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PARENTAL PRACTICES AND CHILD NONCOMPLIANCE: INVESTIGATING THE ROLE OF PARENTAL TECHNIQUES, EMOTION REGULATION, AND LONG-TERM EFFECTS ON CHILD MENTAL HEALTH

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Notes. _____

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CHAPTER I: THEORETICAL BACKGROUND

1.1. Fundamentals of parental practices

1.1.1 Brief history of parental practices

Over the last two decades, parenting has received increased attention due to changes in the representation of children. This shift is evident at the state level, where, by the late 19th century, children became subjects of legal protection (Dupont et al., 2022). Specifically, currently, there is a legal prohibition of corporal punishment and spanking as a discipline in 67 worldwide states for now (for more details, see Global Partnership to End Violence against Children, 2018). This change was a result of the Committee for European Social Cohesion report (Daly, 2007). Based on its recommendations, which were based on two major areas, particularly, attachment and of parenting styles, parenting becomes a scientific matter, meaning that is no longer guided exclusively by common sense, now relying on expert knowledge and legal regulations (Dupont et al., 2022). At the societal level, a series of international changes have been observed regarding parents' parenting practices, such as higher proportion of parents identified as authoritative appears to be rising, in contrast to those classified as authoritarian, which seems to be declining (Dupont et al., 2022); parents tend to engage in spending more active time with their children (Craig et al., 2014; Dotti Sani & Treas, 2016). At the level of parenting perspectives, we can observe a gradual shift from behaviorism to approaches centered on attachment theory and emotion-focused parental interventions, child development, positive parenting, and the influence of technology (Yaffe et al., 2024; Jugovac et al., 2022). Authoritative parenting style (Baumrind's theory) is recognized as the most effective and supports the healthy development of children and adolescents (Pinquart, 2017). Moreover, it aligns with clinical child psychology which integrates these principles in behavioral parent training (Larzelere et al. 2017; Larzelere et al., 2020; Ulferts, 2020). A new shift in parenting approaches has emerged, termed "*exclusively positive parenting*" – EPP (Larzelere et al., 2017) or "*strong positive parenting"* - SPP (Holden et al., 2017). Currently, this approach appears to create a new controversy regarding the level of control exerted toward child.

1.1.2 Definitions regarding parenting and children's noncompliance and temper tantrums

1.1.2.1 Definitions parenting style and parenting practices

The parenting style concept is defined as a sum of parental attitudes regarding children and shaping an emotional climate within which parents express their practices (Darling & Steinberg, 1993), specifically, representing the "how" parents implement their practices toward children (Locke & Prinzie, 2002). In contrast, parental practices focus on behavioral components, specifically, representing "what" parents do. For example, when they set a limit and consequences for their child, parents might do it with warmth and structure, or with hostility and overreacting.

Parenting styles are defined based on two dimensions, demandingness and warmth (Baumrind, 1966). Based on variations on these two four types of parenting styles were created: authoritative, authoritarian, permissive, and neglectful (which is not considered a form of raising children and indicates a form of child abuse). The authoritarian parenting style is characterized by high demandingness and low warmth, whereas the authoritative parenting style is high in both dimensions. Authoritative parents set expectations, and require organized and compliant behaviors in their children, and in order to obtain that, they explain the reasoning behind their rules, and when the child refuses to conform they are open to understand the child's motives. In contrast, authoritarian parents prioritize obedience as a part of traditional structure, adhering to it as a standard; consequently, they expect the child to accept and comply with their directives without question. In other words, they set demands and assign household responsibilities to foster appreciation for effort and work, but at the same time they restrict the child's autonomy (Baumrind, 1966). Although both parenting typologies are strict using confrontive discipline, authoritative parents are firm, direct, forceful, and consistent. On the other hand, authoritarian parents

appeal to coercive discipline, which is peremptory, domineering, arbitrary, and focused on maintaining hierarchical family relationships (Baumrind et al., 2010). The permissive parenting style is characterized by low demandingness and high warmth. These parents are warm and affectionate, requiring few demands and household responsibilities, or compliance and organized behavior from their children. When they do set expectations, they consult the child about their decisions and give explanations. They also approach children's impulses, desires, or actions in a nonpunitive, accepting, and affirming manner, avoiding the exertion of control (Baumrind, 1966).

Parental practices are predominantly evaluated as specific parenting behaviors and associated characteristics (e.g., frequency, intensity), (Stevenson-Hinde, 1998). This differentiation allows researchers to make more precise distinctions, avoiding inaccurate inferences, for example, the use of practice "A" when expressed through the style "B" is linked to specific outcome "C" (Locke & Prinzie, 2002; Knowles, 2014). Parental practices associated with children's noncompliance and temper tantrum episodes often refer to discipline. The construct of discipline involves a wide range of parental practices aimed at reducing children's negative behaviors and increasing the desirable ones, discriminating between more effective and ineffective practices (Locke & Prinzie, 2002).

1.1.2 Definitions regarding children (noncompliance and temper tantrums)

Children's noncompliance is defined primarily as those episodes when children intentionally fail to perform an adult's request (e.g., from a parent, caregiver, or teacher) within 10 to 15 seconds (Kalb & Loeber, 2003; Barkley, 2013). This lack of compliance refers to children's failure to initiate the requested action, failure to maintain it until completion, or failure to follow established rules (Barkley, 2013). Specifically, noncompliance can be either, active or passively and it is categorized into three main types: (1) parent-oriented noncompliance (the child is negotiating and/or she/he is whining), (2) parent-avoiding noncompliance (the child is simply refusing and or she/he is passive regarding the adult's request) and (3) parent-opposing noncompliance (the child has a tantrum, is hitting and defiant) (Larzelere et al., 2018; Kuczynski & Kochanska, 1990; Kuczynski et al., 1987). In contrast, children's compliance refers to episodes when children obey the adult's demand (Kotler & McMahon, 2004) and can be categorized as situational compliance or committed compliance. Situational compliance refers to episodes when children perform the adult's request due to external control, needing to be prompt, while committed compliance refers to episodes when children follow the adult's demand due to his/her high motivation without needing the adult's prompting (Plata-Caviedes, 2018; Kochanska & Aksan, 1995; Kuczynski et al., 1987). When compliance or noncompliance is assessed through observational measurements the requests are frequently addressed in "do" or "don't" tasks.

Children's temper tantrums

Children's temper tantrum episodes refer to anger-related behaviors at three levels of intensity, labeled by Potegal and Davidson (2003) as low, intermediate, and high anger temper tantrum classifications. High Anger includes behaviors such as kicking, screaming, hitting, and stiffening; Intermediate Anger involves throwing and shouting, and Low Anger is characterized by a single behavior namely, stamping (a symbolic display of anger). Additionally, they found that temper tantrum episodes have a distress factor that occurs after the anger phase and consists of crying, comfort-seeking, and whining. Regarding duration, temper tantrums episodes last from 0.5 to 1 minute or between 1.5 to 5 minutes (Potegal et al., 2003). Wakschlag and colleagues (2012) describe the construct of temper loss as referring to children's pattern of expressing overt anger, including both temper tantrums and regulation of angry mood. They characterize normative expressions, such as tantrums triggered by frustration, as well as intense, dysregulated tantrums. However, noncompliant episodes might be accompanied by temper tantrums. According to the three-level classification of noncompliance, the

parent-opposing noncompliance type is present when the child has a tantrum, is hitting, or is defiant (e.g., Larzelere et al., 2018; Kuczynski & Kochanska, 1990; Kuczynski et al., 1987).

1.1.3 The importance in mental health and prevalence of children's noncompliance and temper tantrums

As described in DSM-5 (APA, 2013) children's noncompliance toward adults and temper tantrums episodes are part of the Oppositional Defiant Disorder (ODD) criteria, qualifying symptom for coding "Other Specified (or Unspecified) Disruptive, Impulse-Control, and Conduct Disorder". Similarly, if we consider only the episodes of temper tantrums, without the presence of noncompliant behaviors, they are just as important, indicating emotional problems in children. Previous findings show that exhibiting severe tantrums may be linked to different non-tantrum behavioral or emotional problems (e.g., Wakschlag et al., 2012; Potegal et al., 2009; Belden et al., 2008; Needlman et al., 1991). Since both noncompliance and temper loss episodes are part of various mental health problems, as well as elements of typical development, monitoring the children's long-term development is relevant in order to prevent the worsening of symptoms. In particular, when a CD is present, it is often preceded by ODD (DSM-5, 2013); similarly, the presence of outbursts of anger and agitation episodes are an exacerbated version of ordinary tantrums (expressed at higher levels and for longer times) (Potegal et al., 2009). In this regard, some indicators were found suggesting when temper tantrums episodes are worrying. Specifically, the frequency of episodes (occasional temper tantrums are common, but daily tantrums are not typical), and the quality of episodes (daily episodes, or if they do not occur daily, the duration of the episode – more than 5 minutes, expressing aggression during the episode, unexpected episodes, having tantrums with more than just the parents) (Salameh et al., 2021; Wakschlag et al., 2012; Bhatia et al., 1990; Österman & Björkqvist, 2010). At the international level, disruptive behavioral problems were found to be the most prevalent in childhood (e.g., in Western Europe and the USA - Vasileva et al., 2021; Ogundele, 2018). At the national level, in Romania, the most common mental disorder diagnosed between 2016 and 2020, according to UNICEF (2022) was conduct disorder - CD (24.19%), followed by attention deficit hyperactivity disorder (22.65%) – which is particularly relevant due to strong connection with ODD.

1.2. Parenting conceptualization of children's noncompliance and temper tantrums

1.2.1 Developmental and relational perspectives

The developmental perspective focuses on changes throughout the lifespan and aims to understand the processes and factors that influence this developmental path. According to developmental research, noncompliance is viewed as typical growth behavior for preschool children and is conceptualized as a form of expressing autonomy that varies with age (Kuczynski & Kochanska, 1990; Kuczynski et al., 1987). For instance, data have shown that noncompliance can be observed in children around 14-18 months (e.g., Dix et al., 2007; Kuczynski & Kochanska, 1990) and start decreasing up to 5 years old (Livesay & Roberts, 2020). Additionally, children aged 2 to 5 use various strategies to express resistance; specifically, a decrease was observed in passive forms of noncompliance (e.g., ignoring the parent's request) and an increase in confrontational strategies (simple refusal and attempts to negotiate or defiance) (Kuczynski & Kochanska, 1990; Kuczynski et al., 1987). With regard to temper tantrums, the data have shown that these episodes are common around preschool years, particularly between 14/18 and 42/48 months (Salameh et al., 2021; Potegal & Davidson, 2003; Potegal et al., 2003). Additionally, these are considered developmentally normative and acceptable, but also, they may be disapproved of (Campbell et al., 2016). **The relational perspective** focuses on the long-term parent-child relationship as the context in which child socialization occurs. This perspective conceptualizes the etiology of noncompliant and temper tantrums behaviors as a result of parent-child relationship management. Specifically, (1) a history of poor parent-child relationship, (2) an indicator of problematic

child autonomy development in the context of relation, (3) problems in the coregulation process with tasks that are difficult for the child's developmental stage, and (4) deficient social skills when comes to negotiation and disagreeing (Kuczynski & Hildebrandt, 1997). Therefore, with a primary focus on the formation and management of long-term relationships and the development of children's autonomy, parental practices recommendations within these perspectives limit the usage of coercive power and emphasize the importance of providing support or scaffolding for mutual coregulation.

1.2.2 Clinical and social-learning perspectives

The clinical perspective is predominantly based on behavioral theory, which highlights the immediate antecedents and consequences as causes of the behavior. This perspective views noncompliance as a problematic behavior that needs to be corrected and reduced (Kuczynski & Hildebrandt, 1997; McMahon & Forehand, 2019) and targets the coercive cycle of negative parent–child interactions which maintain the children's negative behaviors. Thus, parents are taught a series of effective strategies but noncoercive application of external contingencies, to facilitate desirable behaviors and reduce negative ones (Kaehler et al., 2016). Therefore, parental practices focus on behavioral management, meaning that they will use both positive and punishment strategies, such as privilege removal, time-outs, logical consequences, and so on. The NICE recommendations (2013) regarding psychosocial parental intervention is that the programs should follow social learning principles in order to improve parenting skills. Likewise, the extent to which the child has been rewarded (sometimes by mistake) for temper tantrums increases the likelihood that the same or similar behavior will occur in the future (Pratiti, 2020). Examples of this kind of parental intervention encompass strategies such as authoritative communication, effective commands (clear, direct, and firm commands), and implementation of positive and negative consequences (e.g., attention, praise, rewards, time-outs) if children do not comply with adults' command (McMahon & Forehand, 2019). In addition, a recent meta-analysis (Canário et al., 2024) showed that the most likely to produce the strongest effects on child behavioral and emotional problems are the parental programs grounded on a learning theory perspective, regardless of the inclusion of additional approaches (e.g., parental self-care, parents as therapist).

1.3. Parent-child implicated factors in children's noncompliance and temper tantrums

1.3.1. Parental factors

1.3.1.1 Parenting styles & Parental practices

Regarding parenting styles, each style can be linked to children's noncompliance based on its unique theoretical characterization. In this vein, the permissive type tends to set few expectations, exert little control, and rarely discipline impose minimal consequences for noncompliance. The authoritarian type tends to overly expect compliance, exert high control, and frequently discipline via negative control (such as love withdrawal, coercive), while the authoritative style expects compliance, and exerts control based on reasoning and positive control (Johnson, 2016). When investigating the relationship between parenting styles and children's externalizing behaviors, several studies have revealed significant positive correlations between permissive and authoritarian styles and behavioral problems, and a significant negative association with authoritative style (e.g., Mahdavi et al., 2013; Akhter et al., 2011; Alizadeh et al., 2011). Additionally, the authoritarian style was positively associated with aggression during adolescence (Azimi, et al., 2012) behavioral dysregulation (Marcone et al., 2020), while authoritative style, as well as indulgent parenting, were negatively associated to adolescent's aggression (Azimi, et al., 2012). Similarly, when investigating the relationship between parenting style and temper tantrums, studies have found a positive association between the permissive parenting style and a higher frequency of temper tantrums than authoritative parenting styles (Al Ubaidi et al, 2023), Additionally, children whose parents exhibited an authoritarian parenting style were significantly more likely (14.8 times

higher) to have temper tantrums compared to those with an authoritative parenting style in preschool children (Rusana et al., 2020).

Parents' discipline practices are important due to their role in managing effectively and immediately both noncompliance and temper tantrums episodes, while also fostering implicitly children's long-term development. To illustrate, children's immediate compliance can be facilitated by the quality of the command, thereby preventing the escalation of a potential conflict between parent and child (e.g., Urquiza et al., 2011; Quail & Ward, 2020). Another example is when parents resort to spanking to obtain children's compliance – a practice that might appear effective in the short term, but not in the long term (American Academy of Pediatrics, 1998). Consequently, parental practices have the potential to either exacerbate (worsen) or resolve (overcome) noncompliance and temper tantrums. Regarding the link between parental practices and noncompliance, a series of reviews have concluded that compliance tends to be achieve with parental practices such as time-out, brief ignoring, and verbal reprimands (Leijten, et al., 2018; Owen et al., 2012). However, praise (and associated positive nonverbal clues) was either not correlated with compliance or had mixed results. Similarly, assertive control was found to be negatively associated with compliance in concurrent analyses and exhibited instability in its longitudinal correlations. In contrast, gentle control showed a positive association and followed the same trend of evolution (Xu et al., 2021). Parental practices such as praise, positive reinforcement, and natural/logical consequences (Leijten et al., 2019), positive interactions between child-parent, sensitivity and responsiveness, modeling, problem-solving, and time-outs (Kaminski et al., 2008) were found to enhance the parental program effects when the effective components of evidence-based parental interventions aiming to reduce children's disruptive problems were investigated. Additionally, components such as positive relationships and parental self-management had stronger program effects only in treatment programs and not in the prevention ones (Leijten et al., 2019), which may indicate that the children's severity symptoms require a different focus within the intervention. When parental strategies are categorized based on the levels of control (specifically, negative control, positive control, and responsiveness) data shows that negative control is associated negatively with compliance, whereas positive control is associated positively with compliance (Karreman et al., 2006). The responsiveness category (a form in which parents' actions are driven by warmth, sensitivity, providing acceptance, and emotional support) has a positive relation with children's compliance (e.g., Kochanska & Aksan, 1995; Smith et al., 2004) or no significant link to children's self-regulation abilities – a concept that encompasses compliant behaviors (Karreman et al., 2006).

Regarding the link between parental practices and temper tantrums, parents are advised to remain calm, use redirection and distraction, request in a neutral tone not to bite, withhold attention, ignore the tantrum (to avoid reinforcing the negative behavior), and not give in (Sisterhen & Wy, 2021). Data have shown that parents' intervention is associated with tantrum duration compared with no intervention (Potegal & Davidson, 2003), and parents' most common strategy in tantrums was speaking soothingly, with spanking being the least common (Al Ubaidi et al, 2023). Additionally, it seems that when more power assertion strategies in the preceding period are used (operationalized as "*raise your voice or curse," "grab and shake the child,"* or *"take away a toy or privilege")* children display more temper tantrums over time (Mo et al., 2023). While for negative behaviors (e.g., noncompliance, whining, medium anger crises) an effective strategy is active ignoring (Leijten et al., 2018; Clark, 2005), for temper tantrums was linked to increased tantrums initially, and unrelated across time (operationalized as: *"leave it/pretend you did not see it", "punish the child by ignoring it")* (Mo et al., 2023). Similarly, it is viewed that children who are supported in managing their emotions in a more constructive manner are less likely to become dysregulated and overly aroused in their behaviors. Conversely, suggesting that

when parents ignore their distress children might become emotionally dysregulated (e.g., Eisenberg et al., 1998).

Since temper tantrums and noncompliance are mainly linked to anger emotions, the way parents respond to negative emotions can significantly shape the outcome. In this vein, we shortly emphasize the **emotion socialization research**. A recent study (King et al., 2023) succeeded in aligning Gottman's meta-emotion theory (1996) with the instrument created by Fabes and colleagues (2002) measuring the supportive or non-supportive parental reactions. Meta-analytic data shows that supportive emotion socialization practices have a positive effect on conduct problems in children (Quail & Ward, 2020; Johnson et al., 2017; Kaminski et al., 2008). The predictive role of the emotion socialization practices was identified; particularly, the use of non-supportive emotion socialization predicted preschools' externalizing and internalizing problems, but not supportive emotion socialization (Taşdelen, 2019). By helping the child to integrate the emotional experience through supportive practices, their efforts to regulate emotions properly are enhanced, contrary to non-supportive practices which may heightened the emotional arousal (Eisenberg et al., 1998). Emotion socialization practices are essential since their influence were found as well in longitudinal associations (e.g., Di Giunta et al., 2021; Johnson et al., 2017). Longitudinal positive link between supportive presence in interactive tasks and children's outcomes (lower externalizing and internalizing problems at age 10) was found to be explained by children's labeling emotions at age 8 (Sadri & Yates, 2024). Furthermore, specific parenting styles are related to specific emotion socialization practices. Authoritarian parents are positively correlated with emotion dismissing and negatively with emotion encouraging and coaching, whereas authoritative parents are positively associated with emotion encouraging and coaching and negatively with emotion dismissing (Chan et al., 2009). **Consistency** in parental practices seems to be one of the golden rules in the administration of discipline (Grusec et al., 2017). Also, according to DSM-5 (APA, 2013), the lack of parental consistency and harsh practices are risk factors for ODD. A relatively recent study, investigating parental discipline strategies used in children's tantrums episodes, observed that these tantrums decreased when mothers reported using in the last period consistent reinforcement of rules (Mo et al., 2023).

1.3.1.2 Parental beliefs

Parental beliefs refer to a cognitive system that affects emotional and behavioral responses. Parenting research has focused predominantly on specific definitions, such as parental attributions in relation to child behaviors (e.g., Colalillo et al., 2015; Sawrikar et al., 2018). A relatively unexplored definition regarding parental beliefs in the field of parenting is the REBT/CBT approach. Since each parenting style has specific characteristics, the relationship between parenting styles and their cognitive framework can be described and categorized as either potentially rigid or flexible. For example, both authoritarian and permissive parents tend to formulate their child's roles as well as their own in a rigid manner, based on their expectations toward children. The correspondence between parenting styles and irrational beliefs might be illustrated as follows. Authoritarian demandingness can manifest as the belief that *"My child must always behave"*, which may lead to catastrophizing when the child misbehaves, using global evaluations regarding human worth, applying labels such as *"You are a bad child''*. Permissive demandingness can be characterized by beliefs such as *"Raising children must be easy and fun"*, catastrophizing when they need to set limits, leading to thoughts like *"My child should not be frustrated",* as well as using global evaluations of human worth (e.g., *"I am a bad/weak parent")* (Bernard & Joyce, 1984; Walen et al., 1992; Gavita et al., 2014). Thus, managing noncompliant or temper tantrum episodes might be challenging when parents are characterized by an irrational mindset, as a positive relationship has been identified between a high frequency of misbehavior and reduced levels of parental tolerance (Ismaili, 2014). Previous data revealed that parents' irrational beliefs might lead to

frequent poor disciplinary practices, for example, overreactivity, aggressive discipline (Rodriguez et al., 2017; Del Vecchio et al., 2019) and inappropriate discipline (McElroy & Rodriguez, 2008).

Moreover, parental mindset contributes not only to how parents react but has also a link to children's behaviors. The relationship between parental beliefs and children's behaviors was supported by data showing that addresing parents' irrational beliefs could act as a mechanism of change for reducing child misbehavior (e.g., Gaviţa et al., 2012; David, 2014). By being exposed to a healthy mindset children can learn from their parents a rational cognitive system that facilitates more regulated responses (e.g., being more receptive when wishes cannot be granted), (Gavita, 2014).

1.3.1.3 Parental emotion regulation

Parental emotion regulation is a concept that focuses on how parents manage their emotional experiences in a parental context in order to respond more appropriately to the child's needs. The relevance of it is stressed in several reviews, highlighting its impact on both parenting behaviors and children's adjustment (Hajal & Paley, 2020; Lotto et al., 2024). Based on the emotion regulation difficulties conceptualization, the authoritarian parenting style was found to be positively linked to parental emotion dysregulation (Shaw & Starr, 2019; Camisasca et al., 2022). Conversely, warmth and sensitive parenting were negatively correlated to emotional dysregulation (Sarıtaş et al., 2013; Carreras et al., 2019). Additionally, emotion dysregulation was related to nonsupportive reactions and harsh discipline practices (Lotto et al., 2024) or to maternal rejection (Sarıtaş et al., 2013). Based on the particular strategies conceptualization, it was found that authoritarian parenting has the lowest scores on reappraisal and suppression ER strategies, when compared with permissive or authoritative parenting (Bahrami et al., 2018). Conversely, parental warmth was positively linked to reappraisal, and negatively linked to suppression (Enebrink et al., 2013). Similarly, various parental practices were associated with specific emotion regulation strategies. For example, suppression, rumination, and parental emotion dysregulation were related to nonsupportive emotion socialization practices, which were further related to child problems (Rodriguez et al., 2025) and overreacting practices (Loiselle, 2022). In contrast, parental emotional control was negatively linked with overreactive practices (Narine, 2023). Parents' avoidant-focused coping style was positively associated with overreactive, coercive, and lax parenting (McKee et al., 2004). Additionally, adaptive-focused coping and social support ER were negatively linked to overreactive practices, whereas venting emotions ER was positively linked to overreactive practices (McKee et al., 2004). The importance of using the suppression ER strategy is also highlighted in longitudinal associations. Particularly, when parents reported higher levels of suppression use, the child's aggression was linked to increased coercive parenting behaviors and psychological control. Conversely, when parents reported lower levels of suppression use, the child's aggression was associated with decreased coercive and psychological control (Tao et al., 2023).

1.3.1.4 Parental distress

Parental distress is defined as negative emotional experiences and can be viewed via two perspectives, specifically, distress associated with the parental role (parental stress), and distress related to mental health (anxiety, depression, and stress symptoms), which might be associated with other roles (self/or personal, e.g., parents who are stressed about professional responsibilities). Therefore, in the research field, parental distress can be investigated using different definitions. Its relevance lies in the numerous ways it is connected to parenting (Rueger et al., 2011), as well as to the child's externalizing outcomes (e.g., Hermansen et al., 2022; Riany et al., 2022; Khoury et al., 2021; Tsotsi et al., 2019; Sher-Censor et al., 2018; Barroso et al., 2018).

Previous data indicate that parental distress is related to poor reactions to child noncompliance (Keane et al., 1987) or a child's negative affect (Frankel et al., 2015). When parental distress is operationalized as specific negative emotions, studies have shown links to various parental practices.

Specifically, it was found that high depression symptoms make mothers more prone to displaying negative or distressed reactions to irritable infants (Dix et al., 2014; Lovejoy et al., 2000), negatively affect warm behaviors (Lee, 2018) and are positively associated with hostility (Khoury et al., 2021). Further, higher anxious symptoms were positively associated with hostile parenting (Khoury et al., 2021) and general stress negatively impacted parental warmth and parents' tendency to engage in more controlling behaviors toward their children (Lee, 1018). A series of data shows that parenting stress influences parents' nonsupportive parenting behaviors (Lee & Lee, 2024), inconsistent parenting (Cenusa & Turliuc, 2024) and hostile parenting (Khoury et al., 2021). To illustrate the importance of parental distress, parents whose children tend to exhibit frequent noncompliance and temper tantrums are at a higher risk of responding in a maladaptive/dysfunctional manner to these behaviors, especially when they themselves are experiencing distress. For example, when parents feel higher levels of depression, they are more likely to not reinforce child collaborative behaviors (compliance) and respond more coercively to noncompliance (Thomas et al., 2015; Keane et al., 1987). In contrast, when parents are feeling more energetic or thrilled, they are more likely to use techniques such as time-out, distraction, and removing privileges (Keane et al., 1987).

1.3.2. Child factors

1.3.2.1 Child temperament

Child temperamental characteristics are universally defined as a natural, innate disposition that individuals are born with, representing inter-individual differences regarding reactivity and self-regulation, which form the foundation for future personality development. This thesis focuses on the approach of Rothbart with three main dimensions, namely, surgency, negative affect and effortful control (Rothbart, 2011; Rothbart et al., 2001).

The importance of the child's temperament lies in its impact on various child behaviors as evidenced by meta-analytic data (e.g., conduct problems (CD) - Frick & Morris, 2004; or ODD, CD and ADHD - Bonham et al., 2021). Additionally, temperament impacts the parents' behaviors toward the child and vice versa. Particularly, surgency was found to moderate the relationship between coercive behavioral control and child aggression (Zhu et al., 2023), to be negatively associated with committed compliance (Huang & Lamb, 2014), and to be positively associated with ODD symptoms (Martel et al., 2012). Effortful control was found to be associated with less negative control and more positive control usage (Huang & Lamb, 2014), to predict decreases in parental rejection (Lengua, 2006), to be negatively but not significantly linked to ODD symptoms (Martel et al., 2012), and to be negatively associated with committed compliance (Huang & Lamb, 2014). Negative affect, such as higher levels of irritability was found to increase parental inconsistency (Lengua, 2006), contribute to more defiance behaviors (Lickenbrock et al., 2013), and be positively associated with passive noncompliance (Braungart-Rieker et al., 1997), as well as ODD and ADHD symptoms (Martel et al., 2012). Therefore, given that temperamental traits are considered innate predispositions that have been linked with specific child issues and parental reactions, taking them into account when addressing noncompliance and temper tantrum episodes is essential.

2. New development in parental practices

Millennial parents often rely on the Internet and social media as their main means of problem-solving (Setyastuti et al., 2019). A series of meta-analytic data are showing the beneficial results of online delivery programs in parenting, aimed at addressing various parent-child problems (e.g., Spencer et al., 2020; Florean et al., 2020; David et al., 2023; McAloon & Armstrong, 2024). In this vein, the challenge is to find the best digital method and cost analysis in order to engage parents' participation and reduce

attrition rates. Therefore, different digital platforms might be used to support parents, such as Facebook groups, ParentText/chatbot with or without in-person sessions, WhatsApp support groups, mobile apps, and podcasts (e.g., Epstein et al., 2019; Ambrosio et al., 2024; Hodson et al., 2024; Morawska et al., 2014). Increasingly, researchers are focusing on longitudinal designs to provide more accurate conclusions about parenting. In this context, intensive longitudinal data have proven to be highly valuable for investigating families and children's externalizing problems, a method which provides insights into within-person variability and short-term dynamics (Zheng & Goulter, 2024).

3. Current issues in parenting domain

A controversy has arisen around nonphysical parental practices usage, which has been rooted from two main domains. **Firstly**, the well-intentioned prohibition of spanking also appears to negatively impact the nonphysical disciplinary usage (Larzelere et al., 2011). Larzelere and colleagues (2011) raised concerns about a trend that undermines firm and positive control (e.g., Baumrind et al., 2010), which could potentially lead to more permissive parental discipline. **Secondly**, this controversy is further fueled by the opposing perspectives in the parenting field (developmental vs. clinical perspectives). This might be confusing since evidence-based parenting support programs are predominantly rooted in social learning theory, cognitive–behavioral principles, and developmental science (Sanders et al., 2022). Therefore, how much parental control it is required for achieving compliant behaviors became essential, by taking into consideration both, immediate efficacy and sustaining the long-term mental health of the child. As a consequence of these discrepancies, the use of a specific parental practice, namely, the time-out technique, became a current issue and controversy. In brief, some scholars oppose the time-out technique and other similar practices, while others highlight its beneficial effects. Furthermore, changes in the topics of parenting programs have been observed over time in regard to children's disruptive behaviors. Specifically, trials have shown a decrease in the use of time-outs (Leijten et al., in preparation). This issue can be understood given that parents' first tool for addressing different parenting problems is searching on the internet, where they are exposed to lay books regarding parenting or prevailing erroneous information about time-out (e.g., 30% of webpages characterized time-out as being negative) (Drayton et al., 2014). The parents' perception about parental strategies is important since mothers rate the time-out technique as one of the least helpful strategies (Calvert & McMahon, 1987). Conversely, when mothers implement time-out procedures more closely aligned to the correct form and when perceive time-outs as more effective, they report addressing a wider range of child problem behaviors through the use of time-outs (Drayton et al., 2017). Therefore, addressing the effects of time-outs in short and long-term is needed. Similarly, another parental technique, namely, time-in, needs to be studied in a scientific approach, as it has gained popularity among parents and contributes to this controversy. Concerning these discrepancies, it appears they lead to serious practical implications, for both parents and practitioners, even more since only a small number of parent search for evidence-based counselling when are confronted with parenting challenges (Strehlke et al., 2024). For example, contrary to clinical recommendations, when mothers are dealing with extreme noncompliance in their children, they tend to use relational strategies (connection and reassurance) and when are dealing with normative noncompliance mothers use firm enforcement, proactive problem-solving, and strategies that promote autonomy (Robson & Kuczynski, 2018). Moreover, it appears that parents do use time-outs, however, they are often implemented poorly (Riley et al., 2017), which can be a result of problematic parental emotion regulation. Therefore, in order to address this issue, an investigation about parental emotional regulation process, in the relationship between parenting style and parents' practices and children's externalizing symptoms is needed.

Thirdly, another issue lies in parental responses to typical or atypical noncompliance, as well as to temper tantrums, which might differ. For example, Livesay and Roberts (2020) observed that given

the children's age and the frequency of noncompliant behaviors (<5 years old coded as "*most days*", and >5 years old coded as "*at least once per week*") a percentage of 92.5% in their typically developing children sample met the DSM-5 criteria for symptomatic noncompliance. This might impact the recommendations provided to parents (a more clinical perspective, or a more developmental perspective). Looking further, only 55.5% of surveyed practitioners working with families, reported using strategies such as time-outs, 38.0% of them perceived themselves as current time-out users and practitioners identified several other parenting strategies as effective alternatives to time-outs (Jugovac et al., 2024). Therefore, investigating parents' perceptions of parental practices in terms of effective management of children's misbehaviors and temper tantrums could bring a clearer understanding given the attitudinal changes across generations and intra-families dynamics.

Finally, another issue in parenting research focuses on the definitions used regarding the conceptualization of parental control and the instruments used in this context. Specifically, González-Cámara and her colleagues (2019) conducted a systematic review and concluded that, based on instruments used to assess parental control, such control was associated with either better or worse outcomes in children. They also emphasize that the lack of at least partial consensus regarding the benefits of parental control stems from the confusion surrounding the various methods used to measure the control dimension. In this vein, time-out was grouped with yelling and spanking practices, being classified as part of the negative or power-assertive dimension (Holden et al., 2022; Lawrence et al., 2019). Similar data were found the removal privileges technique (Mo et al., 2023). Therefore, we consider that by addressing both, trait/dimension parent-child characteristics as well as specific practices could be useful, given that is measuring specific parenting practices is considered to allow making finer discrimination between behaviors and avoiding incorrect inferences (Knowles, 2014).

CHAPTER II: RESEARCH OBJECTIVES AND OVERALL METHODOLOGY

The current thesis's general aim was to investigate parental practices in response to children's noncompliance and temper tantrums episodes without clinical status considering both the immediate efficacy (obtaining children's compliance) and long-term effects on children's mental health and parent-child implicated factors. For this purpose, four studies were conducted as part of the current thesis.

2.1. Specific objectives of the studies

The first study, a systematic review (meta-analysis) aimed to provide the effect size of the long-term association parenting and children's mental health. As the literature on this relationship focuses on more general dimension constructs of parenting and given that we are witnessing significant changes regarding parents' attitudes towards parenting practices, there is a clear need for such synthesis. Hence, to attain this goal, we investigated the relationship between parental practices (defined as responses to children's misbehavior) at first assessment and the children's mental health (defined as externalizing and/or internalizing symptoms) at the last moment of assessment of the study included. Based on the level of control of the parental practices we conceptualized three levels as follow: negative control, positive control and responsiveness. We also explored the possible moderators implicated in this relation.

The second study investigated the parental regulatory process through which parenting style is linked to parents' practices and children's externalizing symptoms. More specifically, we tested two sequential mediation models; the first model investigated the relationship between authoritarian parenting style and parental practices, and the second model examined the relationship between authoritarian and children's externalizing problems, via three mediators, namely irrational parental beliefs regarding child noncompliance, parental emotion regulation strategies, and parental distress for both models. The results support both models of mediation and offers targeted emotional and cognitive mechanisms rooted in cognitive-behavioral approach, when dealing with children's noncompliance and/or temper tantrum behaviors.

The third study, given the notable insights regarding the intra-processes (within-subject process) of the families through the use of intensive longitudinal methods and growing usage of it, implemented an intensive longitudinal design to understand the relationship between parental practices and children's episodes of noncompliance or/and temper tantrums in a more accurate and ecological manner (e.g., lowering the bias recall). Specifically, this study used 10-days, daily diary assessments for parents whose children had elevated noncompliant and/or temper loss behaviors, but without psychiatric diagnostic in attempt to provide specific parental practices in response to children' s negative behaviors. It focused on several aims (1) first it explored the parental practices perceived as efficient by parents in managing different types of noncompliance and responses to temper tantrums behaviors; (2) second it explored two types of predictors that contributed to occurrences of noncompliance and temper tantrums during the 10-days period. One set of predictors referred to constructs assessed daily (via diary), such as parenting hassles and nurturance behaviors, attempting to identify the extent to which these two influenced the occurrence of noncompliance and temper tantrums. Similarly, the second set of predictors referred to constructs that are assessed only once, such as parenting styles, parental tendencies of emotion socialization practices and discipline. Shortly, the study offered parental input by rating several practices in managing children's behaviors and series of sex-differences on the second set of predictors but not on parenting hassles and nurturance behaviors.

The fourth study focused on the impact of two controversial and popular parental techniques relevant to children's noncompliant and temper tantrums management and their effects on children's long-term development. This study started from the idea that what works well in the short-term might not be healthy in the long-term in terms of mental health. In this endeavour, we tested the efficacy of

time-in and time-out techniques in a clinical trial design with three moments of assessments for one year period (pre-post, follow-up1 at 6 months and follow-up2 at 12 months), using a sample of children between 2-8 years, with elevated scores on temper loss and/or noncompliance. As well, we tested parent-child moderators implicated and the results suggested that child's temperament, parents' emotion socialization practices, and parental stress are significant contributors.

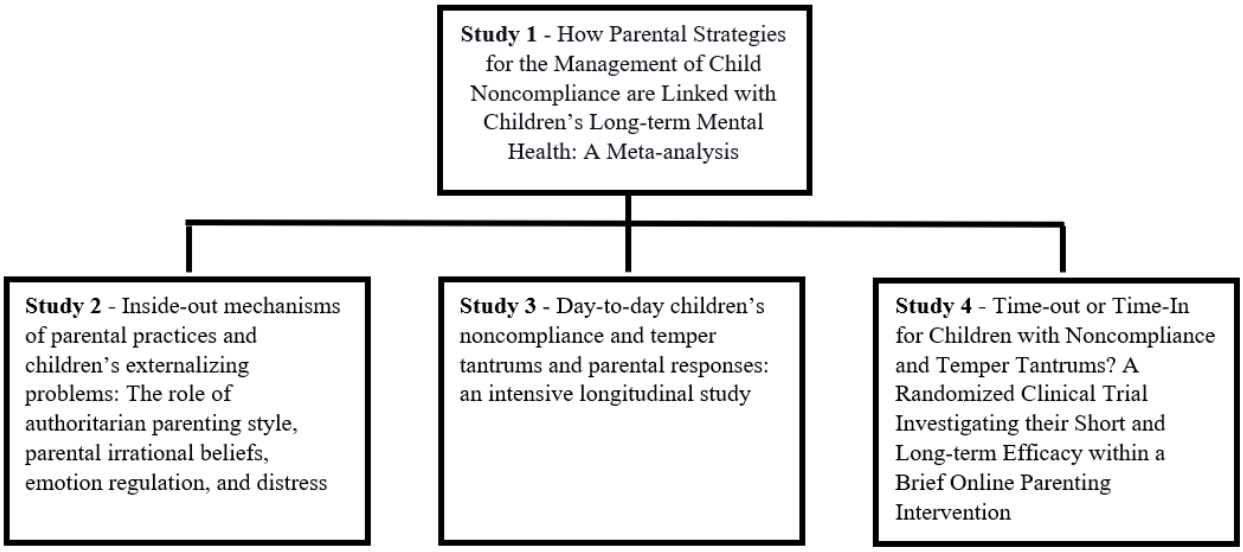


Figure 1. **The structure of the thesis**

CHAPTER III: ORIGINAL RESEARCH

1.STUDY 1 - How Parental Strategies for the Management of Child Noncompliance are Linked with Children's Long-term Mental Health: A Meta-analysis

Introduction

This paper aims to answer the question regarding three types of parental strategies based on their level of control (negative control, positive control and responsiveness) for managing noncompliance is effective in the promotion of child mental health on the longer-term. In other words, our study aims to investigate (1) the long-term associations of parenting strategies regarding child noncompliance with children's mental health; (2) the role of relevant moderators for these associations, based on the current available literature.

Method

Literature search

Identification of the potentially relevant studies involved an extensive literature search conducted in July 2021 and updated in March 2025 in the following databases: Web of Science, ProQuest, SCOPUS, PubMed, and PsycINFO. There were no time periods restrictions.

Eligibility criteria

The inclusion and exclusion criteria are presented. In brief, the studies needed to report (a) data about nonclinical or subclinical problems sample, (b) longitudinal association between parental strategies and the children's outcomes, (b) parental strategies related exclusively to a context or episode where children's noncompliance/compliance behaviors were elicited, or linked to obtaining children's compliance, or handling misbehaviors, and (c) at least one of the two imposed criteria defining the child's outcome (externalization and/or internalization problems).

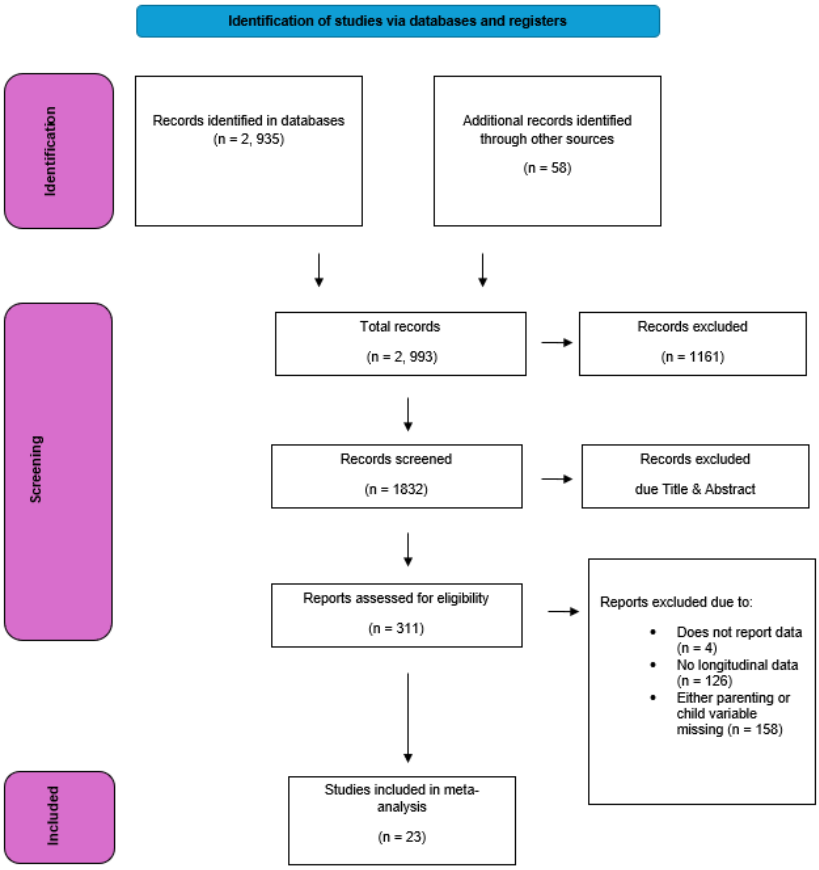
Coding Procedures

Data extraction was rated - sample characteristics, correlation coefficient and the main variables. Parental strategies were coded as: negative control (threats, psychological control - induction of guilt, withdrawal of affection, critical, harsh, sarcastic, unappreciative remarks, yelling), positive control (limit-setting, directives communicated clearly and directly, disapproval, scold, reprimands, logical consequences, withdrawal of privileges) and responsiveness (positive affect, warmth, sensitivity, accepting and responsive behaviors, emotional support). Child symptoms were coded as externalization and internalization problems.

Based on the existing literature we considered several moderators, such as type of measurement – observational or other (Rothbaum & Weisz, 1994); clinical status of children as either subclinical or nonclinical, based on previous inconsistent results (Owen et al., 2012); child gender (Silverman, 2020); child's age (Agnafors et al., 2019); child's temperament characteristics, mother's age, mothers' mental health (Phua et al., 2020).

Meta-analytic procedure

All studies included in this meta-analysis presented longitudinal associations between parenting strategies in relation to children's noncompliance and child psychopathology. All analyses were performed using Comprehensive Meta-Analysis, Version 3 (2022). The effect size computation was expressed as a Person product-moment coefficient (r) between parenting and child psychopathology. The magnitude of the effect was interpreted using guidelines described in Cohen (1988) and Lenhard & Lenhard (2016), specifically, $r = 0.10$ represents "small" effect; $r = 0.30/0.24$ represents "medium" effect; and $r = 0.50/0.37$ represents "large" effect. The article selection process is presented in the PRISMA Flow diagram see Figure 1.



Results

All studies included in this meta-analysis (23 studies, N = 5280) presented longitudinal associations between parenting and child psychopathology. The mean age of the children at the assessment of parental strategies was 79.94 months, ranging from 14 to 121 months. The mean period between the two time points was 41.28 months, ranging from 10 to 144 months.

Overall effect sizes

The results for the longitudinal association between the three parental strategies and children psychopathology are shown in Table 1. In short, the effect size for the association between negative control and child psychopathology was approaching moderate and significant (r = 0.23, 95% CI [0.18, 0.28], with a moderate heterogeneity I^2 = 53.21 (53%). The association between positive control and child psychopathology was insignificant and for responsiveness category we found a significant effect below the threshold considered small effect (r = 0.08, 95% CI [0.03, 0.14], with a small heterogeneity I^2 = 5.65 (6%) therefore, no effect. The publication bias analysis based on trim and fill method (Duval & Tweedie, 2000) indicated none for any of the parental control categories. Fifteen of the included studies presented data that allowed us to run analyses regarding the concurrent associations between parental strategies and children psychopathology. The results show an approaching moderate and significant effect size for the association between negative control and child psychopathology (r = 0.23, 95% CI [0.16, 0.29], with a relatively high heterogeneity I^2 = 77.52 (78%). For responsiveness and positive control, the associations were not significant, see **Table 1**.

Table 1

Effect size for the longitudinal associations between parenting categories and child psychopathology						
Parenting strategies	**N**	***k***	***r***	***p***	**95% CI**	***I²***
Negative Control	3318	16	**0.23*** **	**< 0.001**	0.18 to 0.28	53.21%
Positive Control	1446	8	0.02	0.578	-0.04 to 0.08	33.45%
Responsiveness	1418	5	**0.08****	**0.002**	0.03 to 0.14	5.65%
Effect size for the concurrent associations between parenting categories and child psychopathology						
Parenting strategies	**N**	***k***	***r***	***p***	**95% CI**	***I²***
Negative Control	2340	12	**0.23*** **	**< 0.001**	0.16 to 0.29	71.95%
Positive Control	1358	9	-0.40	0.470	-0.14 to 0.06	77.52%
Responsiveness	445	3	0.16	0.081	-0.02 to 0.33	75.62%

Note. n = the number of children; *k* = the number of studies; CI = confidence interval; I^2= heterogenei

*p<0.05; **p<0.01; ***p<0.001.

Moderation analyses

The results of moderator analyses and sensitivity analysis for children's type of symptoms variables in the longitudinal association between parental categories and child externalization or internalization symptoms are presented in **Table 2.**

Moderator analyses were conducted for each category of parental control in longitudinal associations. Regarding categorial moderators, the assessment method of parenting (observational vs. other) was not a significant moderator for neither one of the parental control categories. Additionally, for the children's clinical status, there were too few studies in the subclinical subgroup (total of subclinical study: k = 3, respectively, nonclinical: k = 20, from which two studies were part of negative control category, and one study was part of positive control category) to conduct the analysis. Child gender was a significant moderator k= 12, r = 0.003, p = 0.03, 95%CI (-0.007 to -0.0003). Regarding continuous moderators, the results indicated that child's age at follow-up, mother's age, were not significant moderators. Additionally, for mother's mental problems as well as for children's trait of difficulty and negative affect were not enough studies to conduct the analysis.

We conducted a sensitivity analysis for children's type of symptoms variables (externalizing and internalizing) on the association between parental categories and children's psychopathology. Specifically, we found a significant and approaching moderate effect size in the longitudinal association between negative parental control and children's externalization symptoms, k = 15, r = 0.23, p = < 0.001, 95%CI (0.18 to 0.28), I^2 = 51.00 (51%) with a moderate heterogeneity. Likewise, there was a significant and small effect size between responsiveness and children's externalization symptoms, k = 5, r = 0.10, p = 0.001, 95%CI (0.04 to 0.16), I^2 = 10.71 (11%) with a small heterogeneity. For positive control, the results were not statistically significant. The results for internalizing symptoms revealed a significant and small effect size in longitudinal relationship between negative control and children's internalizing symptoms, k = 4, r = 0.17, p = 0.001, 95%CI (0.06 to 0.27), I^2 = 68.36 (68%) with a medium-to-high heterogeneity. In contrast, the results for positive parental control and responsiveness categories were not statistically significant.

Table. 2

Results of sensitivity analyses regarding longitudinal association between parenting and child externalizing or internalizing symptoms					
Parenting strategies	***k***	***r***	***p***	**95% CI**	***I²***
Negative Control – INT	4	**0.17**	**0.001**	0.06 to 0.27	68.36%
Negative Control – EXT	15	**0.23**	**< 0.001**	0.18 to 0.28	51.00%
Positive Control – INT	2	-0.05	0.256	-0.14 to 0.38	0%
Positive Control – EXT	7	0.04	0.209	-0.02 to 0.10	13.25%
Responsiveness – INT	2	0.07	0.064	-0.00 to 0.14	19.79%
Responsiveness – EXT	5	**0.10**	**0.001**	0.04 to 0.16	10.71%
Results of moderator analyses regarding longitudinal association between parenting and child psychopathology					
Child's age at follow-up	***k***	***r***	***p***	**95% CI**	
Negative Control	13	0.0003	0.7310	-0.001 to 0.001	
Positive Control	8	0.002	0.33	0.0002 to 0.004	
Responsiveness	5	-0.006	0.089	-0.014 to 0.001	
Mothers' age	***k***	***r***	***p***	**95% CI**	
Negative Control	8	-0.003	0.401	-0.010 to 0.004	
Positive Control	5	-0.004	0.619	-0.02 to 0.01	
Responsiveness	NA				
Child gender	***k***	***r***	***p***	**95% CI**	
Negative Control	12	**-0.003**	**0.03**	-0.007 to -0.0003	
Positive Control	8	-0.0003	0.977	-0.02 to 0.02	
Responsiveness	NA				
Type of assessment	***k***	***r***	***p***	**95% CI**	
Negative Control	16	-0.05	0.371	-0.16 to 0.06	
Positive Control	8	-0.025	0.738	-0.17 to 0.12	
Responsiveness	5	-0.037	0.683	-0.21 to 0.14	

Note: *k* = the number of studies; CI = confidence interval; I^2=heterogeneity; EXT – externalization problems; INT – internalization problems; NA – not applicable due to lack of reporting data.

**p* <0.05;
***p* <0.01;
****p* <0.001.

Discussion

This meta-analysis aimed to examine the effect size of the longitudinal relations between parental strategies related to children's noncompliance and children's psychopathology. Our results indicate an approaching moderate and significant effect size for the long-term association between negative parental control category and children's psychopathology. Regarding the positive control strategies, our results show a positive association but not significant effect with children's psychopathology. Karreman and colleagues' (2006) results showed that negative control strategies were negatively correlated with compliance, but not positive control. Using positive control strategies in managing child noncompliance could have some influence on later children's psychopathology. The explanation might be that subtle indicators differentiate within positive control strategies. Some distinctions may be quantitative, in terms of frequencies of strategy use; for example, Larzelere et al., (2018) reveals that moderate use of punishments (<16% of the time) reduces total behavior problems. Other distinctions may be that some control strategies could be more detrimental than others, like it was identified for negative control strategies (e.g., verbal hostility vs. psychological control) (Baumrind et al., 2010). Also, parents use

multiple strategies; for example, in addition to the positive control, responsiveness and autonomy support were found to contribute to the authoritative parenting effectiveness (Baumrind et al., 2010).

Regarding responsiveness, the results obtained show a significant but very low magnitude effect on children's psychopathology. Contrary with our results, Johnson and colleagues (2017) found a negative association between emotion socialization practices and children's conduct problems. This finding may raise new questions about the ratio between responsiveness and demands and when this raport may become detrimental to a child's externalizing problmes. For example, recent study shows that a high level of maternal sensitivity can channel toward developing children's externalizing problems when their children are characterized by high levels of high-intensity fear, and toward internalizing problems when their children are characterized by low levels of fear (Wu & Cui, 2023). Karreman and colleagues (2006) argued that responsiveness might be more relevant for supporting child self-esteem and well-being, but not for noncompliance. These results suggest that is essential for parents to contextually differentiate between the child's needs for autonomy versus healthy limits, without being at risk of unintentionally practicing a permissive style or being overcontrolling.

This meta-analysis also explored the concurrent associations between parental strategies related to noncompliance and children's outcome. Thus, we found that the relationship negative control and children's psychopathology is significant from the initial assessment and remains stable to the later assessment (based on the significant relationship identified in longitudinal association). These results are supported by research showing that the influence of parenting on children's development can be observed from infancy (e.g., Landry et al., 2008). For responsiveness and positive control, the associations were not statistically significant, but we could see a trend. Specifically, for positive control there is a negative association with children's psychopathology, which may mean that a certain level of control in managing children's misbehaviors is beneficial to children's emotional health. Additionally, for responsiveness there is a positive association with children's psychopathology, which may mean that a certain level of responsiveness may be detrimental to children's emotional health, but more investigations are needed to explore this idea. Our study investigated various moderators (e.g., children's and mothers' age, type of parenting assessment, mothers' mental health and so an) but were not statistically significant or were insufficient data to run the analysis. Child's gender was found a statistically significant moderator only for the association between negative control and child psychopathology, suggesting that the relation is weaker for girls, consistently with other data (Silverman, et al., 2020).

The sensitivity analyses regarding the externalizing or internalizing symptoms showed significant associations between negative parental control and both types of symptoms of children. The magnitude of the effect sizes is different though, with negative control having higher effect size, approaching moderate effect size, for externalizing symptoms, while for internalizing symptoms the effect size was small. Additionally, the results show significant association between responsiveness and externalizing symptoms, with a small effect size, but not for internalizing symptoms. This result can suggest that even if parental responsiveness is a desirable practice in parenting it could be detrimental to children's development regarding behaviors in a certain amount of responsiveness, particularly to externalizing symptoms through the lack of adequate parental requests toward children about their misbehavior and self-control. These results must be however cautiously interpreted due to the small number of studies and a high level of heterogeneity between studies.

Limitations, Practical implications & Future directions

This meta-analysis has several limitations. First, some categories were too small for moderator analysis. The small number of studies may have also affected some of the results when only a small number of effect sizes is available, the overall effect sizes is relatively unstable and should be interpreted

with caution (Rosenthal, 1995). Additionally, this the results of this study are based on correlational data, which again, needs to be carefully interpretated. The lack of integration of parenting strategies is a challenge even for practitioners in parental education and clinical interventions (Robson & Kuczynski, 2018). Therefore, our results emphasize the need for practitioners to carefully plan the intervention for parents whose children have non-clinical levels of non-compliance and ask for help, gradually increasing the degree of positive control of parental strategies. Future research might attempt to determine which or when positive control strategies are detrimental for children, while also controlling for the dynamics between parental strategies. For example, some data are showing that it can be beneficial when mild power assertion strategies co-occurred with induction strategy, but not with strong power assertion (Eisenberg et al., 2015). Also, future studies can assess the parental strategies as a ratio, thus providing a quantifiable extent regarding the types of strategies parents use relative to the total strategies (e.g., Pastorelli et al., 2016). Future efforts need also to investigate the effective parental strategies for various levels of noncompliance (e.g., Larzelere et al., 2018). Investigating such factors can allow creating a map of parental strategies for managing noncompliance, that is based on the integration of apparently contradicting parental theoretical perspectives. Finally, research should focus also on the positive effects on children's development, such as social functioning (Tompkins & Villaruel, 2020).

Conclusions

Overall, this meta-analysis is the first investigating the longitudinal association between parental strategies related to children's noncompliance and children's mental health problems. Our findings can contribute to delineating parental strategies that can support child compliance in a way that does not affect mental health of the child on the longer-term.

2. STUDY 2 - Inside-out mechanisms of parental practices and children's externalizing problems: The role of authoritarian parenting style, parental irrational beliefs, emotion regulation, and distress

Introduction

Parents must effectively manage their children's noncompliance and tantrums in order to keep them from intensifying to a clinical degree. For authoritarian parents, this might be more challenging than for other parents due to their authoritarian beliefs regarding their child. This study aims to offer a better understanding of the mechanisms underlying parental emotion-regulation and children's mental health in children with elevated noncompliance and/or temper tantrum behaviors. Therefore, we aim to examine 2 mediation models for (1) the relation between authoritarian parenting style and externalizing problems in children, and for (2) the relation between authoritarian parenting style and harsh and inconsistent parental practices, via three emotion-regulation related mediators, namely, parents' irrational beliefs, parental emotion regulation, and parental distress. It is expected that both models will be supported.

Method

Participants

Participants were parents of children aged 2 to 8 years. The final sample consists of 237 parents. The eligibility criteria were (1) having elevated levels of noncompliance and/or temper tantrums behaviors (based on the Temper Loss subscale − 95th% threshold = 1.60, and/or Noncompliance subscale − 95th% threshold = 1.61 from The Multidimensional Assessment of Preschoolers – MAPS (Wakschlag et al., 2014), (2) not having any formal psychiatric diagnostic, and (3) being the biological parent of the child. Demographic characteristics indicate 1.3% fathers (N = 3) and 98.7% mothers (N = 234) with an average age of 34.10 years; among these 2 parents (8%) reported having a psychiatric problem; 89.5% (N = 212) of parents have a university degree, 8.9% (N = 21) high school education and 1.7% (N = 4) mandatory education (10th grade). Regarding the demographic characteristics of children, 55.1% were boys (N = 130) and 44.9% girls (N = 106), for one child data on gender is missing; the average age of the children was 4.08 years; 96.6% (N = 229) met the criteria related to noncompliance and 57.8% (N = 137) met the criteria related to temper tantrums.

Procedure

Each participant voluntary, completed a short questionnaire to assess their eligibility for the study. Participants were requested to respond via a google form link and they have assured anonymity, and that the data collected would be used only for research purposes. In order to avoid missing data, the survey would not allow parents to submit until they completed all the items.

Instruments

Authoritarian parenting style - *Parenting Styles and Dimensions Questionnaire (PSDQ;* Robinson et al., 2001). Parental ir/rational beliefs - *Parent Rational and Irrational Beliefs Scale (P-RIBS;* Gavita et al., 2011). Parental emotion regulation - *Parental emotion regulation inventory (PERI-2;* Lorber et al., 2017). Parental distress - *The Depression Anxiety Stress Scales – Short Form – Depression Subscale* (DASS-21- D; Lovibond & Lovibond, 1995). Child's externalization symptoms - *The Strengths and Difficulties Questionnaire (SDQ;* Goodman, 1997*).* Harsh and inconsistent parental practices - *Parent Practices Inventory (PPI; Oregon Social Learning Center,* - Revised, 2019*).*

Data analysis

Prior to conducting analyses, we performed data screening to ensure the accuracy and legibility of data entry, and assess the normality of the variables. Univariate and multivariate normality of the distribution was assessed using AMOS 22.0., as well as the presence of outliers.

The data was analyzed with SPSS 22.0 and AMOS 22.0 software packages. Descriptive data concerning all the analyzed variables was examined. Path analyses were conducted in AMOS 22.0 to test the mediating effect of parental irrational beliefs, parental emotion regulation, and parental distress on the relationship between authoritarian parenting style and harsh and inconsistent parental practices, in the first model. A second model was tested, investigating the influence of parental irrational beliefs, parental emotion regulation, and parental distress on the relationship between authoritarian parenting style and children's externalizing problems. Maximum likelihood method was employed for parameter estimation. The significance of the indirect effect was tested using a bootstrapping method. 95% bias-corrected confidence intervals were generated by bootstrapping with 5000 re-samples.

Results

Table 1 provides the means and standard deviations of all explored variables, as well as Pearson correlations for the studied variables. The correlation analysis shows positive and significant associations between all investigated variables.

Table 1 Descriptive statistics and Pearson correlations of the variables.

	Mean	SD	1	2	3	4	5	6
1	0.16	0.52	1					
2	9.31	2.62	.208**	1				
3	3.16	0.92	.653**	.161*	1			
4	16.51	11.19	.456**	.275**	.428**	1		
5	51.27	15.04	.335**	.242**	.369**	.322**	1	
6	0.51	0.15	.580	.271**	.506**	.404**	.360**	1

Note. 1=Authoritarian parenting; 2=Externalizing problems; 3=Harsh/Inconsistent parenting practices; 4=Parental distress; 5=Parental emotion regulation difficulties; 6=Parental irrational beliefs.

** Correlation is significant at the 0.01 level (2-tailed).*

*** Correlation is significant at the 0.05 level (2-tailed).*

Mediation analysis for the parental outcome

The path coefficients in the model are presented in Fig. 3. Authoritarian parenting style was associated with parental irrational beliefs ($\beta = 0.58$, $p < .001$), dysfunctional parental ER strategies ($\beta = 0.19$, $p < .05$), parental distress ($\beta = 0.30$, $p < .001$), and harsh and inconsistent parental practices ($\beta = 0.48$, $p < .001$). Irrational parental beliefs were significantly associated with harsh and inconsistent parental practices ($\beta = 0.14$, $p < .05$), they were also associated with dysfunctional parental ER strategies ($\beta = 0.25$, $p < .01$), and parental distress ($\beta = 0.17$, $p < .05$). Dysfunctional parental ER strategies were associated with both parental distress ($\beta = 0.16$, $p < .05$) and harsh and inconsistent parental practices ($\beta = 0.12$, $p < .05$). Finally, parental distress was associated with harsh and inconsistent parental practices ($\beta = 0.11$, $p < .05$).

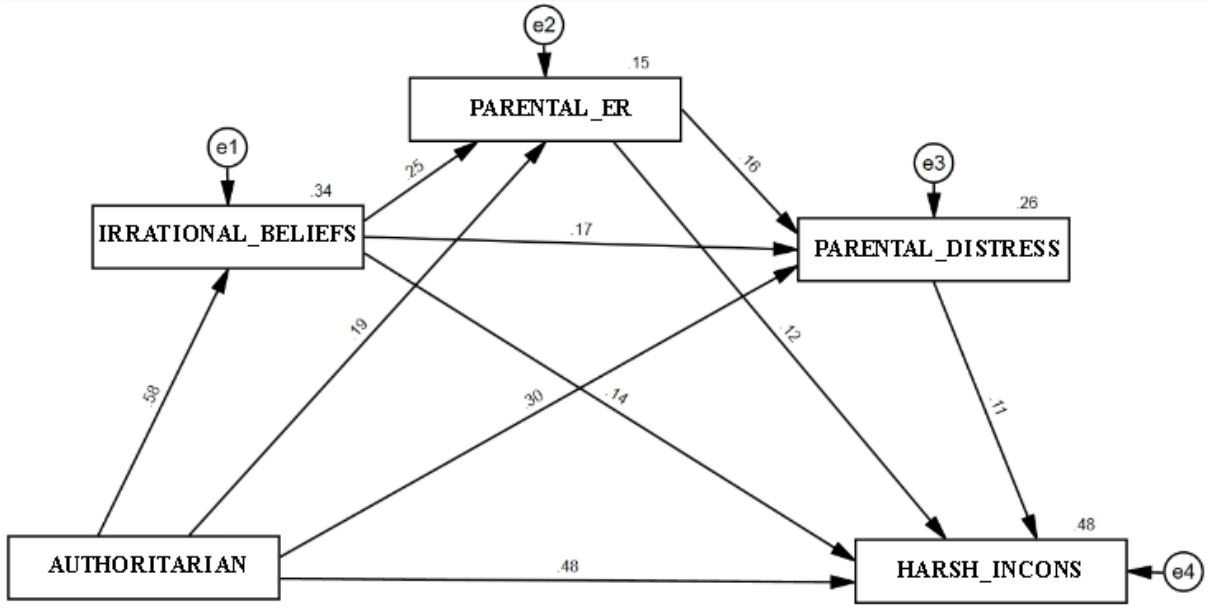


Figure 3. The serial mediation model showing authoritarian parenting style, parental irrational beliefs, parental emotion regulation, parental distress, and harsh parenting behaviors.

Table 2 shows total, serial and specific indirect effects for authoritarian parenting style on harsh and inconsistent parental practices. The results indicate that the total mediation effect was significant (*B* = 11.50, SE = 1.029, 95%CI [9.519, 13.617], *p* = .000). The serial mediation was also significant (*B* = 0.05, SE = 0.035, 95%CI [0.005, 0.176], *p* < .05). Additionally, we investigated three specific indirect effects in the model. While irrational parental beliefs did not mediate the relationship between authoritarian parenting style and harsh and inconsistent parental practices, parental emotion regulation (*B* = 0.41, SE = 0.276, 95%CI [0.014, 1.129], *p* < .05), and parental distress respectively (*B* = 0.612, SE = 0.382, 95%CI [0.028, 1.572], *p* < .05) represent significant partial mediators in the relationship.

Table 2. Total, serial and specific indirect effects for authoritarian parenting on harsh parenting behaviors and bias-corrected 95% confidence intervals

Pathway	B	SE	Bias-corrected 95% CI		p-value
			Lower	Upper	
Total effect	11.501	1.029	9.519	13.617	.000
Authoritarian→Irrational Beliefs→Harsh/Inconsistent Parenting	1.394	.787	-.148	2.900	.078
Authoritarian→Parental Emotion Regulation→Harsh/Inconsistent Parenting	.406	.276	.014	1.129	.037
Authoritarian→Parental Distress→Harsh/Inconsistent Parenting	.612	.382	.028	1.572	.036
Authoritarian→Irrational Beliefs→Parental Emotion Regulation→Parental Distress →Harsh/Inconsistent Parenting	.046	.035	.005	.176	.018

Note. N = 260, bootstrap sample size = 5000, *B*: unstandardized beta (effect), *SE*: standard error, CI: confidence interval.

Mediation analysis for the child outcome

The path coefficients in the model are presented in Fig. 4, and, for most of the model, are identical with the previous analysis. Parental irrational beliefs (β = 0.16, p < .05) and parental distress (β = 0.17, p < .001) is significantly associated with children's externalizing problems, while dysfunctional parental ER strategies is marginally significantly associated with externalizing problems (β = 0.12, p = .052).

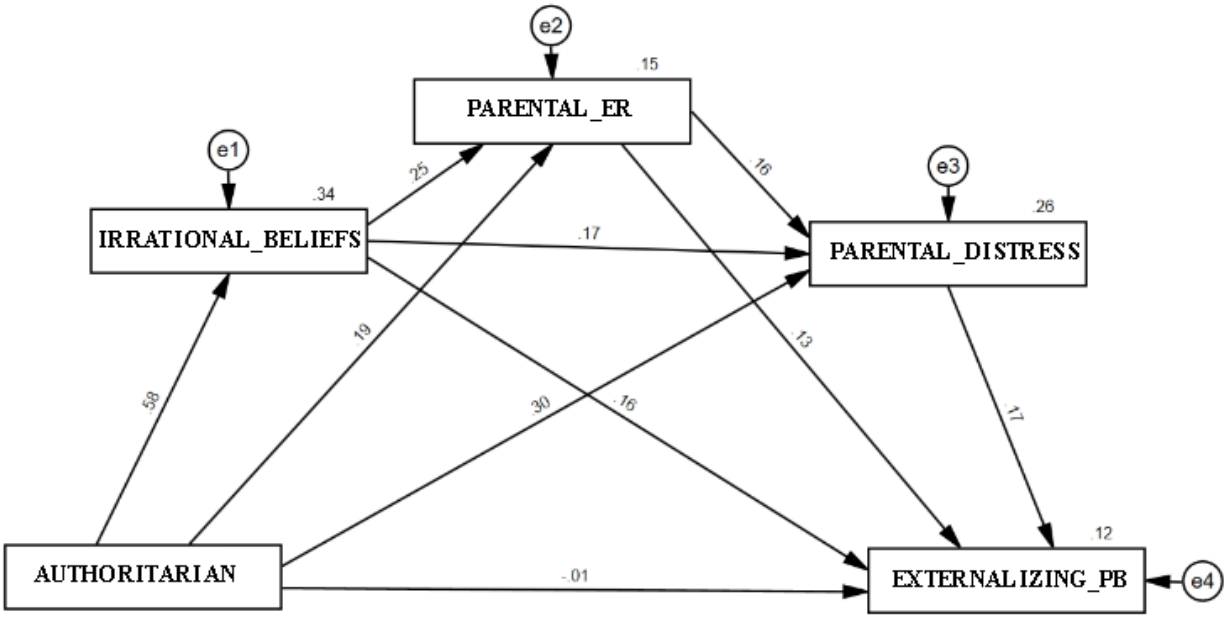


Figure 4. The serial mediation model showing authoritarian parenting style, parental irrational beliefs, parental emotion regulation, parental distress, and child externalizing problems.

The results of the mediation analysis indicated that the total mediation effect is significant (B = 10.47, SE = 3.093, 95%CI [4.198, 16.391], p = .002). The serial mediation was also significant (B = 0.199, SE = 0.148, 95%CI [0.029, 0.683], p < .05). For this model, we also investigated three specific indirect effects. Parental irrational beliefs did not mediate the relationship between authoritarian parenting style and children's externalizing problems. Dysfunctional parental ER strategies (B = 1.25, SE = 0.882, 95%CI [0.072, 3.702], p < .05), and parental distress (B = 2.62, SE = 1.272, 95%CI [0.620, 5.646], p = .009) represent a partial mediator of the relationship between authoritative parenting style and externalizing problems (see Table 3).

Table 3. Total, serial and specific indirect effects for authoritarian parenting on externalizing problems and bias-corrected 95% confidence intervals

Pathway	B	SE	Bias-corrected 95% CI		p-value
			Lower	Upper	
Total effect	10.472	3.093	4.198	16.391	.002
Authoritarian→Irrational Beliefs→ Externalizing problems	4.602	2.489	-.196	9.608	.062
Authoritarian→Parental Emotion Regulation→ Externalizing problems	1.254	.882	.072	3.702	.037
Authoritarian→Parental Distress→ Externalizing problems	2.622	1.272	.620	5.646	.009
Authoritarian→Irrational Beliefs→Parental Emotion	.199	.148	.029	.683	.012

Regulation→Parental Distress → Externalizing problems	

Note. N = 260, bootstrap sample size = 5000, *B*: unstandardized beta (effect), *SE*: standard error, CI: confidence interval.

Discussion

Overall, our findings support the two proposed mediation models, with three serial mediators emphasizing the cognitive and emotional paths that link authoritarian parenting style to the usage of harsh and inconsistent parental practices and with children's externalizing problems.

Our results also support the indirect paths rather than the direct ones of the model which suggests that the chosen mediators explain well the link between authoritarian parenting style and children or parents' behaviors. Indeed, previous studies investigated the impact of parental intervention in which parents' cognitions are targeted (e.g., irrational beliefs), and their results showed improvements in children's problem behavior (David, 2014; Mueller & Moskowitz, 2020). Furthermore, similar work regarding the concept of cognitive-emotional processes as one of the precursors of harsh discipline in the response to misbehavior was done (Pinderhughes et al., 2000). Specifically, when parents had to deal with children's misbehavior and attributed a hostile intent, while being highly upset by misbehavior and preoccupied by the future implications regarding this behavior, and who also had low access to alternative disciplining strategies, were more likely to appeal to dysfunctional discipline. In this vein, our data and previous studies support the idea of incorporating the path of cognitive-emotionality process in order to obtain better outcomes for children's externalizing problems and parental practices.

Previous study shows that when parents need to deal with children's negative behaviors they engage in more ER strategies, compared to parents of children without negative behaviors (Shenaar-Golan et al., 2017). Our study identified a positive relationship between dysfunctional ER strategies and externalizing symptoms, respectively harsh and inconsistent parental practices. Other work reported inconsistent results data regarding suppression in parental context (e.g., Lorber, 2012; Kohlhoff et al., 2016; Shenaar-Golan et al., 2017; Bao & Kato, 2020). With respect to capitulation and escape strategies, data are scarce. For example, Shenaar-Golan and colleagues' (2017) study found that these two ER strategies were not significantly correlated with parental practices. Regarding parental distress, our data identified a positive relationship between parental distress and children's externalizing symptoms, and respectively harsh and inconsistent parental practices. Indeed, when parents are emotionally dysregulated, they might tend to focus on parent-centered responses, soothing their own discomfort, rather than child-centered responses and child's emotional needs (Morelen et al., 2016). For example, mothers with higher levels of overall psychopathology symptoms tend to react in a non-supportive manner to their child's negative emotions, such as temper tantrum (Breaux et al., 2016). Our data suggest that parental distress is a key component for making use of harsh and inconsistent practices with their children. Furthermore, our data shows a positive link between parental distress and children's externalizing symptoms which are consistent with previous studies (e.g., Hermansen et al., 2022; Kochanova et al., 2022).

Practical implications, limitations & new directions

There is a common practice to approach parental mindset in REBT/CBT interventions, but there are few studies that investigated parental irrationality and parenting conceptualization conform to Baumrind theory, as far as we know. Regarding practical implications, practitioners in the parenting domain can focus their intervention not only on parental practices but also on parental emotions to facilitate consistency between what parents do vs. knowing what to do. Indeed, previous studies focusing on parental ER competence found positive effects of parenting interventions (Havighurst & Kehoe, 2017; Hajal & Paley, 2020). Specifically, parents should receive guidance targeting the specific

mechanisms that maintain their problem (e.g., rational beliefs, parental ER strategies). By demonstrating their sequential effects, our study helps to clarify such mechanisms underlying the link between authoritarian parents and harsh and inconsistent practices, and children's externalizing problems. The study has some limitations. Firstly, the results obtained rely only on self-report measures and the study did not include any observation-based outcomes. Regarding the study sample, the majority were mothers (98.7%), and therefore our conclusions cannot be generalized to fathers. Future research may further focus on specific parental ER (e.g., acceptance, putting into perspective) that might be relevant in addressing specific parenting contexts. Also, by investigating authoritative parenting style, studies need to identify specific relevant protective ER strategies.

Conclusions

In conclusion, this study offers important understanding in terms of the authoritarian parents' self-regulatory process, with relevance for the use of harsh and inconsistent parental practices and children's externalizing problems.

3. STUDY 3 - Parenting in Real Time the Noncompliant and Tempered Child: A Longitudinal Intensive Study Looking at Parenting Practices and Parent-Child Factors

Introduction

An intensive longitudinal method, such as the daily diary method, is an accurate and ecologically valid assessment to understand the short-term processes and dynamics within families allowing characterizations of precisions (Zheng & Goulter, 2024). This method offers within-person variability data, particularly, might capture the fluctuations occurred around the individual mean, but it remains stable over time. In this manner, the ecological assessment can reduce the recall biases and allow research to overcome general parenting recommendations in order to facilitate personalized interventions (Russell & Gajos, 2020; Larzerele et al., 2018; Smyth & Heron, 2014). This study aims to (1) explore the parental practices perceived as efficient by parents in managing immediate noncompliance and the parental practices in response to temper tantrums; (2) investigate the effects of parenting hassles and parental nurturance on children's noncompliance and temper tantrums in the next day, and (3) investigate the effects of parenting styles, parenting discipline practices, parental responses to children's negative emotions and child's temperament on noncompliance and temper tantrums occurrence.

METHOD

Participants

The sample consisted of parents N= 170, 166 mothers (females: 97.65%) and 3 fathers (1.76% males), whose children were between 2 and 8 years old (72 girls:42.9% and 94 boys:56%); for one parent (0.59%- unknown gender) and his/her child we do not have information about their gender. The sample was not balanced in terms of gender. The mean age of the children's sample was 3.93 years old and the mean age for the parents' sample was 33.95 years old (range 20-49). The children were assessed as having elevated levels of Noncompliance and/or Temper Loss. The eligibility criteria were established based on the Noncompliance subscale − 95th% threshold = 1.61 and/or Temper Loss subscale − 95th% threshold = 1.60, from *The Multidimensional Assessment of Preschoolers - MAPS*; Wakschlaget al., 2014).

Study design

The study uses an intensive longitudinal method, a daily diary – a long micro timescale during a 10-day interval (Bolger & Laurenceau, 2013; Bamberger, 2016).

Procedure

This study has two major phases. The first phase consisted of completing the set of questionnaires about parenting style, ESP, and children's temperament (via Google forms). In the second phase, participants start the journal collecting data. Parents provided consent online. The data were collected daily, via the PIEL Survey App or Google forms.

Instruments

Pre-monitoring measures: Temperament was measured via the Children's Behavior Questionnaire – CBQ (Putnam & Rothbart, 2006). Parenting styles were measured via the Parenting Styles and Dimensions Questionnaire - PSDQ (Robinson et al., 2001). Harsh & inconsistent and praise parental practices were measured via Parent Practices Inventory (PPI; Oregon Social Learning Center, - Revised, 2019). Parental emotion socialization practices (ESP) were assessed with Coping with Children's Negative Emotions Scale – CCNES (Fabes et al., 2002).

Daily measures: Children's noncompliant behaviors were measured via parents' report on 7 items describing noncompliance types (Larzelere et al., 2018; Kuczynski & Kochanska, 1990). Discipline practices as responses to children's noncompliance were measured with the Nurturing and Discipline Practices Questionnaire - Responses to Misbehaviors form (Knowles & Larzelere, 2013).

Parents' nurturing practices were assessed via parents' self-report, with Nurturing and Discipline Practices Questionnaire – Nurturing form (Knowles & Larzelere, 2013). Parenting Daily Hassles were measured via self-parents' completed Parenting Daily Hassles Scale - PDHS (Crnic & Greenberg, 1990). Children's temper tantrum episodes & coping with children's temper tantrums were assessed via one item regarding the presence or absence of it and via Coping with Children's Negative Emotions Scale, toddler's variant – CCNES (Fabes et al., 2002).

Analytic plan

We used descriptive statistics, such as mean, range, and standard deviation, to investigate the prevalence of parents using certain discipline strategies for different types of non-compliance and temper tantrum behaviors. The overall occurrence of noncompliance and tantrums was also analyzed over the span of 10 days. A comparison was made between the strategies that were perceived as most effective versus their actual use in a natural day-by-day context. The within-person effect of nurturance and daily hassles on noncompliance occurrence was investigated using a lagged regression model. The between-person effect was calculated as the baseline differences in the trait-variables measured before beginning the daily diary, and their effect on the total counts of noncompliance (overall and subtypes) and on temper tantrums, were computed using Poisson regression models. All analyses were conducted using the R software and RStudio version 2024.12.0-467 (R Core Team, 2021).

4. RESULTS

Descriptive statistics regarding the strategies that are perceived as most effective for dealing with overall noncompliance and the three responses that were most frequently used to deal with children's temper tantrums are presented in **Table 1**.

Within-person processes approach

No statistically significant results were found regarding the level of nurturance or parenting hassles affecting the probability of noncompliance and temper tantrums the next day.

Between-person processes approach

For the last analysis we did Poisson regression models (PRM) with moderators for overall noncompliance, the three types of noncompliance, as well as temper tantrum occurrences.

Regarding the child's age, the PRM identified a significant negative association between age and both overall noncompliance and each type of noncompliance. Specifically, the results indicate that for each additional year of age (Estimate=-0.069, $p<0.001$, IRR=0.933), the expected count of overall noncompliance decreases by approximately 6.7%. Similarly, for each type of noncompliance a significant negative relationship with age was found, as follows: for the expected count of parent-avoiding noncompliance a decreases by approximately 7.2% (Estimate=-0.074, $p<0.001$, IRR=0.928) for each additional year of age; for the expected count of parent-oriented noncompliance, a decrease by nearly 3%, but not representing a statistically significant result (Estimate=-0.027, $p>.05$); and for the expected count of parent-opposing noncompliance a decrease by approx. 19.6% (Estimate=-0.217, $p<0.001$, IRR=0.804).

Table 1.

Descriptive statistics of the strategies used by parents deemed to be the most effective/ used

Responses to Noncompliance & Responses to Temper tantrums	N		Minimum Rating	Maximum rating	Mean	Std. deviation
	N inputs	N parents				
Overall noncompliance & I explained to my child why he/she shouldn't behave that way.	706	65 38.2%	1	7	3.17	1.148
Overall noncompliance & I reminded/reaffirmed the rule (e.g. "you know you have to share the toys").	706	46 27%	1	7	2.92	1.264
Overall noncompliance & I described a natural consequence (e.g. "if you don't share, the other kids won't want to play with you").	706	71 41.7%	1	7	2.80	1.250
Parent-avoiding noncompliance & I described a natural consequence (e.g. "if you don't share, the other kids won't want to play with you").	555	97 17.5%	1	7	NA	NA
Parent-avoiding noncompliance & I explained to my child why he/she shouldn't behave that way.	555	88 15.9%	1	7	NA	NA
Parent-avoiding noncompliance & I reminded/reaffirmed the rule (e.g. "you know you have to share the toys").	555	61 11.0%	1	7	NA	NA
Parent-opposing noncompliance & I described a natural consequence (e.g. "if you don't share, the other kids won't want to play with you").	293	46 15.7%	1	7	NA	NA
Parent-opposing noncompliance & I explained to my child why he/she shouldn't behave that way.	293	35 11.9%	1	7	NA	NA
Parent-opposing noncompliance & I reminded/reaffirmed the rule (e.g. "you know you have to share the toys").	293	22 7.51%	1	7	NA	NA
Parent-oriented noncompliance & I described a natural consequence (e.g. "if you don't share, the other kids won't want to play with you").	335	65 19.4%	1	7	NA	NA

Parent-oriented noncompliance & I explained to my child why he/she shouldn't behave that way.	335	44 13.1%	1	7	NA	NA
Parent-oriented noncompliance & I reminded/reaffirmed the rule (e.g. "you know you have to share the toys").	335	27 8.06%	1	7	NA	NA
Tantrum & DR	326	NA	1	10	2.37	1.565
Tantrum & PFR	326	NA	1	10	2.13	1.291
Tantrum & EE	326	NA	1	10	2.12	1.382

Mean Noncompliance: based on frequency of parental practices perceived as effective. DR: distress reaction; PFR: Problem-focused reaction; EE: Expressive Encouragement
NA=not applicable

Regarding the child's gender, the PRM identified that gender was positively associated with some type of noncompliance. Particularly, for girls it showed an increase of approx. 818% in expected counts of parent-oriented noncompliance (Estimate=2.217, $p<0.05$, IRR=9.183) as compared to males.

For parent-opposing noncompliance the results showed a significant negative interaction between child gender and age (Estimate=-0.164, $p<0.001$) indicating that the association between age and parent-opposing noncompliance differs between genders, as the decrease in defiance as girls age is significantly more pronounced than it is for boys. For temper tantrums, the PRM revealed that child gender significantly shapes how various factors influence tantrum frequency. The positive interaction between gender and age (Estimate=0.128, $p<0.001$, IRR=1.137) suggests that, compared to boys, the expected rate of tantrum occurrences increases by approximately 13.7% with each additional year of age for girls.

Regarding parenting styles, authoritarian parenting demonstrated a positive association with the overall noncompliance (Estimate=2.599, $p<0.001$, IRR=13.457), implying that children parented with this style are expected to exhibit over 1200% more overall noncompliance than children parented with less authoritarian style.

When addressing each type of noncompliance, the results showed that higher scores on authoritative parenting were significantly associated with increased parent-oriented noncompliance (Estimate=2.878, $p<0.05$, IRR=17.784), thus, increasing the expected count of it by more than 1600%. Authoritative parenting (Estimate=3.240, $p<0.01$, IRR=25.551) style was significantly associated with higher levels of parent-avoiding noncompliance, suggesting that children raised in these environments are expected to exhibit substantially more parent-avoiding noncompliance.

For parent-opposing noncompliance, the findings relate to the interaction effects between child gender and parenting styles: authoritative (Estimate=-14.241, $p<0.001$), authoritarian (Estimate=-14.961, $p<0.001$), and permissive (Estimate=3.879, $p<0.001$). For girls, the relationship between increased authoritative parenting style and instances of parent-opposing noncompliance is significantly lowered compared to boys, or even nonexistent, while the relationship with permissive parenting is positive (IRR=4.83), suggesting an increase with over 380% in parent-opposing noncompliance for every unit increase in permissive parenting.

For tantrums frequency the model also reveals significant interactions between gender and parenting styles. Particularly, there is a negative interaction for both authoritative and authoritarian parenting styles, suggesting that for girls, the rate of tantrums is reduced more significantly than it is in boys, but the effect is so small that it has no practical implications. Contrary, permissive parenting is positively associated with tantrums (Estimate=2.332, $p<0.001$, IRR=10.302), meaning that one-unit increase in permissive parenting is linked with an increase in the expected rate of tantrums by approx. 930% for girls compared to boys.

Regarding emotion socialization practices, both (EFR) (Estimate=0.103, $p<0.01$, IRR=1.109) and (DR) (Estimate=0.141, $p<0.001$, IRR=1.152) showed significant positive relationships, with a one-unit increase corresponding to an approx. 10.9% and 15.2% increase in expected overall noncompliance, respectively. Furthermore, interaction effects between child gender and DR (Estimate=-0.227, $p<0.001$, IRR=0.758) with girls having a lower count of expected overall noncompliance with 24.2% given a one-unit increase in DR.

When specifically investigated, the results showed that higher scores on EE (Estimate=0.181, $p<0.001$) and DR (Estimate=0.307, $p<0.001$) were associated with increased counts of parent-oriented noncompliance; with expected increases of nearly 20%, as well as 35% with a one-unit increase of the respective variables.

For parent-avoiding noncompliance, the DR had a positive effect (Estimate=0.219, p<0.001), with each unit increase leading to a 24.5% increase (IRR=1.245). Moreover, interaction effects revealed sex-related differences; specifically, for every unit increase in DR, girls have a lower expected count of parent-avoiding noncompliance with approx. 36% compared to boys (Estimate=-0.450, p<0.001, IRR=0.637).

For parent-opposing noncompliance, the results identified an interaction effect involving (EE) in predicting it, which is conditional on the child's gender (Estimate = 0.418, p < 0.001, IRR=1.619), with girls having a 62% increase in parent-opposing noncompliance when faced with a 1 unit increase in EE, compared to boys.

For tantrums, the results found again a relationship moderated by gender; specifically, a negative interaction for (EFR) and tantrums occurrences (Estimate=0.347, p<0.001, IRR=1.415) meaning that higher levels of EFR are associated with a 41.5% smaller rate of tantrum behavior for girls, compared to boys.

Regarding parental practices, higher scores on praise were associated with a significant decrease in parent-oriented noncompliance (Estimate=-0.118, p<0.001, IRR=0.888) and in parent-avoiding noncompliance (Estimate=-0.190, p<0.001, IRR=0.826), corresponding to an approximate 11.5%, as well as a 17.% reduction in expected counts. Interaction effects were found in predicting parent-opposing noncompliance, conditional on the child's gender, for harsh & inconsistent discipline (Estimate=0.584, p<0.001, IRR=1.802), and praise (Estimate=0.356, p<0.001, IRR=1.428). Specifically, for girls when harsh discipline increases with one-unit, the expected count of parent-opposing noncompliance increases with 80% more instances as compared to boys. The same pattern goes for praise, but the increase is bigger with 42% as compared with boys.

Regarding child temperament, higher levels of negative affectivity were linked to decreased overall noncompliance (Estimate=-0.252, p<0.001, IRR=0.776), with each unit increase associated with a roughly 22.2% decrease in noncompliance. Furthermore, interaction effects between child gender and negative affectivity (Estimate=0.446, p<0.001, IRR=1.563), with girls having a 56.3% increase in expected count of overall noncompliance, as compared to boys. Taking by type of noncompliance, one-unit increase for each temperament characteristics, particularly, child surgency (Estimate=0.179, p<0.001, IRR=1.196) was associated with nearly a 20% increase in parent-oriented noncompliance; negative affectivity (Estimate=-0.286, p<0.001, IRR=0.750) was associated with a decrease of 25% in parent-avoiding noncompliance.

Discussion

This study provides a parental perspective regarding effective responses to children's noncompliance in general (obtaining compliance), the three most frequently rated parental practices were as follows: (1) presenting natural consequences (2) explaining why that behavior is important and (3) reminding the rules. In relation to each type of noncompliance (i.e., parent-oriented, parent-avoidant, parent-opposing), parental practice remains the same. These results indicate that based on the parents' perspective they can manage noncompliance without too much control. Regarding the frequencies of noncompliance types, the parent-avoiding was the most frequently employed, while parent-opposing noncompliance was the least frequently manifested. Similarly, another study (Van den akker et al., 2024) concluded that children's daily disruptive behaviors severity was significantly positively associated with negative consequences, negative and positive attention, suggesting thus that practices with more control have ineffective effects. Additionally, non-significant but positive correlation also was found for positive consequences and withhold attention, suggesting that as correlation was not significant, disruptive behaviors might appear as well in the context of effective parenting (Van den akker et al., 2024).

Secondly, given that parent-opposing noncompliance includes behaviors of tantrums, our study focuses as well on parents' reactions to only tantrums episodes, revealing that the most frequent reaction was distress reaction, expressive encouragement and problem-focused reaction. These results indicate that parents try to respond in a supportive manner to the child's tantrums, but at the same time they seem to be distressed by the child's emotion. Other studies found that parents' most common reactions to tantrums were ignoring, distraction and reward scheme (Lorena, 2015), and speaking soothingly (Al Ubaidi et al, 2023). This means that parents might be more open to supportive emotion socialization practices toward their children, but at the same time they might struggle with their own emotional needs. Also, tantrums and anger might be more difficult to tolerate than emotions of sadness or fear as anger is typically associated with active, sometimes aggressive behaviors that can be disruptive and demanding, whereas sadness and fear often lead to more passive behaviors, which may be perceived as less challenging to address.

With respect to within-person processes approach, our study did not find significant effects for neither parenting hassles nor parental nurturance on children's noncompliance and temper tantrums occurrences on the next day. Similarly, parenting daily tasks were found positively linked but not significant with externalizing or internalizing children problems (Coplan et al., 2003); moreover, the mean scores of parenting hassles regarding parenting tasks in our study were lower within the range of values reported by Crnic & Booth (1991) or in other data where the relationship was significant (e.g., Creasey & Reese, 1996), suggesting that parents in our sample might experience low level of parenting hassles. Regarding the effects of parent-child factors on child noncompliance and the occurrence of temper tantrums, our results identified multiple factors implicated (child age, child sex, parenting style, various parental practices and children's temperament traits).

Regarding practical implications, these findings provide important input from parents' perspective regarding managing children's noncompliance and tantrums, suggesting several different interactions for different types of noncompliance. Our results also suggest that intervention strategies targeting child's types of noncompliance and tantrums may need to be tailored differently for boys and girls. Moreover, this study offers a more detailed view about parental practices and children's provocative behaviors (a needed approach - Larzelere et al., 2018). Among study limitations a point to be mentioned is the large variability of interaction effects across the data, which could mean that the sample has a wide range of scores that do not always follow a consistent pattern. Future research can focus on study designs that can provide examinations of short-term processes on a micro timescale, as well as the long-term on a macro timescale (Zheng & Goulter, 2024). Additionally, the specificity of the concepts (types of noncompliance or compliance, label vs. unlabeled praise) can be better assessed in future studies. Finally, because parents reported on both their own and their child's behaviors, another limitation is the potential for single reporter bias, as their perceptions may be influenced by stress and their psychological state. Future research could address that by incorporating multiple data sources (e.g., from both parents) to ensure a more accurate and balanced understanding of child behaviors.

Conclusions

In conclusion, these findings offer important input from parents' perspective regarding managing the most common challenging child behaviors, investigating types of noncompliance and tantrums, in order to differentiate and response in a more efficacy manner.

4. STUDY 4 - Time-out or Time-In for Children with Noncompliance and Temper Tantrums? A Randomized Clinical Trial Investigating their Short and Long-term Efficacy within a Brief Online Parenting Intervention

Introduction

The main objective of this study is to investigate the efficacy of TO and TI addressing children's noncompliance and/or temper loss episode on both immediate compliance and long-term child mental health. Thus, we hypothesized that TO will have positive effects on children's noncompliance and temper loss problems in the short and over time, and well as beneficial effects on children's problems in the long term. We were not able to formulate hypotheses in terms of the comparative efficacy of TI given the lack of rigorous empirical research. However, based on the theories proposed and existing preliminary data, we consider this trial a superiority trial in which it would be expected TI to be more effective that TO in terms of the long-term effects on the emotional and mental health of the children. Parental stress, ESP and children's negative temperament will be considered for moderating the efficacy of the interventions. Specifically, we expected the interventions to be more effective when parents are not under stress, use supportive ESP for children and when the child has an easy temperament. The main children's outcomes are noncompliance and temper loss behaviors as well as externalization and internalization problems as sign of mental health.

METHOD

Participants

To be eligible for the study, participants needed to be parents of a biological child aged between 2–8-year-old with elevated levels of noncompliance and/or temper tantrums (based on the Noncompliance subscale − 95th% threshold = 1.61, and/or Temper Loss subscale − 95th% threshold = 1.60 from The Multidimensional Assessment of Preschoolers – MAPS. The exclusion criteria represented the presence of psychiatric diagnoses of children or the current psychological or medicated treatment for noncompliance and/or temper tantrum behaviors. 108 parents were eligible to receive allocation and 70 parents participated in the study and accessed one intervention (mean age of 33.9 years old), and their child with a mean age of 3.9 years old.

Recruitment

The study was approved by the IRB of the authors university. The consent was given at each data collection, and the responses were collected via a google form link. Due to the negative reputation about TO we faced a situation where some participants assigned to the TO group dropout out the study after receiving the access to the TO intervention and could see the content. Consequently, we decided to initiate additional recruitment efforts. The attrition rate for TO group is 30% and for TI group is 22% from pre-test to post-test.

Measures

Noncompliance and Temper Loss was assessed via The Multidimensional Assessment of Preschoolers - MAPS. Children's mental health was assessed via The Strengths and Difficulties Questionnaire (SDQ. Parental stress was measured via the Parental Stress Scale – PSS. Temperament was measured via the Children's Behavior Questionnaire – CBQ. Parental emotion socialization practices were assessed with Coping with Children's Negative Emotions Scale – CCNES.

Design and Procedure

The study was a randomized-two-arm trial and with a four-points time assessments (pre, post, follow-up1 and follow-up2 design).

Intervention

This study was conducted entirely online (using the Google Forms tool). During the first two weeks, the parents' instruction was to learn about the steps of TI or TO implementation with their child.

During these two weeks parents could interact with the researcher, by sending questions about the technique and answering them via email; also, parents received 3 reminders on their phone number to study the materials. Afterwards, parents received another reminder instructing them to implement the technique with their child. The next steps consist in completing post-intervention, follow-up1 at 6 and follow-up2 at 12 months.

The TO intervention: the intervention consisted in text and video materials (2.37 minutes) representing psychoeducation about TO and the mechanisms on which the technique is based, an infographic summarizing the steps parents need to take considering the child's responses and one audio material explaining each step (19.53 minutes). If the child refuses TO, the parents are instructed to apply a logical consequence or to remove a privilege (e.g., screen time for that day). This alternative was designed to reduce the physical restraint or force with the child. Also, parents were also informed to use frequent rewards for the child's adaptive behavior before starting using TO (for example, parents were encouraged to use praise when children were compliant) and to apply TO no more than 1-2 times a day.

The TI intervention: the intervention consisted in text and video materials (2.42 minutes) representing psychoeducation about TI and emotion coaching, and the mechanisms on which the technique is based, infographic summarizing the steps parents need to take based on the child's responses, and one audio material explaining each step (16.17 minutes). In each group, before submitting their registration through the Google Form tool, parents had two exercises aimed to engage them and personalize the technique to their own needs. Specifically, they had to answer questions about the benefits of either TO or TI, and think about which child behavior the technique could be applied to. They also had the opportunity to address their own questions to the researchers.

Statistical Analysis

Using homogeneity tests, the pre-test variance between the groups was examined in the initial analysis to look for any significant differences. Non-parametric tests were used for noncompliance, where significant differences were discovered. A Kruskal-Wallis test was used to evaluate the short-term impact of the treatments by comparing the post-test noncompliance rates of the TI and TO groups. Repeated-measures ANOVA was used to assess temper loss from the pre-test to the post-test in order to determine the impact of time and the interaction between time and group. A repeated-measures ANOVA was used to compare temper loss at all-time points (pre-test, post-test, follow-up1, and follow-up2), while Kruskal-Wallis tests were used to reevaluate the effects of the long-term intervention on noncompliance at follow-up points. Furthermore, fixed-effect omnibus tests were used to evaluate the impacts of moderators such as parental stress and children's negative affect. Furthermore, fixed-effect omnibus tests and simple effects analyses were used to evaluate the impacts of moderators, such as parental stress and children's negative affect, in order to ascertain their impact on intervention results.

Results

The groups did not significantly differ for the main demographic variables. Significant differences were identified between the two groups regarding parents' education, family income and family support (other than partners). The analysis regarding these three demographic differences between groups at pre-test revealed no differences between groups regarding temper loss and noncompliance. In the case of noncompliance, significant differences were identified between the two groups (p=.034), based on homogeneity tests. In this case, non-parametric analyses were conducted. For temper loss, we did not identify any significant differences in terms of homogeneity. This is available as well for externalization, internalization and total problems.

Short-term interventions effects

Due to significant differences identified at pre-test for noncompliance we ran the Krustal-Wallis test. The results reveal no significant differences between the TO and the TI groups at post-test in terms

of noncompliance, χ^2([1,61], N=61) =.09, p=.78. Regarding temper loss, a significant effect for time $F_{(1,59)}$=19.57, p<.001, but not for time by group interaction $F_{(1,59)}$=<1, ns. The profile plots indicate a decrease trend in temper loss for both groups after the intervention **(see Figure 2).**

Regarding externalization problems, the results of the repeated-measure analysis of variance on the short-term effect (pre-post) show a significant effect for time ($F_{(1,59)}$=8.08, p=.006), but not for the time by group interaction ($F_{(1,59)}$=<1, ns). For internalization problems the results of the analysis of the repeated-measure analysis of variance on the short-term effect (pre-post) show a non-significant effect for either time or time by group interaction. For children's total problems the results of the repeated-measure analysis of variance on the short-term effect (pre-post) show a significant effect for time ($F_{(1,59)}$=86.64, p=.013), but not for the time by group interaction ($F_{(1,59)}$=<1, ns) **(see Figure 3).**

Long-term interventions effects

The Krustal-Wallis test reveals no significant differences between the TO and the TI groups at follow-up1 in terms of noncompliance, χ^2([1,59], N=59) =2.06, p=.15. At follow-up2, the differences between groups remain non-significant, χ^2([1,59], N=59) =1.03, p=.31. For temper loss behaviors the results of the analysis of the variance on the long-term intervention effects (pre-test, post-test, follow-up1, and follow-up2) reveal a significant effect for time ($F_{(3,135)}$=7.40, p<.001), but not for the time by group interaction ($F_{(3,135)}$=>1, ns) **(see Figure 2).** Similarly, for externalization problems, the results of the analysis of the variance show a significant effect for time ($F_{(3,45)}$=3.83, p=.016), but not for the time by group interaction ($F_{(3,45)}$=< 1, ns), on the long-term intervention effects (pre-test, post-test, follow-up1, and follow-up2). For internalization problems, the results of the repeated-measure analysis of variance on the long-term intervention effects show a non-significant effect for either time or the time by group interaction. For children's total problems the results of the repeated-measure analysis of variance on the long-term intervention effects show a non-significant effect for either time or the time by group interaction **(see Figure 3).**

Moderators

We tested parental stress, parental emotion socializing practices (ESP) and children's temperament as moderators in relation to children's temper loss and mental health problems. The next section indicates the results for temper loss. About mental health problems (externalization, internalization and total mental health problems) no moderators were found to be significant. We explored post-hoc analyses based on percentiles for each moderator, examining the effect of time within each intervention.

Table 2. Short & Long-Term Intervention Effects for Child's Behaviors

	TO intervention (N=21)								TI intervention (N=26)											
	Pre N=32		Post N=29		F1 (6 months) N=26		F2 (12 months) N=25		Pre N=38		Post N=32		F1 (6 months) N=33		F2 (12 months) N=34		Anova *F*		*p*		n^2	
Measure	**M / %**	**SD**	**M / %**	**SD**	**M / %**	**SD**	**M / %**	**SD**	**M / %**	**SD**	**M / %**	**SD**	**M / %**	**SD**	**M / %**	**SD**	**Short-term**	**Long-term**	**Short-term**	**Long-term**	**Short-term**	**Long-term F1/F2**
Temper loss	1.78 / 43%	1.02	1.27 / 24%	.71	1.28 / 19%	.93	1.45 / 32%	1.10	2.17 / 73%	.92	1.75 / 43%	.98	1.43 / 36%	.79	1.48 / 50%	.78	.43	1.08	.52	.36	.058	.004
Externalization Problems	7.75	3.55	6.55	3.50	7.34	3.61	6.48	3.59	8.63	3.72	7.56	3.40	7.00	3.97	6.94	3.89	.03	.65	.86	.58	.022	.004
Internalization Problems	5.04	2.39	4.90	2.80	4.33	2.39	5.28	3.33	5.38	3.31	4.69	2.87	5.61	3.73	4.23	2.51	.40	1.96	.528	.134	.007	.120
Total problems	13.09	4.51	11.95	4.60	11.95	4.63	12.04	5.98	14.46	6.08	12.11	5.39	12.30	4.66	11.57	5.02	.20	.39	.652	.760	.003	.027
																	χ^2		*p*			
Noncompliance	2.58 / 96%	.74	2.19 / 65%	.87	2.12 / 69%	.83	2.12 / 72%	1.10	2.64 / 92%	.97	2.21 / 59%	1.12	2.08 / 63%	1.04	2.00 / 70%	.85	**Short-term** .09	**Long-term** 2.06	**Short-term** .78	**Long-term**		**Long-term** .31

Note: F1/F2 = Follow-up1/2; Anova *F* = time x group interaction; n^2 = eta squared; χ^2 = Krustal-Wallis test; %= the percentage of the noncompliance or temper loss status as being present - 95th% threshold, at each time poin

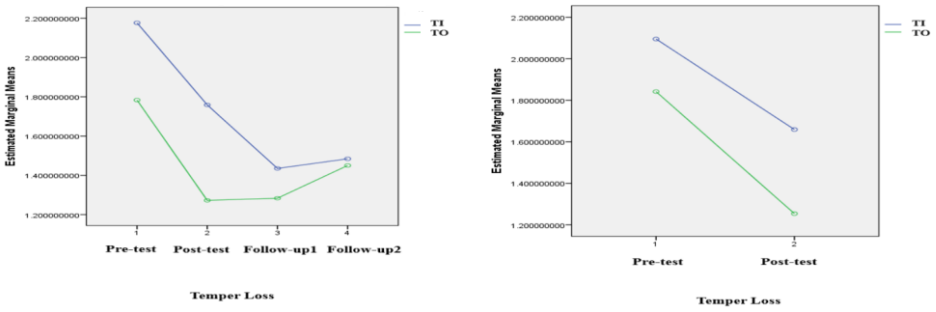


Figure 2. Profile plots of pre-posttest and pre-post-F1-F2 differences of temper loss
Note: F1/F2 = Follow-up1/2

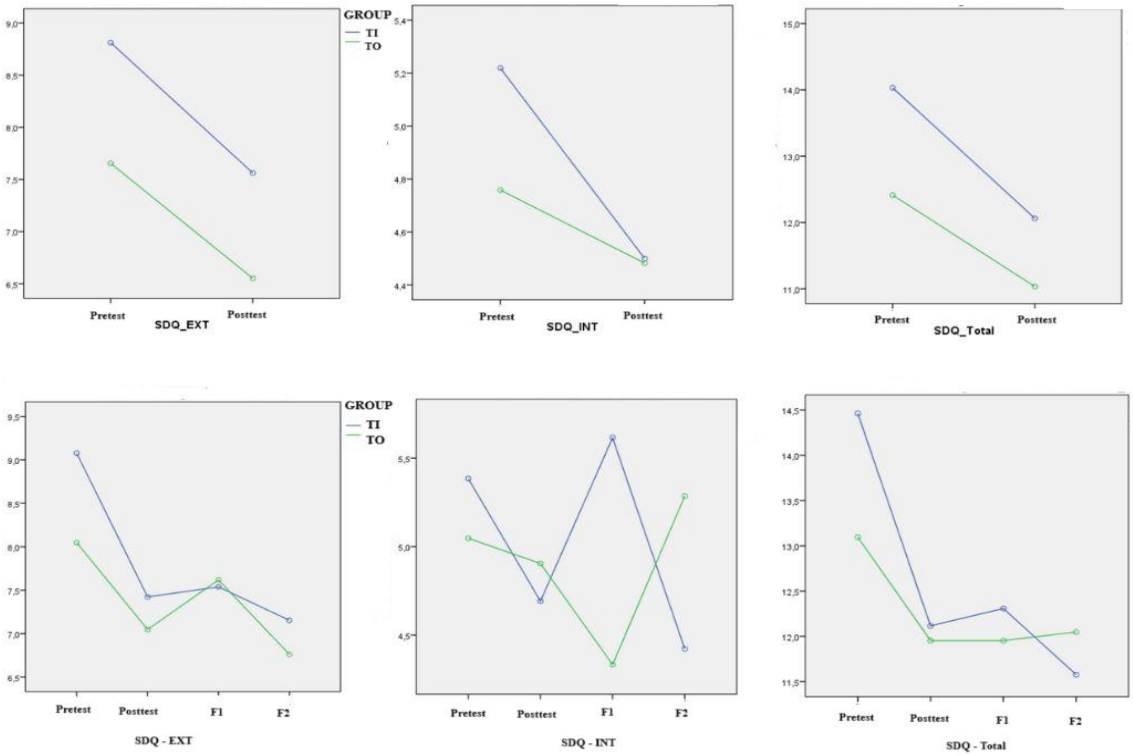


Figure 3. Profile plots of pre-posttest and pre-post-F1-F2 differences of SDQ-EXT= externalization; SDQ-INT=internalization; SDQ-TOT= total problems
Note: F1/F2 = Follow-up1/2.

Parental stress

The fixed effect omnibus test shows a non-significant effect for group, a significant effect for time ($F_{(3,172.8)}$=6.89, p<.001) and a significant effect for parental stress ($F_{(1,189.9)}$=24.37, p<.001). No interaction effect was identified for group and time, time and parental stress, and group and parental stress levels. The interaction for group, time and parental stress was significant ($F_{(3,175.7)}$=3.85, p<.05), indicating significant differences between groups in improving children's temper loss based on the levels of parental stress. The fixed effects parameter estimates show significant differences between pre-test and all three time-points, for time 1 (differences between pre- and post-test) β=-.37, p<.001, time 2 (differences between pre-test and follow-up1) β=-.48, p<.001, and time 3 (differences between pre-test and follow-up2) β=-.29, p<.05, indicating significant modification of temper loss

between pre-test and all three following assessments. At time 3, there is a significant interaction of time and parental stress β=.03, p<.05. Also, significant differences have been identified between the two groups as a function of parental stress levels at follow-up1 compared to pre-test β=.09, p<.001, as well as at follow-up2, β=.06, p<.05, indicating medium to long-term effects of the interventions on temper loss, as a function of parental stress levels.

When investigated in detail, the simple effects of group no longer presented significant differences between the two interventions contingent on the levels of parental stress, with one exception. At pre-test, there are significant differences between groups in temper loss levels at the 75th percentile of parental stress β=-.43, p<.05; these results are maintained at post-test, where there are significant differences between the two interventions favoring TO for the 75th percentile of parental stress β=-.53, p<.05. However, we cannot conclude relevant information about the 75th percentile of parental stress due to significant differences from the initial level.

Post-hoc analyses: The simple effects of time show that for the TI group, at the 25th percentile of parental stress, there are significant improvements between pre-test and follow-up2 β=-.45, p<.05. At the 50th percentile of parental stress, there are significant improvements between both pre-test and follow-up1, β=-.42, p<.05, and pre-test and follow-up2, β=-.45, p<.01. At the 75th percentile of parental stress, there are significant improvements in temper loss between pre-test and follow-up1 β=-.68, p<.001, as well as between pre-test and follow-up2 β=-.45, p<.01. Specifically, from the time viewpoint within TI intervention, results show that TI is effective in reducing children's temper loss levels (long-term, from pretest to follow-up1 and 2), regardless of the parental stress level (from 25th to 75th percentile).

The simple effects of time show that for the TO group, at the 25th percentile of parental stress, there are significant improvements between pre-test and post-test β=-.65, p=.002, pre-test and follow-up1 β=-.80, p<.001, and pre-test and follow-up2 β=-.50, p<.05. At the 50th percentile of parental stress, there are significant improvements only between pre-test and post-test β=-.55, p<.001, and between pre-test and follow-up1 β=-.58, p<.001. At the 75th percentile of parental stress, there are no significant time differences, which shows that TO is particularly effective in reducing children's temper loss (short-term and a tendency to long-term) when parents experience low to moderate levels of parental stress.

Children's negative affect

The fixed effect omnibus test shows a non-significant effect for group, a significant effect for time ($F_{(3,170.9)}$=8.48, p<.001) and a significant effect for negative affect ($F_{(1,212)}$=26.49, p<.001). No interaction effect was identified for group and time, time and negative affect, and group and negative affect. The interaction for group, time and negative affect was significant ($F_{(3,178.6)}$=2.79, p<.05) indicating significant differences between groups in improving children's temper loss based on the levels children's temperament. The fixed effects parameter estimates show significant differences between pre-test and all three time-points, for time 1 (differences between pre- and post-test) β=-.39, p<.001, time 2 (differences between pre-test and follow-up1) β=-.51, p<.001, and time 3 (differences between pre-test and follow-up2) β=-.46, p<.05. Hence, the results indicate an overall, significant modification of temper loss in time at each assessment point, compared to the initial evaluation. Significant differences have been identified between the two groups as a function of negative affect levels of the child at follow-up1 compared to pre-test β=.86, p<.001, as well as at follow-up2, β=.06, p<.01.

The simple effects of group show that at post-test, there are significant differences between the two interventions for the 50th percentile of negative affect of the child β=-.56, p<.05 and at the 75th percentile β=-.64, p<.05. The analysis of the result plots for the 50th and 75th percentile of negative affect of the child shows that the TO group presents lower scores. Therefore, we can not conclude information based on the 75th percentile of negative affect because there is a significant difference at the initial level that may not be relevant/correct for the differences observed in post-

test. Regarding the 50th percentile of negative affect, the data show us that there is a significant difference in decreasing temper loss levels between the two interventions (TO registering lower scores) but just when negative affect is medium **(Figure 5).**

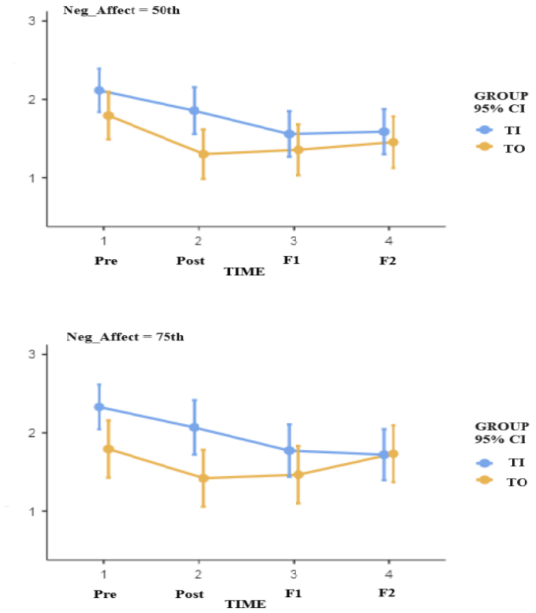


Figure 5. Profile plots of pre-post-F1-F2 differences of temper loss based on the sample of parents with 50th and 75th percentile of negative affect
Note: F1/F2 = Follow-up1/2

Post-hoc analyses: The simple effects of time show that for the TI group, at the 25th percentile of negative affect levels of the child, there are significant differences between pre-test and follow-up1 β=-.55, p<.01, and between pre-test and follow-up2 β=-.41, p<.05. At the 50th percentile of negative affect levels of the child, there are significant differences between both pre-test and follow-up1, β=-.56, p<.001, and pre-test and follow-up2, β=-.53, p<.001. At the 75th percentile of negative affect levels of the child, there are significant differences in temper loss between pre-test and follow-up1 β=-.56, p<.01, as well as between pre-test and follow-up2 β=-.61, p<.001. Overall, these results indicate that TI is effective in reducing temper loss levels regardless of the levels of the negative affect of the child is (from 25th to 75th percentile), only from pretest to follow-up1 and pretest to follow-up2.

The simple effects of time show that for the TO group, at the 25th percentile of negative affect levels of the child, there are significant differences between pre-test and post-test β=-.67, p<.001, pre-test and follow-up1 β=-.60, p< 01, and pre-test and follow-up2 β=-.75, p<.001. At the 50th percentile of negative affect levels of the child, there are significant differences between pre-test and post-test β=-.49, p<.01, pre-test and follow-up1 β=-.44, p<.05, and between pre-test and follow-up2 β=-.34, p<.05. At the 75th percentile of negative affect levels, there are no significant time differences. In other words, TO is more effective in reducing short and long-term temper loss levels when the level of negative affect is not higher than the 50th percentile.

Non-supportive ESP

The fixed effect omnibus test shows a non-significant effect for group, a significant effect for time ($F_{(3,170.7)}$=11.337, p<.001) and a significant effect for non-supportive EBP ($F_{(1,220.4)}$=8.536, p=.004). No interaction effect was identified for group and time, time and non-supportive ESP, and group and non-supportive ESP. The interaction for group, time and non-supportive ESP was significant ($F_{(3,178.6)}$=3.30, p<.05) indicating significant differences between groups in improving children's temper loss based on the levels of non-supportive ESP. The fixed effects parameter estimates show significant differences between pre-test and all three time-points; specifically, for time 1 (differences between pre- and post-test) β=-.51, p<.001, time 2 (differences between pre-test and follow-up1) β=-.61, p<.001, and time 3 (differences between pre-test and follow-up2) β=-.51,

p<.001, indicating significant modification of temper loss between pre-test and all three following assessments. Significant differences have been identified between the two groups as a function of non-supportive ESP levels at pre-post test, β=1.04, p=.015, as well as at pre-follow-up1, β=1.29, p=.005, but not at pre-follow-up2. This indicates that there is a significant short and medium-term modification in temper loss levels based on parents' non-supportive ESP.

The simple effects of group show that at post-test, there are significant differences between the two interventions for the 25th percentile of non-supportive ESP β=-.68, p=.010 and at the 50th percentile β=-.55, p=.016. The analysis of the result plots for the 25th and 50th percentile of non-supportive ESP shows that there is a significant difference in decreasing temper loss levels between the two interventions (TO registering lower scores) **(Figure 6).**

Post-hoc analysis: Regarding the simple effects of time show that within the TI group, at the 25th percentile of non-supportive ESP, there are significant differences between pre-test and follow-up1 (β=-.52, p=.010) and follow-up2 (β=-.52, p=.006). At the 50th percentile of non-supportive ESP, there are significant differences between all three points of assessment and pre-test (post: β=-.40, p=.014; follow-up1: β=-.66, p<.01; follow-up2: β=-.58, p<.01). At the 75th percentile the results are similar indicating significant differences in temper loss between pre-test all three time points (post: β=-.57, p=.007; follow-up1: β=-.81, p<.001; follow-up2: β=-.65, p=.001). All in all, from the time standpoints within TI intervention, the results show that TI is effective in reducing children's temper loss levels (short and long-term) regardless of percentiles of non-supportive ESP.

Regarding the simple effects of time show that within the TO group, at the 25th percentile of non-supportive ESP, there are significant improvements between pre-test and all three time points (pre: β=-.86, p<.001; follow-up1: β=-.94, p<.001; follow-up2 β=-.65, p<.05). Similarly, at the 50th percentile of non-supportive ESP there are significant improvements between pre-test and all three time points (post: β=-.64, p<.001; follow-up1: β=-.61, p=.001; follow-up2: β=-.46, p=.016). In contrast, at the 75th percentile of non-supportive ESP, there are significant improvements only between pre-test and post-test, β=-.40, p=.026, while between pre-test and follow-up1 & 2 there are no significant time differences. This means that TO is effective in reducing children's temper loss mostly when parents experience low to moderate levels of non-supportive ESP.

Supportive ESP

The fixed effect omnibus test shows a non-significant effect for group, a significant effect for time ($F_{(3,170.5)}$=10.654,p<.001) and a non-significant effect for supportive ESP. No interaction effect was identified for group and time, time and supportive ESP, and group and supportive ESP. The interaction for group, time and supportive ESP was significant ($F_{(3,185.5)}$=5.28, p=.002) indicating significant differences between groups in improving children's temper loss based on the levels of supportive ESP. The fixed effects parameter estimates show significant differences between pre-test and all following time-points; precisely, for time 1 (differences between pre- and post-test) β=-.51, p<.001, time 2 (differences between pre-test and follow-up1) β=-.57, p<.001, and time 3 (differences between pre-test and follow-up2) β=-.49, p<.001, indicating significant modification of temper loss between pre-test and all three assessments. Also, significant differences have been identified between the two groups as a function of supportive ESP levels at pre-post test, β=-0.82, p=.008, at pre-follow-up1, β=-0.94, p=.001, but not at pre-follow-up2. This indicates that there is a significant short and medium-term changes in temper loss levels based on parents' supportive ESP.

The simple effects of group show that at post-test, there are significant differences between the two interventions for the 50th percentile of supportive ESP β=-.50, p<.05 and at the 75th percentile β=-.61, p<.05. The analysis of the result plots for the 50th and 75th percentile of supportive ESP shows that there is a significant difference in decreasing temper loss levels between the two interventions, with the TO group registering significantly lower levels of child temper loss. **(Figure 6).**

Post-hoc analysis: Regarding the simple effects of time show that within the TI group, at the 25th percentile of supportive ESP, there are significant differences between pre-test and all three

following points (post: β=-.58, p=.001; follow-up1: β=-.75, p<.01; follow-up2: β=-.59, p<.01). Likewise, at the 50th percentile of supportive ESP, there are significant differences between all three points of assessment and pre-test (post: β=-.36, p=.027; follow-up1: β=-.55, p=.002; follow-up2: β=-.59, p<.01). At the 75th percentile the differences are significantly only between pre-test and follow-up1 (β=-.41, p=.049) and follow-up2 (β=-.60, p=.002) while for pre-post differences there are no significant differences. Thus, the results indicate that TI is effective in reducing children's temper loss levels mostly when parents' levels of supportive of ESP are in low to moderate levels, and, in the medium and long run, effective at higher levels as well.

Regarding the simple effects of time show that within the TO group, at the 25th percentile of supportive ESP, there are significant improvements only between pre- and post-test (β=-.43, p=.030) and not for the rest of the time points. At the 50th percentile of supportive ESP there are significant improvements between pre-test and all three time points (post: β=-.67, p<.01; follow-up1: β=-.65, p<.01; follow-up2: β=-.43, p=.022). The same results were found for 75th percentile of supportive ESP; there are significant improvements between pre-test and all-time assessments (post: β=-.83, p<.01; follow-up1: β=-.85, p<.01; follow-up2: β=-.47, p=.035). This means that TO is effective in reducing children's temper loss when parents experience moderate to high levels of supportive ESP, whereas in the case of low levels of supportive ESP (25th percentile) TO is effective on the short run, for the pre-post difference in child temper loss.

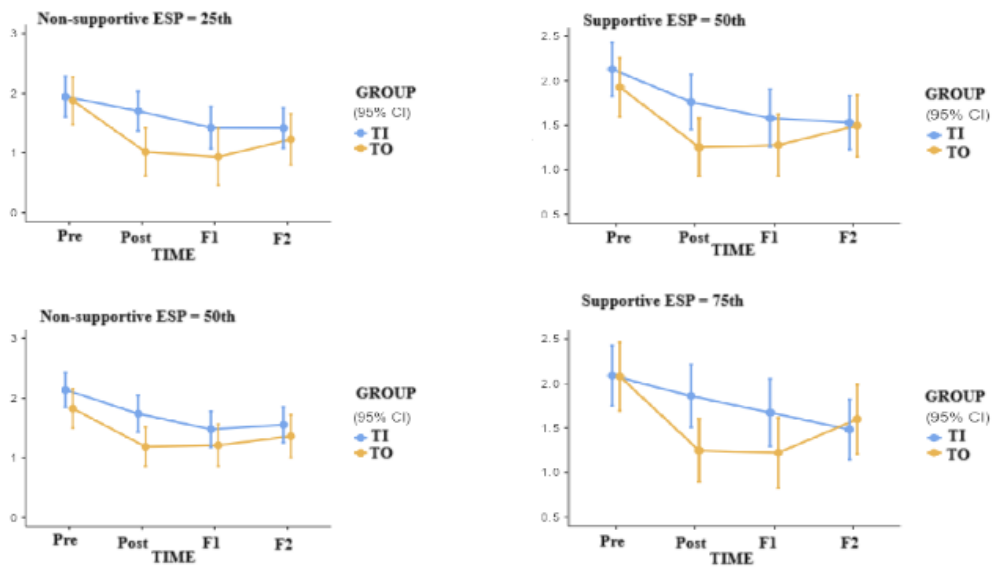


Figure 6. Profile plots of pre-post-F1-F2 differences of temper loss based on the sample of parents with 50th and 75th percentile of supportive and parents with 25th and 50th percentile non-supportive ESP

Note: F1/F2 = Follow-up1/2

Discussion

The current study is the first to examine the efficacy of TO and TI techniques in reducing children's noncompliance and/or temper loss behaviors, and children's mental health problems in long-term. Overall, our results indicate significant improvements for both groups in the short and long run on temper loss and externalization problems. We found no significant intervention differences on children's noncompliance, temper loss episodes and externalization problems, in short and long-term, both interventions acting similarly. Both noncompliance and temper loss showed significant improvements with different trends of progress. While for the TI group the noncompliance continued to decrease, for the TO group, the decrease stops at follow-up1 followed by maintenance. For temper loss, the data revealed an initial decrease followed by an increase in both groups, but not higher than initial levels. Also, our results indicated that improvements in temper loss occur sooner

in the TO group. Moreover, the differences regarding their evolution might require different strategies, more suitable for temper loss respectively for noncompliance (Larzelere et al., 2018). Also, it was observed that mothers used relational strategies and less confrontative/control strategies when handling extreme nonconforming behaviors (Robson & Kuczynski, 2018). Considering the children's mental health outcome, our results reveal that there are no negative changes in terms of mental health difficulties for children both in the short and long-term, and no significant differences between the interventions, consistently with other work (Xu et al., 2024). Regarding the effect of the moderators tested, only children's negative affect and ESP, had significant overall effect of group in interaction for temper loss, meaning that there are significant between the groups in reducing children's temper loss, based on the levels of moderators identified. Specifically, when children's negative affect is moderate there are higher levels of children's temper loss improvements in the TO intervention on short-term. When the level of supportive ESP is moderate-high, respectively, non-supportive ESP is low-moderate, there are higher levels of temper loss improvements in the TO intervention on short-medium term. However, insights arise by exploring the effect of time within both interventions on temper loss based on the levels of each moderator tested.

Regarding practical implications, the results offer directions for implementing parenting interventions based on parent-child factors, creating a potentially parenting profile with the most probable positive outcome and considering the fastest changes. To illustrate, when implementing TO, with a parent who has low-moderate stress level and non-supportive ESP, whose child negative affect level is low-moderate faster changes can occur or implementing TI regardless of the child's temperament and parents' stress and ESP but expecting slower changes. Among limitations, this study compared two intervention groups without a wait-list control group which would have allowed us to establish the magnitude of improvements. Secondly, our data are highly based on mother's self-report, which contribute to limited generalization. Also, this was a study entirely online, which might be a difficult aspect for some parents who would have needed face to face advice and support. Future research can focus on restoring the perceived effectiveness, acceptability and acceptance of TO (Canning et al., 2023) and combining these two techniques for greater effects while considering updated alternatives and using a tool for measuring the adequate procedural implementation of the techniques (McLean et al., 2023). Secondly, integrating technology in parental intervention could enhance effectiveness (e.g., Entenberg et al., 2023; Hodson et al., 2024

Conclusions

In conclusion, current findings respond to relevant and up-to date gaps in parenting empirical knowledge regarding the efficacy of TI and TO parental practices in managing children's noncompliant behaviors and also offer practical insights regarding the factors that contribute to the effective use of the strategies.

CHAPTER IV: GENERAL CONCLUSIONS AND IMPLICATIONS

1. Overview of the main findings of the present thesis

Study 1 is represented by the systematic analysis of the association between long-term children's mental health and parental practices as responses to children's noncompliance. This investigation classified three levels of parental control and offers the aggregated effect sizes of the longitudinal

studies, based on correlational data. The results showed an approaching moderate and significant effect size between negative control and children's psychopathology, a positive association but not significant effect between positive control and children's psychopathology. For responsiveness the results showed a significant but very low magnitude effect on children's psychopathology. Only child's gender was found a significant moderator between negative control and child psychopathology, but the coefficient was negligible. Study 1 could also offer the effect size of the concurrent associations between parental control and children's outcome. We found that the relationship between negative control and children's psychopathology is statistically significant. For responsiveness and positive control, the associations with children's psychopathology were not statistically significant, indicating however a particular direction. Therefore, this study emphasizes the impact of subtle indicators that might differentiate parental control toward children with focus of when this imbalance may become detrimental to their development.

Study 2 contribute to scientific perspective, since few research focused on parental emotional self-regulatory within the framework of the cognitive-behavioral approach (via the mediators examined: 1-irrational parental beliefs regarding child noncompliance, 2-parental emotion-regulation strategies, and 3-parental distress) especially when the role of parents' emotion regulation is intense emphasized. From practical perspective, the study allows to develop better parental interventions focusing on parental strategies and also on parental emotional needs, especially when parents need to deal with children's misbehavior.

Study 3 contribute to methodological and parenting perspectives. Study 3 focused on an intensive longitudinal design which offer unique opportunity to examine dynamics on a micro level (within-subject process) perspective of the families in which parents deal with disruptive behaviors to a better understanding of effective parental practices in managing these behaviors. This methodological approach is recommended in the children externalizing psychopathology spectrum. From the parenting field point of view this study provide the parental perspective on children's noncompliance management. Both approaches contributed therefore, to the comprehension about the occurrences of these episodes. In other words, the results of the study provided a list of practices perceived as effective by parents in managing different types of noncompliance and also, parental responses to temper tantrums. Moreover, the globally parenting (e.g., parenting style) seems to predict the occurrence of noncompliant or tantrums episodes. Moreover, a series of sex-differences were identified in relation between predictors and the occurrence of noncompliant or tantrums episodes, but not parenting hassles nor parental nurturance.

Study 4 contribute the scientific perspective of two parental popular and controversial techniques as management for children's noncompliance, thus bringing significant information from an evidence-based approach which is essential. The results within this study addressed the short and long-term relation between parental practices and children's mental health, responding to lately worries about potential negative effects of the time-out and time-in on children. Shortly, the results showed that both parental interventions acted similarly, with improved levels of noncompliance and temper loss on children, in short and long-term, as well as for levels of children's problems. Moreover, the study offers valuable information regarding the child and parent traits that further can provide practitioners the potential of personalizing intervention for better results in terms of efficacy. Also, this study was entirely online implemented which give the opportunity for easier and more friendly development of parental interventions given the accessibility in technology.

2. **Implications of the thesis**

2.1 Theoretical implications

Study 1 provide a classification between parental control (negative control, positive control and responsiveness) given that when parents address children's noncompliance implicitly, they exert a form of control, in order to facilitate a more comprehensive and coherence understanding of the parental impact on children in the long-term. Within Study 1, a warning is also issued with regard to the need of a more integrated perspective regarding parenting practices as responses to children's

misbehavior. Study 2 has valuable theoretical implications in terms of integrating into parenting perspectives a parental emotion regulation process within the framework of the cognitive-behavioral conceptualization. Study 3 brings fine theoretical implications. Particularly, specific parental practices must be seen in the general context or climate, as a practice, can be good or bad, based on the circumstances in which they are implemented. Study 4 conceptualized the time-in technique within the emotion coaching/or emotion socialization perspective and compared it with the time-out technique for the first time its efficacy, which represents the foundation for future research. At the same time, the study offers a protocol guideline for time-in technique. In addition, the study offers a more integrated and potentially personalized perspective for practitioners when working with parents via the significant moderators found.

2.2 Methodological implications

In terms of methodological advances, the current thesis reveals several aspects. From Study 1, the main implications refer to the longitudinal association based on the Person coefficient. By the nature of the included studies in the analysis (their designs) we also investigated the concurrent associations between parenting and children's problems, thus, offering 2 main analyses into one (regarding the association of short and long-term). Moving beyond the correlational design, on which Study 2 was based, this study investigated three mediators in order to encompass the emotion regulation process in relation to two parental harsh and inconsistent practices and children's externalizing problems. The main implications are related to the use of the multiple path analysis to test 3 mediators. Study 3 provided an innovative methodology, incorporating the daily diary method within the intensive longitudinal design. Additionally, as a particular method, we approach specific parenting behaviors to allows to make finer discrimination between behaviors and prevent incorrect inferences. At the same time, this study combines two types of data, specifically, (1) a set of data provided from daily assessments and (2) a set of data assessed one time (the trait variables), allowing us to make between and within-approach analyses. Study 4 provided an entirely online intervention design, with 4 moments of assessments on a period of one year. The main contribution on it represents the protocol adapted in a format for online use. The data provided allowed us to analyse both between interventions and within interventions for more insightful conclusions.

2.3 Practical implications

Study 1 offers the practitioners in the domain a more generally overview, which give them implicitly, a guidance in terms of what they have to avoid in parental recommendations, and on what content should be very critical and appealing to clinical judgment (e.g., positive control and responsiveness). Specifically, practitioners need to determine which or when positive control strategies may be detrimental to children, taking into account the interactions between parental strategies employed in each particular case (e.g., clinical vs. nonclinical status of the children). Further, along with parental strategies improvements that practitioners' commonly target in parental interventions, practitioners can work with a mechanism of change-based model, a theoretical and practical tool (Study 2). Specifically, focusing on the parent's process of emotion regulation with relevance for both parental practices and children's externalizing problems. This is more relevant since parents can have barriers in implementing the parental recommendations they were provided with (they know what they should do, but they implement it poorly. Thus, by meeting additional criteria for successful intervention, practitioners can enhance their strategies and efficacy when working with parents. Study 3 offers practitioners a model of ecological tool, diary method in a simple, free and user-friendly manner for parents, in order to analyse the child-parent specific dynamics (offering the possibility of creating a pattern). Thus, offering a more ecological perspective when working with families increases the capacity of responding better to the family's needs. Moreover, the results of the study provide parenting global constructs (e.g., parenting styles, parental tendency to respond to emotions, praising and so on) to be assessed in relevance with increased occurrences of noncompliance and temper tantrums. Study 4 offers practitioners the opportunity to adopt a more evidence-based position when considering TI/TO techniques and practical guideline

based on parent-child factors for implementing best parenting interventions to develop a potentially parenting profile with the most probable and fastest for obtaining positive changes.

3. Limitations & future directions

Study 1 is based on a small number of studies which impacted the further analysis (such as, moderator analysis was not able to be conducted for some of the parental categories due to small number of studies, or medium to high heterogeneity regarding the studies). Therefore, the readers are encouraged to engage in critical thinking and interpret the results with caution, and might be seen as preliminary (the overall effect sizes is at risk to be unstable). Secondly, the clinical vs. nonclinical vs. subclinical status of the sample need to be addressed, as in our studies we referred to nonclinical and subclinical. Therefore, the results cannot be generalized given that is already known that the clinical improvements in clinical-referred children are higher. Likewise, each implemented study (Study 2, 3, and 4) was based on parental self-reports. Despite the psychometric quality of most parental questionnaires, the self-report can be easily biased; in Study 3, we lowered the risk of bias in parents, by its design. In a more particular approach, the data from Study 3 were characterized by a high level of heterogeneity, which implied the need for a larger sample size. Study 4 has several limitations: lacks a control group to be compared and also, the sample size was small.

Future directions in research

Firstly, for finer conclusions future research addressing parenting practices might need to differentiate between the concepts and implicitly the associated instruments, such as a specific vs. global parenting characteristics. In this manner parenting field may reach to a gold standard and internationally accepted definition in theoretical and measurement framework in order to provide consistent conclusions. Further, there is still a need for a more integrated perspective (such as layer by layer, in children's development) since there are a series of child-parent factors implicated in the child development and since there is an apparently contradicting parental theoretical perspectives. Another focus should be on the attempt to determine under which conditions (e.g., ratio) positive control strategies or responsiveness are detrimental for children. Also, for addressing the speed character of the improvement in children's noncompliance and temper tantrums, rapid or slower/gradual in the relation between parental strategies related and considering the long-term of children's mental health, more studies with longitudinal data and combinations of designs are needed. Further in this idea, future studies need to create parenting profiles incorporating softly parent-child relevant factors for various levels of noncompliance allow creating a map of parental strategies for managing noncompliance and their evolution in a more widely view. Moreover, since there is high focus on integrating technology in parental interventions, there still needs to be investigated the parental preferences, by profiling the parents who prefer media-based or face-to-face formats, and implicit gain more along with their preferences.

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