? [Poster presentation] 23rd World Congress of Psychiatry 2023, Vienna , Austria .

Tamás, B., & **Szabó,** B. (2023, March 25–28). Adolescents ' quality of life in the light of mentalization and emotion regulations . [Poster presentation] 31st European Congress of Psychiatry 2023, online.

Lestyán, L., & **Szabó, B** . (2023, March 25–28). The relationship of the child's externalizing and internalizing symptoms with the parent's maladaptive schemas and attachment style . [Poster presentation] 31st European Congress of Psychiatry 2023, online.

Szabó, B. , Miklósi, M., Sharp, C., & Futó, J. (2023, March 25–28). Does mentalizing moderate the relationship between psychopathology and quality of life? [Poster presentation] 31st European Congress of Psychiatry 2023, online.

Mayer, Z., & **Szabó, B.** (2023, June 8–10). The relationship between reflective function, attachment and quality of life in adolescents. [Poster presentation] Hungarian Psychological Society (MPT) XXX. National Scientific Assembly, Pécs, Hungary.

Szabó, B. (2023, June 8–10). Mentalization and quality of life among adolescents. [Poster presentation] Hungarian Psychological Society (MPT) XXX. National Scientific Assembly, Pécs, Hungary.

Bessenyei, B., & **Szabó, B.** (2023, June 8–10). The relationship between perception of parental conflicts, emotion regulation and quality of life among adolescents. [Poster presentation] Hungarian Psychological Society (MPT) XXX. National Scientific Assembly, Pécs, Hungary.

Békefi, AZ, & **Szabó, B.** (2023, June 8–10). The effect of the family communication pattern on the parent-child bond and the child's quality of life. [Poster presentation] Hungarian Psychological Society (MPT) XXX. National Scientific Assembly, Pécs, Hungary.

Tamás, B., & **Szabó, B**. (2023, June 8–10). Adolescents' quality of life in the light of mentalizing ability and emotion regulation. [Poster presentation] Hungarian Psychological Society (MPT) XXX. National Scientific Assembly, Pécs, Hungary.

Lestyán, L., & **Szabó, B**. (2023, June 8–10) . The relationship of the parent's maladaptive

schemas through the quality of the attachment with the parent's well-being and the perception of the child's externalizing and internalizing symptoms and prosociality . [Poster presentation] Hungarian Psychological Society (MPT) XXX. National Scientific Assembly, Pécs, Hungary.

Lestyán, L., & **Szabó, B**. (2023, May 18 – 20). The relationship of the parent's maladaptive schemas through the quality of the attachment with the parent's well-being and the perception of the child's externalizing and internalizing symptoms and prosociality . [Poster presentation] The Hungarian Society of Child and Youth Psychiatry and Allied Professions ' Annual Conference , Budapest, Hungary.

Szabó, B., Miklósi, M., & Futó, J. (2023, May 18 – 20). Mentalization and quality of life among adolescents. [Poster presentation] The Hungarian Society of Child and Youth Psychiatry and Allied Professions ' Annual Conference , Budapest, Hungary.

Hunyadi, K., **Szabó, B**., & Miklósi, M. (2023, May 18 – 20). The relationship of parental reflective function with cognitive emotion regulation and parental perception of the child. [Poster presentation] The Hungarian Society of Child and Youth Psychiatry and Allied Professions ' Annual Conference , Budapest, Hungary.

Békefi, AZ, **Szabó, B**., & Miklósi, M. (2023, May 18 – 20). The effect of the family communication pattern on the parent-child bond and the child's quality of life. [Poster presentation] The Hungarian Society of Child and Youth Psychiatry and Allied Professions ' Annual Conference , Budapest, Hungary.

Németh, B., Sulyok, RS, **Szabó, B.**, Korényi , R., & Miklósi, M. (2022). "You can't understand this yet" - Adult-centeredness among Hungarian parents. [Poster presentation] *Closing and opening - Resources, reactions and coping in times of change* - Hungarian psychological society national scientific assembly 2022.

Szabó, B., Futó, J., & Miklósi, M. (2022). Seeing ourselves from the outside, others from the inside - mentalization in the parent-child relationship. [Poster presentation] *Closing and opening - Resources, reactions and coping in times of change* - Hungarian psychological society national scientific assembly 2022.

Tamás, B., & **Szabó, B**. (September 28 - October 1). Adolescents' quality of life in the light of mentalizing abilities and emotion regulation difficulties. [Poster presentation] How to build bridges ? Questions , Challenges and Solutions in Psychiatry Hungarian Psychiatric Society XXV. assembly, Budapest, Hungary.

Szabó, B., Miklósi, M., & Futó, J. (September 28 - October 1). Seeing ourselves from the

outside, others from the inside - Mentalization and bonding in the parent-child relationship. [Poster presentation] How to build bridges ? Questions , Challenges and Solutions in Psychiatry Hungarian Psychiatric Society XXV. assembly, Budapest, Hungary.

Siska, D., Cserép, M., & **Szabó, B**. (September 28 - October 1). The relationship between mentalization , attachment and eating attitudes among adolescents . [Poster presentation] How to build bridges ? Questions , Challenges and Solutions in Psychiatry Hungarian Psychiatric Society XXV. assembly, Budapest, Hungary.

Losonczy, LA, & **Szabó, B.** (September 28 - October 1). The relationship between parental reflective function, cognitive emotion regulation, and the child's perceived well-being. [Poster presentation] How to build bridges ? Questions , Challenges and Solutions in Psychiatry Hungarian Psychiatric Society XXV. assembly, Budapest, Hungary.

Szabó, B., & Lestyán, lilla . (September 28 - October 1). The relationship of children's externalizing and internalizing symptoms with the parent's maladaptive schemas and the quality of the attachment. [Poster presentation] How to build bridges ? Questions , Challenges and Solutions in Psychiatry Hungarian Psychiatric Society XXV. assembly, Budapest, Hungary.

Szabó, B., Miklósi, M., Lestyán, L., Losonczy, L., Tamás, B., Siska, D., ... Futó, J. (September 28 - October 1). Bridges in the parent-child relationship: presentation of mentalization and attachment theory research results. [Poster presentation] How to build bridges ? Questions , Challenges and Solutions in Psychiatry - Hungarian Psychiatric Society XXV. assembly, Budapest, Hungary.

Szabó, B. , Nagy, E., Békefi, A., & Futó, J. (2022, June 4-7). Children living in institutions care : How can mentalization-based interventions improve their perspective-taking and conflict-resolution skills ? [Poster presentation] 30th European Congress of Psychiatry 2022, online.

Szabó, B., Miklósi, M., & Futó, J. (2022, June 4-7). Parental reflective functioning and the perception of the child. [Poster presentation] 30th European Congress of Psychiatry 2022, online.

Szabó, B. , Kozma, E., & Futó, J. (2022, May 26-28). Mentalizing-based conflict management intervention in children's home . [Workshop] Closure and Opening - Resources , Reactions and Coping in Times of Change - The Hungarian Society of Child and Youth Psychiatry and Allied Professions ' Annual Conference , online.

Siska, D., & **Szabó, B**. (2022, May 26-28). Dieting from the outside – inside – the relationship

of mentalization, attachment and eating attitudes among adolescents. [Poster presentation] Closure and Opening - Resources , Reactions and Coping in Times of Change - The Hungarian Society of Child and Youth Psychiatry and Allied Professions ' Annual Conference , online.

Tamás, B., & **Szabó, B**. (2022, May 26-28). Adolescents' quality of life in the light of mentalizing abilities and emotion regulation difficulties. [Poster presentation] Closure and Opening - Resources , Reactions and Coping in Times of Change - The Hungarian Society of Child and Youth Psychiatry and Allied Professions ' Annual Conference , online.

Losonczy, L., & **Szabó, B**. (2022, May 26-28). The relationship between parental reflective function, cognitive emotion regulation, and the child's perceived well-being. [Poster presentation] Closure and Opening - Resources , Reactions and Coping in Times of Change - The Hungarian Society of Child and Youth Psychiatry and Allied Professions ' Annual Conference , online.

Szabó, B. , Miklósi, M., Boda, M., & Futó, J. (2022, June 4-7). The adaptation of The parental reflective functioning questionnaire adolescent version to the Hungarian language and presentation of it psychometric characteristics . [Poster presentation] 30th European Congress of Psychiatry 2022, online.

Szabó, B. , Miklósi, M., & Futó, J. (2022, June 4-7). The relationship between parental reflective functioning , attachment style , parental competence , and stress . [Poster presentation] 30th European Congress of Psychiatry 2022, online.

Szabó, B., & Miklósi, M. (2022, June 4-7). The relationship between mothers ' attachment style , mindful parenting , and perception of the child . [Poster presentation] 30th European Congress of Psychiatry 2022, online.

Szabó, B., Nagy, E., Békefi, A., & Futó, J. (2022, June 4-7). Children living in institutions care : How can mentalization-based interventions improve their perspective-taking and conflict resolution skills ? [Poster presentation] 30th European Congress of Psychiatry 2022, online.

Szabó, B. , & Miklósi, M. (2022, July 4-10). Seeing ourselves from the outside , seeing others from the inside - The development of mentalization . [Workshop] Lecture . 25th anniversary Carpathians Basin Summer University, Budapest, Hungary.

Szabó, B., & Miklósi, M. (2021). Attachment and mindfulness - 24. [Poster presentation] Psinapsis Future Research Poster section, Budapest. Hungary.

Szabó, B., Miklósi, M., Boda, M., & Futó, J. (2021, August 26-28). Adapting the Adolescent

Version of the Parental Reflective Functions Questionnaire into Hungarian and presenting its psychometric characteristics. [Poster presentation] A path to a resilient future . The Hungarian Psychological Society XXIX. National Scientific Assembly, Székesfehérvár, Hungary.

Szabó, B., & Miklósi, M. (2021, August 26-28). Attachment and mindful parenting. [Poster presentation] . The path to a resilient future . The Hungarian Psychological Society XXIX. National Scientific Assembly, Székesfehérvár, Hungary.

Sulyok, RS, Takács, L., Horváth, S., Jakobovits , L., Sebdenics , R., Szenetes-Hajler , B., **Szabó, B.**, & Miklósi, M. (2021, May 13-15). BEHAVIORAL DISABILITY, GENDER DIFFERENCES AND PARENTAL BEHAVIOR. [Poster presentation] *MAGYIPETT's 44th Congress Changing World* , online.

Szabó, B., Miklósi, M., & Futó, J. (2021, September 24.). Seeing ourselves from the outside, seeing others from the inside - The development of mentalization - workshop at the Researchers' Night. [Workshop] Budapest, Hungary.

Szabó, B., & Miklósi, M. (2021, May 13-15). Attachment and mindfulness parenting . [Poster presentation] *MAGYIPETT's 44th Congress Changing World* , online.

Futó, J., **Szabó, B**., Nagy, E., Kárpáti, J., Fekete, LS, & Békefi, A. (2021. September 28 – October 1). Mentalization -based conflict management intervention in orphanages-experiences from a pilot study. [Workshop] MPT Traveling Assembly Psychiatry during and after the pandemic , online.

Szabó, B., Futó, J., Miklósi, M., & Boda, M. (2021. September 28 – October 1). Adapting the Adolescent Version of the Parental Reflective Functions Questionnaire into Hungarian and presenting its psychometric characteristics. [Poster presentation] MPT Traveling Assembly Psychiatry during and after the pandemic , online.

Appendix B. The new Hungarian questionnaires

These new Hungarian questionnaires are available for free from this dissertation.

A validált kérdőívek szabadon használhatók a disszertációból.

The Parental Reflective Functioning Questionnaire (0-5)
A Szülői Reflektív Funkció Kérdőív (0-5)

Az alábbiakban néhány Önnel és a gyermekével kapcsolatos állítás található. Kérjük olvassa el az egyes állításokat, és döntse el milyen mértékben ért vagy nem ért velük egyet. Ehhez kérjük használja a következő skálát: 7-tel jelölje, ha határozottan egyetért; és 1-gyel, ha határozottan nem ért egyet, a középponttal, ha semleges vagy nem döntött, ami 4.

	Határozottan nem értek egyet	2	3	4	5	6	Határozottan egyetértek
1. Csak akkor vagyok biztos benne, hogy szeret a gyermekem, amikor mosolyog rám.	o	o	o	o	o	o	o
2. Mindig tudom, hogy mit akar a gyermekem.	o	o	o	o	o	o	o
3. Szeretek elgondolkozni a gyermekem viselkedése és érzései mögötti okokon.	o	o	o	o	o	o	o
4. Idegenek társaságában a gyermekem azért kiabál, hogy zavarba hozzon engem.	o	o	o	o	o	o	o
5. Mindig tökéletesen tudom, hogy (éppen) mi jár a gyermekem fejében.	o	o	o	o	o	o	o
6. Sokat gondolkozom azon, mit gondol és érez a gyermekem.	o	o	o	o	o	o	o
7. Nehéznek találom a gyermekem fantáziajátékában való aktív részvételt.	o	o	o	o	o	o	o
8. Mindig előre meg tudom jósolni, hogy mit fog csinálni a gyermekem.	o	o	o	o	o	o	o
9. Gyakran kíváncsi vagyok, hogy mit is érezhet a gyermekem.	o	o	o	o	o	o	o
10. A gyermekem néha azért betegszik meg, hogy megakadályozzon abban, amit csinálni szeretnék.	o	o	o	o	o	o	o
11. Néha félre tudom érteni a gyermekem reakcióit.	o	o	o	o	o	o	o

12. Próbálom a helyzeteket a gyermekem szemszögéből látni.	o	o	o	o	o	o	o
13. Amikor a gyermekem nyűgös, csak azért teszi, hogy bosszantson engem.	o	o	o	o	o	o	o
14. Mindig tudom, hogy mit miért teszek a gyermekemmel.	o	o	o	o	o	o	o
15. Próbálom megérteni az okokat, amiért a gyermekem rosszalkodik.	o	o	o	o	o	o	o
16. Gyermekem viselkedése gyakran túl zavaros ahhoz, hogy megpróbáljam megérteni.	o	o	o	o	o	o	o
17. Mindig tudom, hogy gyermekem miért viselkedik úgy ahogy.	o	o	o	o	o	o	o
18. Úgy gondolom, hogy nincs értelme megpróbálnom kitalálni, hogy mit érez a gyermekem.	o	o	o	o	o	o	o

Elemzéseink során a 11. és a 18. tétel nem illeszkedett a magyar mintán, így ezeket a tételeket már nem tartalmazza az SPSS syntax:

```
COMPUTE PRFQ_PM = MEAN (PRFQ1, PRFQ4, PRFQ7, PRFQ10, PRFQ13, PRFQ16).

COMPUTE PRFQ_CM = MEAN (PRFQ2, PRFQ5, PRFQ8, PRFQ14, PRFQ17).

COMPUTE PRFQ_IC = MEAN (PRFQ3, PRFQ6, PRFQ9, PRFQ12, PRFQ15).

VAR LABELS PRFQ_PM "PRFQ Pre-Mentalizing Modes".

VAR LABELS PRFQ_CM "PRFQ Certainty about Mental States".

VAR LABELS PRFQ_IC "PRFQ Interest and Curiosity in Mental States".

EXECUTE.

RELIABILITY
  /VARIABLES= PRFQ1 PRFQ4 PRFQ7 PRFQ10 PRFQ13 PRFQ16
  /SCALE('PM') ALL
  /MODEL=ALPHA.


RELIABILITY
  /VARIABLES= PRFQ2 PRFQ5 PRFQ8 PRFQ14 PRFQ17
  /SCALE('CM') ALL
```

```
  /MODEL=ALPHA.

RELIABILITY
  /VARIABLES= PRFQ3 PRFQ6 PRFQ9 PRFQ12 PRFQ15
  /SCALE('IC') ALL
  /MODEL=ALPHA.
```

The Parental Reflective Functioning Questionnaire Adolescent Version
A Szülői Reflektív Funkció Kérdőív Serdülő változata

Az alábbiakban néhány Önnel és a gyermekével kapcsolatos állítás található. Kérjük olvassa el az egyes állításokat, és döntse el milyen mértékben ért vagy nem ért velük egyet. Ehhez kérjük használja a következő skálát: 7-tel jelölje, ha határozottan egyetért; és 1-gyel, ha határozottan nem ért egyet, a középponttal, ha semleges vagy nem döntött, ami 4.

	Határozottan nem értek egyet	2	3	4	5	6	Határozottan egyetértek
1. Csak akkor vagyok biztos benne, hogy szeret a gyermekem, amikor mosolyog rám.	o	o	o	o	o	o	o
2. Mindig tudom, hogy mit akar a gyermekem.	o	o	o	o	o	o	o
3. Szívesen gondolkozom a gyermekem viselkedése és érzései mögötti okokon.	o	o	o	o	o	o	o
4. Idegenek társaságában a gyermekem azért viselkedik neveletlenül, hogy zavarba hozzon engem.	o	o	o	o	o	o	o
5. Mindig tökéletesen tudom, hogy (éppen) mi jár a gyermekem fejében.	o	o	o	o	o	o	o
6. Sokat gondolkozom azon, mit gondol és érez a gyermekem.	o	o	o	o	o	o	o
7. Nehéznek találom, hogy aktívan bekapcsolódjak a gyermekem fantáziavilágába.	o	o	o	o	o	o	o
8. Mindig előre meg tudom jósolni, hogy mit fog csinálni a gyermekem.	o	o	o	o	o	o	o
9. Gyakran szeretném tudni, hogyan érzi magát a gyermekem.	o	o	o	o	o	o	o

10. A gyermekem néha azért betegszik meg, hogy megakadályozzon abban, amit csinálni akarok.	o	o	o	o	o	o	o
11. Néha félre tudom érteni a gyermekem reakcióit.	o	o	o	o	o	o	o
12. Próbálom a helyzeteket a gyermekem szemszögéből látni.	o	o	o	o	o	o	o
13. Amikor a gyermekem nehezen kezelhető, csak azért teszi, hogy engem bosszantson.	o	o	o	o	o	o	o
14. Mindig tudom, hogy mit miért teszek a gyermekemmel.	o	o	o	o	o	o	o
15. Próbálom megérteni az okokat, amiért a gyermekem rosszul viselkedik.	o	o	o	o	o	o	o
16. Gyermekem viselkedése gyakran túl zavaros ahhoz, hogy megpróbáljam megérteni.	o	o	o	o	o	o	o
17. Mindig tudom, hogy gyermekem miért viselkedik úgy ahogy.	o	o	o	o	o	o	o
18. Úgy gondolom, hogy nincs értelme megpróbálnom kitalálni, hogy mit érez a gyermekem.	o	o	o	o	o	o	o

A magyar mintán rosszul illeszkedő tételek már nem szereplnek a syntaxban:

RECODE PRFQ11 (1=7) (2=6) (3=5) (4=4) (5=3) (6=2) (7=1) INTO PRFQ11rr.

COMPUTE PRFQ_CM = MEAN (PRFQ2, PRFQ5, PRFQ8, PRFQ11rr, PRFQ14, PRFQ17).

COMPUTE PRFQ_IC = MEAN (PRFQ3, PRFQ6, PRFQ9, PRFQ12, PRFQ15).

VAR LABELS PRFQ_CM "PRFQ Certainty about Mental States".

VAR LABELS PRFQ_IC "PRFQ Interest and Curiosity in Mental States".

EXECUTE.

```
RELIABILITY
  /VARIABLES= PRFQ2 PRFQ5 PRFQ8 PRFQ11rr PRFQ14 PRFQ17
  /SCALE('CM') ALL
  /MODEL=ALPHA.

RELIABILITY
  /VARIABLES= PRFQ3 PRFQ6 PRFQ9 PRFQ12 PRFQ15
  /SCALE('IC') ALL
  /MODEL=ALPHA.
```

The Reflective Function Questionnaire for Youth

A Reflektív Funkció Kérdőív Serdülő Változata

Kérjük, olvasd el az egyes állításokat és minden egyes állításnál jelöld azt a választ, amelyik a legjobban igaz Rád! Ne gondolkozz túl sokat rajta – hagyatkozz arra, ami először eszedbejut!

	Egyáltalán nem értek egyet	2	3	4	5	Teljesen egyetértek
1.Rejtély számomra, hogy mások mit gondolnak.	o	o	o	o	o	o
2.Sokat aggódom azon, hogy mások mit gondolnak és éreznek.	o	o	o	o	o	o
3.Az, ahogyan a szüleimet látom úgy változik, ahogy én is változom.	o	o	o	o	o	o
4.Tudom, hogy néha félreérthetem a legjobb barátaim reakcióit.	o	o	o	o	o	o
5.Úgy gondolom, azt, ahogy a szüleim bánnak velem, nem szabad azzal magyarázni, ahogyan őket nevelték.	o	o	o	o	o	o
6.Azt mondják rólam, hogy jó hallgatóság vagyok.	o	o	o	o	o	o
7.Gyakran kényszerítenem kell másokat arra, hogy azt tegyék, amit én akarok.	o	o	o	o	o	o
8.Mindig tudom, mit érzek.	o	o	o	o	o	o
9.Úgy érzem, ha nem vigyázok, megnehezíthetem egy másik személy életét.	o	o	o	o	o	o
10.Gyakran zavaros számomra, hogy mit érzek.	o	o	o	o	o	o
11.Úgy gondolom, hogy az emberek a saját meggyőződéseik és tapasztalataik alapján nagyon különbözőképpen láthatnak egy adott helyzetet.	o	o	o	o	o	o
12.Úgy gondolom, nincs értelme megpróbálni kitalálni, hogy mi jár valaki másnak a fejében.	o	o	o	o	o	o
13.Összezavarodom, amikor mások az érzéseikről beszélnek.	o	o	o	o	o	o

14.Úgy gondolom, hogy mások túl érthetetlenek ahhoz, hogy egyáltalán megpróbáljam megérteni őket.	o	o	o o o	o
15.Nehéznek találom, hogy mások nézőpontját megértsem.	o	o	o o o	o
16.Jó gondolatolvasó vagyok.	o	o	o o o	o
17.Nem mindig tudom, hogy mit miért teszek.	o	o	o o o	o
18.Figyelek az érzéseimre.	o	o	o o o	o
19.Egy vita során szem előtt tartom a másik nézőpontját.	o	o	o o o	o
20.Ha megértem, hogy miért teszik az emberek azt, amit tesznek, az segít abban, hogy megbocsássak nekik.	o	o	o o o	o
21.Szerintem egy konkrét helyzet megítélésének nincs egyetlen helyes módja.	o	o	o o o	o
22.Amikor dühbe gurulok, mondok olyan dolgokat, amikről nem is tudom, miért mondom.	o	o	o o o	o
23.A hozzám közeállállók gyakran nehezen értik meg, hogy miért csinálok bizonyos dolgokat.	o	o	o o o	o
24.Inkább hallgatok az eszemre, mint az ösztöneimre.	o	o	o o o	o
25.Általában pontosan tudom, mire gondolnak mások.	o	o	o o o	o
26.Nem emlékszem sokra a gyermekkoromból.	o	o	o o o	o
27.Az erős érzések gyakran elhomályosítják a gondolkodásomat.	o	o	o o o	o
28.Bízom az érzéseimben.	o	o	o o o	o
29.Amikor dühbe gurulok, mondok olyan dolgokat, amiket később megbánok.	o	o	o o o	o
30.Az emberekkel kapcsolatos megérzéseim szinte sohasem tévesek.	o	o	o o o	o
31.A tettek számomra többet jelentenek a szavaknál.	o	o	o o o	o

32.Gyakran érzem úgy, hogy üres a fejem.	o	o	o o o	o
33.Tudom, hogy olyan dolgokkal kapcsolatban is megváltozhatnak az érzéseim, ami iránt most erős érzéseim vannak.	o	o	o o o	o
34.Szívesen elgondolkozom azon, hogy mit miért csinálok.	o	o	o o o	o
35.Amikor bizonytalan vagyok magamban, bántó módon tudok viselkedni másokkal.	o	o	o o o	o
36.Néha anélkül teszek dolgokat, hogy ténylegesen tudnám, miért teszem azokat.	o	o	o o o	o
37.Valakinek a szeméből meg tudom mondani, hogyan érez.	o	o	o o o	o
38.Néha azon kapom magam, hogy mondok dolgokat és fogalmam sincs miért mondtam azokat.	o	o	o o o	o
39.Rájöttem, hogy ha pontosan akarom tudni, hogy mit érez valaki, akkor meg kell kérdeznem tőle.	o	o	o o o	o
40.Többnyire meg tudom jósolni, valaki másról, hogy mit fog csinálni.	o	o	o o o	o
41.Gyakran kíváncsi vagyok arra, hogy milyen szándék áll mások tetteinek a hátterében.	o	o	o o o	o
42.Megfigyeltem, hogy az emberek gyakran adnak olyan tanácsot másoknak, amit valójában maguk is követni szeretnének.	o	o	o o o	o
43.Érdekel, hogy mit jelentenek az álmaim.	o	o	o o o	o
44.Az, hogy mások viselkedését hogyan értelmezem függ attól, hogy éppen hogyan érzem magam.	o	o	o o o	o
45.Figyelek arra, hogy milyen hatással vannak a tetteim mások érzéseire.	o	o	o o o	o
46.Pontosan tudom, mire gondolnak a közeli barátaim.	o	o	o o o	o

A magyar mintán rosszul illeszkedő tételek már nem szereplnek a syntaxban:

```
RECODE RFQ7 RFQ13 RFQ14 RFQ15 RFQ23 RFQ32 RFQ38 (1=6) (2=5) (3=4) (4=3)
(5=2) (6=1) INTO RFQ7r RFQ13r RFQ14r RFQ15r RFQ23r RFQ32r RFQ38r.
EXECUTE.

COMPUTE
internalself=MEAN(RFQ1,RFQ8,RFQ17,RFQ36,RFQ32r,RFQ23r,RFQ18,RFQ13r,RFQ28).
EXECUTE.

COMPUTE internalother=MEAN(RFQ25,RFQ16,RFQ4,RFQ37,RFQ3,RFQ46,RFQ1).
EXECUTE.

COMPUTE selfother=MEAN(RFQ45,RFQ2,RFQ19,RFQ7r,RFQ14r,RFQ41,RFQ2,RFQ15r).
EXECUTE.

COMPUTE strongemotions=MEAN(RFQ29,RFQ22,RFQ38r,RFQ27,RFQ35,RFQ44).
EXECUTE.

RELIABILITY
  /VARIABLES= RFQ1 RFQ8 RFQ17 RFQ36 RFQ32r RFQ23r RFQ18 RFQ13r RFQ28
  /SCALE(' internalself ') ALL
  /MODEL=ALPHA.


RELIABILITY
  /VARIABLES= RFQ25 RFQ16 RFQ4 RFQ37 RFQ3 RFQ46 RFQ1
  /SCALE(' internalother ') ALL
  /MODEL=ALPHA.


RELIABILITY
  /VARIABLES= RFQ45 RFQ2 RFQ19 RFQ7r RFQ14r RFQ41 RFQ2 RFQ15r
  /SCALE(' selfother ') ALL
  /MODEL=ALPHA.


RELIABILITY
  /VARIABLES= RFQ29 RFQ22 RFQ38r RFQ27 RFQ35 RFQ44
  /SCALE(' strongemotions ') ALL
  /MODEL=ALPHA.
```