Predictors of Media Emotion Regulation and Its Consequences for Children's Socioemotional Development

Medya Aracılığıyla Duygu Düzenlemenin Yordayıcıları ve Çocuğun Sosyoduygusal Gelişimi Açısından Sonuçları

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ABSTRACT

Media emotion regulation has been defined as parents' use of media to regulate their children's emotions in early childhood. The purpose of this review is to investigate the predictors of media emotion regulation and its consequences on children's socioemotional development. As predictors of media emotion regulation, parental education level, parental media use, and the child's temperament were examined. It was observed that parents with low levels of education and higher personal media use more frequently offer their children media emotion regulation than other parents. The relationships between children's temperamental domains of negative affect and extraversion/surgency and media emotion regulation have been shown as positive, while the relationship between effortful control and media emotion regulation has been displayed as negative. As for the consequences of media emotion regulation on children's socioemotional development, children's problematic media use, emotional knowledge, and empathy were examined. The relationship between media emotion regulation and problematic media use was displayed as positive; children who frequently experienced media emotion regulation had increased problematic media use. Also, it was shown that media emotion regulation has a negative role in children's emotional knowledge. As children's experience with media emotion regulation increased, their emotional knowledge decreased. Lastly, in the relationship between media emotion regulation and empathy, both positive and negative findings were observed and variables that may influence this relationship were discussed. This study contributes significantly to understanding the conditions under which children more frequently experience media emotion regulation and the role of this experience on children's socioemotional development

Keywords: media, emotion regulation, early childhood, parent, temperament

ÖZ

Medya aracılığıyla duygu düzenleme, ebeveynlerin erken çocukluk dönemindeki çocuklarının duygularını düzenlemesinde medya kullanması olarak tanımlanmıştır. Bu derlemenin amacı, medya aracılığıyla duygu düzenlemenin yordayıcılarını ve çocukların sosyoduygusal gelişimiyle ilgili olan sonuçlarını incelemektir. Medya aracılığıyla duygu düzenlemenin yordayıcıları olarak ebeveyn eğitim seviyesi, ebeveyn medya kullanımı ve çocuğun mizacı incelenmiştir. Düşük eğitim seviyesine sahip ve kişisel medya kullanımı yüksek olan ebeveynlerin, diğer ebeveynlere kıyasla medya aracılığıyla duygu düzenlemeye daha sık başvurduğu görülmüştür. Çocukların olumsuz duygulanım veya dışadönüklük/coşkunluk mizacı ile medya aracılığıyla duygu düzenleme arasında olumlu; çabalı kontrol ile medya aracılığıyla duygu düzenleme arasında olumsuz bir ilişki görülmüştür. Medya aracılığıyla duygu düzenlemenin çocukların sosyoduygusal gelişimi üzerindeki sonuçları olarak çocuğun problemli medya kullanımı, duygusal bilgi ile empatisi incelenmiştir. Medya aracılığıyla duygu düzenleme ve problemli medya kullanımı arasında olumlu bir ilişki olduğu görülmüştür; medya aracılığıyla duygu düzenlemeyi sıklıkla deneyimleyen çocukların problemli medya kullanımı artmaktadır. Ayrıca medya aracılığıyla duygu düzenlemenin çocukların duygusal bilgisinde olumsuz bir rolü olduğu belirlenmiştir. Çocukların medya aracılığıyla duygu düzenleme deneyimi arttıkça duygusal bilgisi azalmaktadır. Son olarak, medya aracılığıyla duygu düzenleme ile empati arasındaki ilişkide hem olumlu hem olumsuz sonuçlar gözlemlenmiş ve bu ilişkiyi etkileyebilecek değişkenler tartışılmıştır. Bu çalışma, çocukların medya aracılığıyla duygu düzenlemeyi hangi koşullarda daha sık deneyimlediğini ve bu deneyimin çocukların sosyoduygusal gelişimindeki rolünü anlamak açısından önemli bir katkı sunmaktadır.

Anahtar sözcükler: Medya, duygu düzenleme, erken çocukluk, ebeveyn, mizaç

Introduction

Nowadays, with the rapid advancement of technology, media use has become an indispensable part of children's daily lives (Olafsson et al. 2014, Kabali et al. 2015, Bohnert and Gracia 2021). Specifically, parents commonly use digital media tools such as smartphones or tablets to soothe their young children's negative emotional states, such as restlessness and boredom. Parents believe that providing media devices to their children in settings such as restaurants, cafes, or homes makes it easier for them to continue their activities and maintain social interactions (Kim et al. 2013, Seo 2017). Also, parents consider media use as a means to help their children transition to a calmer emotional state (Nikken and Schols 2015, Hiniker et al. 2016). This parenting method is defined as media emotion regulation in the literature, but for clarity in the Turkish text, it will be referred to as emotion regulation through media (medya aracılığıyla duygu düzenleme). Media emotion regulation has gained attention in recent academic studies regarding early childhood (Coyne et al. 2021, 2022, 2023). These studies have explored various predictors of media emotion regulation and the relationship between media emotion regulation and children's socioemotional outcomes. Media emotion regulation may have a negative role in children's emotion regulation skills, limiting their socioemotional development, so it has emerged as a significant concept in developmental psychology. Considering the importance of this topic, it has been deemed that summarizing the findings of studies in this field would be beneficial.

This review article aims to summarize the studies focusing on the predictors of media emotion regulation and its consequences on children's socioemotional development. For this purpose, the increase in media use during early childhood and the role of parents in this context are first discussed. Subsequent sections introduce media emotion regulation and mention its predictors, such as parental education level, media use, and children's temperament. In addition, outcome variables related to socioemotional development, including children's problematic media use, emotional knowledge, and empathy are explored. The findings are summarized in the discussion section, and the research's limitations on media emotion regulation are discussed.

Media Use in Early Childhood

In today's world, where media use has become integral to daily life, experts recommend different use durations considering children's developmental stages. Recommendations include avoiding media use in the first 18 months (Council on Communications and Media 2016) or 36 months (Yeşilay 2017). For children aged three to six, it is suggested that media use should be limited to 30 to 60 minutes (Tremblay et al. 2012, Yeşilay 2017).

Numerous studies indicate that children exceed the recommended durations for media use. In the first two years of life, children start being exposed to media (Christakis 2014) and spend an average of one hour daily using media (Rideout 2017). Despite the recommended 30-minute limit, children between the ages of three and six use digital media tools for one to three hours daily (Radesky et al. 2020, Uzundağ et al. 2022).

Research shows that media use over the recommended time has a negative role in children's development. Prolonged media use is positively associated with internalizing problems such as anxiety and depression and externalizing problems such as aggression and rule-breaking behaviors (Lin et al., 2020). Furthermore, extended media use has a negative relationship with socioemotional development outcomes, including self-regulation, autonomy, social communication, and emotional competence (Radesky et al. 2014a, Gou and Perceval 2022).

On the other hand, there are also studies indicating a positive role of media use in children's development. For instance, in a study conducted with children aged four to six, children who watched educational media displayed better prosocial behavior and self-regulation performance than their peers (Canaslan and Sungur 2022). Also, in studies conducted over three to six years olds, media use that requires social engagement and interaction and provides instructional information has been related to increased empathy, self-efficacy, emotion recognition, and emotion expression skills among children (Rasmussen et al. 2016, Koivula et al. 2017). In summary, while most studies highlight the negative role of media in children's development, there are contradictory findings in the literature.

Studies pointing out increased media use and its negative role on children's development have prompted parents to establish rules and routines for media use for their children from early childhood (Padilla-Walker et al. 2012, Coyne et al. 2017). Early childhood is when children's self-control development continues (Duckworth and Steinberg 2015), so children need parental guidance in media use. Therefore, parents play an active role in managing their children's media use during this period (Nikken and Jansz 2006). Parents can manage the process by actively engaging in screen time or restricting media use. In the context defined as active screen time, parents can contribute to the process by sharing media use with their children and communicating directly or

indirectly about the content being watched (Gentile et al. 2014, Sweetser et al. 2014). Parents can also manage the process by limiting their child's media use through established rules. Research has shown that both methods can reduce or even prevent the negative role of media on children's development (Blum-Ross and Livingstone 2016, Wu et al. 2023).

To sum up, nowadays, children use media frequently and more than the recommended time. The most crucial role in managing this use falls on parents. Despite contradictory findings, most studies suggest that prolonged media use has various negative roles on children's development. This relationship is particularly evident for children who use media alone or for regulating negative emotions (Levine et al. 2019). This concept, named "media emotion regulation", is crucial for understanding the role of media in young children's development.

Media Emotion Regulation

Emotion regulation encompasses all "processes used to manage and change if, when, and how (e.g., how intensely) one experiences emotions and emotion-related motivational and physiological states, as well as how emotions are expressed behaviorally" (Eisenberg et al. 2007, p. 288). Emotion regulation skills, which are crucial in children's development, are influenced by media tools today.

Media use involves a process that hinders children from seeking support from their parents when they need emotional regulation (McDaniel and Radesky 2018). Parents often provide various media tools to their children, especially to soothe their negative emotions (Wartella et al. 2013, Seo, 2017). This situation makes children more dependent on these devices to regulate their emotions and less confident in their internal processes (Coyne et al. 2021). Based on this observation, the term "media emotion regulation", a topic that has recently attracted attention in the literature, has been developed.

Media emotion regulation refers to using media to cope with emotional challenges (Radesky et al. 2016c). For example, a child has a tantrum in a public place like a supermarket or restaurant. If the parent gives the child a device such as a smartphone or tablet to watch a video to help them calm down, this is a practice of media emotion regulation since the parent is turning to a media tool to help the child calm down. It is observed that children switch to a more positive emotional state when they start using media (Nikken and Schols 2015, Hiniker et al. 2016). Therefore, parents use this method to change their children's emotional state quickly.

When explaining the concept of media emotion regulation, it is essential to distinguish this concept from using media solely to entertain the child. Media emotion regulation involves parents using media to meet the emotional needs of their children (Radesky et al. 2016c); it is a strategy to help the child calm down and address negative emotional states. On the other hand, using media to entertain children implies parents offering media devices to children either to avoid children seeking attention from them or to allocate time for themselves. For instance, parents may suggest media use to keep children occupied, distract their attention, or take a temporary break from parenting duties (Kabali et al. 2015, Nikken 2019, Eales et al. 2021). Similarly, parents may provide media devices to their children when they are tired, busy, or in a public place (Kim et al. 2013, Seo 2017). In such cases, the goal is to engage children with media. Consequently, while media emotion regulation involves using media to respond to children's emotional needs, using media to entertain children signifies keeping children occupied or providing media devices for parents to have some personal time. Understanding this distinction is crucial for explaining the role of media use on children's emotional needs and development.

In measuring media emotion regulation, studies have been observed to get assessments from parents using two different surveys. One of these surveys is the Reasons for Media Use, and one of the items is that "I let my child use media on this occasion to calm them down because they were upset" (Radesky et al. 2016). The other survey is the seven-item Media Emotion Regulation Scale, developed by Coyne et al. (2021), explicitly assessing media emotion regulation. This scale, which has demonstrated sufficient reliability across various studies, includes items such as "How often do you pass your child your phone or other media device when your child gets fussy while driving somewhere in the car? (Coyne et al. 2021, 2023).

Media emotion regulation is a relatively new concept in the literature, and studies on this topic are still limited. Although few, these studies have predominantly focused on early childhood. In early childhood, the development of children's emotion regulation skills continuous, and children rely on their parents for emotion regulation (Vohs and Baumeister 2004). During this period, parental emotion socialization plays a critical role in children's emotional competence and, consequently, in the strategy of media emotion regulation.

Parental emotion socialization is one of the most fundamental factors contributing to children's understanding and regulation of emotions (Eisenberg et al. 1998). Parental emotion socialization refers to modeling emotional

expression and regulation, how parents react to their children's emotions, emotional discussions, and how they coach and teach children about emotions (Gottman et al. 1997, Eisenberg et al. 1998). Emotion coaching refers to positive and supportive emotion socialization. Parents employing emotion coaching value emotional events as opportunities for closeness and teaching, accepting emotions, and so they encourage children to express their feelings (Gottman et al. 1996). Furthermore, these parents assist children in resolving issues causing negative emotions, support self-soothing, or redirect attention from stressful stimuli (Gottman et al. 1996, Fabes et al. 2002). Children raised by parents who encourage expressing emotions and discussing emotional experiences exhibit advanced skills in emotion understanding and regulation (Eisenberg et al. 1998).

Contrastingly, emotion dismissive approach represents a negative and unsupportive emotional socialization strategy. Parents adopting this approach perceive negative emotions as insignificant and hinder children's emotional exploration (Gottman et al. 1996, 1997). Additionally, this approach includes discouraging children from expressing emotions, imposing punishments for displaying negative emotions to limit their emotional expressions, and responding to children's negative feelings with stress or impatience (Fabes et al. 2002). Such behaviors convey that negative emotions are unacceptable and should not be discussed (Gentzler et al. 2005). Children who learn that emotions should not be experienced and expressed struggle with understanding, expressing, and regulating emotions (Root and Rubin 2010, Klein et al. 2018).

In summary, emotion coaching in early childhood emerges as a valuable skill for parents of young children who need assistance soothing and regulating emotions during stressful situations (Gottman and DeClaire 1997). However, for parents to effectively help their children regulate emotions, they should be in a regulated emotional state where they can coach their child's emotions (Rutherford et al. 2015, Zimmer-Gembeck et al. 2022). Yet, considering the stress of the parenting role and the responsibilities of daily life, parents may not be in an emotional state to provide emotional coaching whenever their children need emotion regulation. In such situations, parents may ignore their children's emotions, experience negative emotions themselves in the face of challenging emotions, and regularly use media to manage the situation (Coyne et al. 2021). When used as a parenting strategy, media emotion regulation is observed to be rewarding for parents as it provides an opportunity to take a break from parenting responsibilities (Seo 2017). Given the ease of access to media in our daily lives, media emotion regulation is a method frequently employed by parents (Seo 2017). Also, children's experiences of media emotion regulation show stability over time (Coyne et al. 2023). In other words, for children who experience media emotion regulation, this becomes a repeated behavioral pattern in their daily lives.

Media emotion regulation is negatively associated with children's socioemotional development (e.g., Coyne et al. 2022, 2023). When parents use media such as videos to cope with or resolve difficult emotions, it hinders the children's ability to learn positive emotion regulation strategies (Gordon-Hacker and Gueron-Sela 2020). Children exposed to more media are more likely to use media when they need to regulate their emotions, resulting in limited opportunities for emotion regulation compared to their peers (Radesky et al. 2014b). Moreover, when children start using media to cope with difficult emotions, they struggle to disengage from the device (Coyne et al. 2022). In such situations, intense negative emotional reactions are observed when media is taken away from the children (Coyne et al. 2021). Additionally, children who tend to use media to cope with emotional difficulties struggle to calm themselves when excited and experience intense negative emotions (e.g., anger outbursts) when they cannot use media (Twenge and Campbell 2018, Domoff et al. 2020). Therefore, it is observed that media emotion regulation has a negative relationship with children's emotion regulation and, consequently, socioemotional development.

There are studies indicating that media tends to be presented more frequently to young children with problems in socioemotional development (Radesky et al. 2016a). For instance, parents often provide media options such as playing online games or watching animations to children with externalizing problems like aggression and rule-breaking to calm them (Nikken and Schols 2015). Similarly, young children struggling with self-regulation are offered more media use (Levine et al. 2019).

In summary, media emotion regulation, studied in the literature for the last few years, has focused on early childhood when children need parental support for emotion regulation. Considering the critical role of parents in children's emotional development during this period, negative emotion socialization strategies, such as the emotion dismissive approach, including media emotion regulation, are negatively related to children's socioemotional development. Studies show that children who experience media emotion regulation face difficulties in emotion regulation and that providing more opportunities for media emotion regulation to overcome these difficulties creates a negative cycle in children's emotional development. Given the stronger role

of media use on children's socioemotional development in the early years compared to later ages (Liu et al. 2015), it becomes crucial to investigate the developmental role of media emotion regulation in early childhood.

However, in the literature, the role of parents' use of media emotion regulation strategies on children's socioemotional development such as problematic media use, emotion knowledge, and empathy has not been examined. With the everyday accessibility of digital technologies today, parents with young children are more likely to use media as a parenting tool for emotion regulation in early childhood. Therefore, understanding the relationship between predictive and outcome factors in media emotion regulation is very important. In this context, the current review has examined parent and child-related predictors and outcomes in media emotion regulation during early childhood. Predictors such as parental education level, parental media use, and children's temperament are examined, along with consequences such as problematic media use, emotional knowledge, and empathy. As the role and process of these factors in media emotion regulation become more precise, it is considered that important insights will be obtained for designing and implementing effective intervention programs to reduce the negative role of media emotion regulation on children's development.

Predictors of Media Emotion Regulation

Parental Education Level

As a parenting strategy, media emotion regulation is influenced by various factors. The first predictor of media emotion regulation is the parental education level. According to the Parenting Process Model, parenting is influenced by the characteristics of parents, children, and the social context (Belsky 1984, Taraban and Shaw 2018). In this model, parental characteristics such as personality, gender, developmental history, and child characteristics like temperament, emotion regulation, genetics, and social context factors such as culture, family structure, and marital quality are significant factors influencing parenting. Additionally, socioeconomic status (SES), as a contextual factor, plays a role in influencing parental behaviors by impacting parent, child, and social contextual characteristics (Taraban and Shaw 2018).

Parents' educational level is an indicator of the family's SES and may have an effect on parenting (Hauser and Warren 1997). For instance, parents from low SES often experience high levels of stress, which decreases their well-being (Baum et al. 1999). In this context, depression is more frequently observed in mothers from low SES, and as maternal depression symptoms increase, positive parenting behaviors such as warmth and affection decrease (Lovejoy et al. 2000). In short, the parent's educational level is regarded as one of the socioeconomic indicators and positively associated with positive parenting.

As media emotion regulation is considered a planned parenting behavior and parenting strategy, the parent's educational level may be related to this behavior. Studies focusing on the first five years of life have shown that when the parent's educational level is low, children's media use (McCloskey et al. 2018, Levine et al. 2019) and experiences of media emotion regulation tend to be higher compared to their peers (Coyne et al. 2021). On the other hand, parents with higher educational levels are more likely to use media with educational motivation to support their children's learning (Levine et al. 2019). They also tend to engage with media interactively and in active screen use with their children (Levine et al. 2019). Findings suggest that lower parental educational levels are associated with increased experiences of media emotion regulation in children, supporting the Parenting Process Model.

Parental Media Use

The Parenting Process Model suggests that in addition to SES, parenting characteristics are influenced by the parent's developmental background (Belsky 1984, Taraban and Shaw 2018). The parent's offering media emotion regulation to their children is associated with the parent's developmental background, such as personal media use.

Children who experience challenging emotions in early childhood need support from their parents (Vohs and Baumeister 2004). However, for parents to assist their children, they need to regulate their emotional states first (Rutherford et al. 2015, Zimmer-Gembeck et al. 2022). Therefore, parents should regulate their emotions in response to their children's emotions while fulfilling their parenting duties. However, this process can be challenging for parents (Lunkenheimer et al. 2023). A parent's regulation of their own emotions is shaped by their personal experiences, which indicates that it is closely related to their developmental background. If the parent uses media to regulate their emotions, they may also employ this regulation strategy to their child. Therefore, parents can use media as a tool for regulating both their own and their children's emotions (Radesky

et al. 2016c, McDaniel and Radesky 2018). Therefore, examining the relationship between parental media use and children's experiences of media emotion regulation is crucial.

Studies have demonstrated that a parent's media use is associated with parenting behaviors. Research with parents of children aged zero to five indicates increased parental media use as parenting stress increases (McDaniel and Radesky 2018). When children's emotions and behaviors challenge parents, they tend to use media (McDaniel and Radesky 2018). On days with higher parental media use, children's behaviors have been shown to be more difficult (McDaniel and Radesky 2017, 2018). Another study with parents of children aged one to seventeen found that parents used media for distraction or information-seeking to cope with the stress of parenting (Wolfers 2021). Another similar study points out that parents prefer using their phones to cope with the monotony or stress of parenting (Radesky et al. 2016b). The parent's media use, in turn, influences parenting behaviors. A review study indicates that a parent's phone use is associated with various parenting behaviors, including less verbal communication with the child, lower parental warmth and sensitivity, and more rigid and harsh parenting behaviors (McDaniel 2019).

It is observed that parents who use the media to cope with negative emotions apply this coping strategy to their children in a similar way. To our best knowledge, there is only one study in the literature addressing this issue. Coyne and colleagues (2021) demonstrated in their research with parents of two to three-year-old children that as parents' personal media use increase, children's experiences of media emotion regulation also increase. These findings were shown to align with the Parenting Process Model (Belsky 1984, Taraban and Shaw 2018). Offering media emotion regulation to the child is associated with the parent's developmental history, such as their personal media use. Parents who prefer using media as a passive strategy to regulate their emotions also introduce this coping strategy to their children.

Considering parent-related predictors in media emotion regulation, when parents of young children have a lower level of education, there is an increased likelihood that children frequently experience media emotion regulation. Additionally, parents with lower educational levels or those struggling to cope with parenting stress are more inclined to use media more frequently, which is positively associated with the frequency of children's media emotion regulation. These findings suggest that parent's low level of education and high personal media use may be considered risk factors for media emotion regulation.

Children's Temperament

Temperament refers to relatively stable individual differences a child displays from an early age, encompassing areas such as emotion, activity level, attention, and self-regulation (Rothbart and Bates 2006). Temperament in early childhood consists of three factors: negative affectivity, effortful control, and extraversion/surgency (Rothbart et al. 2001). Studies have shown that children with different temperament characteristics experience varying levels of media emotion regulation.

Among temperament factors, negative affectivity is the most frequently studied about media. Negative affectivity reflects an individual's tendency to respond to stress factors with a high level of emotionality, and consists of anger/frustration, sadness, discomfort, fear, and unsoothability/reactivity (Paulussen-Hoogeboom et al. 2007). In the literature, there are studies indicating that children's negative affectivity positively predicts media emotion regulation. For example, a study with two to three-year-old children found a positive relationship between children's negative affectivity and media emotion regulation (Coyne et al. 2021). A similar result was reported with reactivity, a sub-dimension of negative affect, defined as the degree to which a person reacts physiologically and behaviorally to the environment. This study with children between three and five showed a positive relationship between children's reactivity and media emotion regulation; children with high reactivity experience media emotion regulation more frequently (Coyne et al. 2023).

Children with high levels of negative affectivity experience negative emotions such as anger, frustration, sadness, and fear more frequently than their peers, and they also exhibit intense emotional reactions to these feelings. As emotion is a necessary condition for emotion regulation, the experience of emotions that need to be regulated and individual differences in this emotional arousal (reactivity) are associated with emotion regulation skills. High reactivity, such as intense and unsoothable crying or anger, has been directly linked to emotion regulation difficulties (Stifter and Spinrad 2002). Moreover, high levels of fear reactivity have been associated with poor regulation skills (Hill-Soderlund and Braungart-Rieker 2008). Therefore, it is deduced that children with high negative affectivity need emotion regulation more frequently but have difficulties in regulation. In relation to this, it can be concluded that children with high negative affectivity need emotion regulation more frequently than their peers, and in such cases, parents may offer media emotion regulation to children.

Another temperament factor examined in media emotion regulation is effortful control. Effortful control refers to an individual's ability to use attention and inhibit distracting behavioral stimuli (Rothbart and Bates 2006). It includes sub-dimensions such as attentional focusing, inhibitory control, perceptual sensitivity, and low-intensity pleasure. To our knowledge, there is only one study about effortful control and media emotion regulation. This cross-sectional study of two- to three-year-old children revealed a negative relationship between effortful control and media emotion regulation (Coyne et al. 2021). In other words, children with high effortful control have a low frequency of experiencing media emotion regulation.

Effortful control involves the individual's emotional arousal and attentional processes to regulate emotion, so it plays a vital role in emotion regulation skills (Eisenberg et al. 2011). It has been observed that children with higher effortful control tend to perform better in emotion regulation (Spinrad et al. 2006). Therefore, it can be thought that children with higher effortful control have less difficulty in emotion regulation and, therefore, experience less media emotion regulation.

Another temperament factor, extraversion/surgency, corresponds to the active expression of pleasant or positive emotions, concrete stimulating objects, and social stimuli, aligning with the joy derived from them (Simonds 2006). It includes dimensions such as approach, high-intensity pleasure, smiling/laughter, activity level, impulsivity, and low shyness as the reverse factor. Similar to effortful control, to our knowledge, there is only one study that examines extraversion/surgency and media emotion regulation. In a cross-sectional study involving two to three-year-old children, it was shown that children with higher scores on extraversion/surgency more frequently experienced media emotion regulation (Coyne et al. 2021).

Children with moderate levels of extraversion/surgency are described as extroverted and interested in their surroundings, but children with high levels of extraversion/surgency are characterized as highly active, constantly exploring their environment, disregarding rules and regulations related to their behavior (Berdan et al. 2008). When the desire of children with high levels of extraverted/surgency to explore their surroundings is thwarted, they experience frustration (Rothbart et al. 2000). However, due to their difficulty in regulating their constant desire for exploration and low levels of internalizing rules (Fox et al. 2001), these children employ aggressive strategies to overcome obstacles (Rothbart and Putnam 2002). Children with high levels of extraversion/surgency show difficulties in regulation, such as aggressive and hyperactive behaviors (Berdan et al. 2008). Thus, children with high levels of extraversion/surgency face challenges in regulating their emotions, leading them to more frequently experience media emotion regulation.

In summary, temperament, a significant individual characteristic, plays a crucial role in children's experience of media emotion regulation. Children with negative affectivity or extraversion/surgency temperament experience media emotion regulation more frequently, whereas those with high effortful control experience media emotion regulation less frequently.

Media Emotion Regulation's Consequences on Children's Socioemotional Development

Problematic Media Use

Problematic media use refers to the frequent engagement in media activities that significantly impede an individual's daily functioning in psychological, social, family, and school contexts (Domoff et al. 2020). Problematic media use is characterized by nine features: (a) frequent engagement with media, (b) excessive need for media, (c) using media to escape or reduce a negative mood, (d) decreased interest in activities outside of media, (e) psychological withdrawal symptoms in the absence of media access, (f) lack of control over use, (g) psychosocial consequences linked to use, (h) deceptive behaviors such as hiding use or lying to access media, and (i) serious problems associated with use (Domoff et al. 2019). Experiencing at least five of these symptoms within the last month is considered problematic media use, and problematic media use has a negative role on children's socioemotional development (Domoff et al. 2019).

Theoretically, it is seen that media emotion regulation is associated with problematic media use. As mentioned earlier, media emotion regulation hinders children's ability to learn healthy regulation skills (Radesky et al. 2014b), potentially contributing to the development of problematic media use. When children frequently turn to media use instead of recognizing, experiencing, and regulating challenging emotions, it may be associated with an excessive focus on media. In other words, children repeatedly experiencing media emotion regulation may resort to media use as a coping strategy for handling difficult emotions. Using media as a coping strategy is a distinctive feature of problematic media use.

Children experiencing media emotion regulation have trouble adapting to the end of screen time. When asked to put down the screen, these children often have intense negative reactions such as tantrums, whining, resisting the end of screen time, and they find it difficult to switch to another non-media activity (Hiniker et al. 2016, Domoff et al. 2020, Coyne et al. 2021). In this context, it is observed that children experiencing media emotion regulation show psychological withdrawal symptoms when media access is unavailable. Additionally, these children find it challenging to quit media use (Coyne et al. 2022), corresponding to the lack of control over use, a characteristic of problematic media use. Studies also emphasize that the role of media emotion regulation in children's development is not limited to early childhood. Children who use media as a way to escape difficult emotions have been found to be more likely to develop problematic media use in later years, such as internet gaming disorder (Gentile 2009). Thus, a positive relationship between media emotion regulation and problematic media use is observed.

The predictors mentioned above, such as parental media use and children's temperament, seem to play a role in the relationship between media emotion regulation and problematic media use. Considering parental media use, it was displayed that increased parental media use is associated with increased frequency of children's media emotion regulation, which, in turn, is positively related to children's problematic media use (Domoff et al. 2020, Coyne et al. 2021). Regarding children's temperament, to our knowledge, only the extraversion/surgency dimension has been investigated. In a cross-sectional study with two to three-year-old children, it was shown that children with higher scores in extraversion/surgency experience media emotion regulation more frequently, which is positively associated with problematic media use (Coyne et al. 2021).

In light of this information, a positive relationship between media emotion regulation and problematic media use was observed. Predictors such as parental media use and children's temperament also play a role in this relationship. Children with higher scores in extraversion/surgency or with parents who have higher media use experience media emotion regulation more frequently than their peers and the frequent experience of media emotion regulation is associated with increased problematic media use.

Emotional Knowledge

Emotional knowledge is the ability to recognize emotional expressions and experiences in oneself or others (Dunn 1994). This skill is a crucial component of emotional competence, encompassing the ability to identify, express, and respond to emotions (Denham and Couchoud 1990).

The early components of emotional knowledge emerge during infancy (Ruba and Pollak 2020) and continue to develop throughout childhood (Woodard et al. 2022). In early childhood, children's ability to identify and verbally express different emotions is a crucial indicator of emotional knowledge (Denham and Couchoud, 1990). Emotional knowledge enables children to navigate and control their emotional experiences, interpret and respond to others' emotional expressions, and predict how situations can affect emotions (Seja and Russ 1999). Thus, the recognition and appropriate response to emotions through emotional knowledge lay the foundation for healthy social functioning in early childhood (Denham et al. 2003). The development of emotional knowledge is associated with positive competencies such as empathy and prosocial behaviors (Eggum et al. 2011).

Research indicates that parents play a significant role in fostering their children's emotional knowledge (Fabes et al. 1994, Wong et al. 2021). However, there is limited research on the role of parent's attitudes toward media use in children's emotional knowledge. When parents prefer passive media use, providing media content to their children without engaging in interactive discussions about the triggered emotions, they may miss the opportunity for emotion coaching, which involves discussing emotions (Denham 2019). Children engaged in passive media might not receive sufficient emotion coaching support from their parents, limiting their ability to learn emotional knowledge and emotion regulation. Studies support this suggestion by showing that children with high media use often experience difficulties in emotion regulation skills (Radesky et al. 2014b, Liu et al. 2021). Furthermore, it has been observed that children with poor emotion regulation skills also have problems with emotional knowledge (Schultz et al. 2001, Lucas-Molina et al. 2020). Therefore, it is suggested that frequent experiences of media emotion regulation may be negatively associated with emotional knowledge.

There is a recent longitudinal study in the literature examining the role of media emotion regulation in children's emotional knowledge. This study, involving parents and their children aged three to five, investigates the relationship between parents' media emotion regulation strategies and children's emotional knowledge (Coyne et al. 2023). The study's results indicate that there is only a cross-sectional relationship between parents' media emotion regulation strategies and children's emotional knowledge. Children who more frequently experienced media emotion regulation were observed to have lower emotional knowledge. However, as an intriguing finding,

the results indicated no significant longitudinal or temporal relationship between media emotion regulation and emotional knowledge. Coyne et al. (2023) suggest that the role of media emotion regulation on emotional knowledge may change depending on children's age. In the United States, where the study was conducted, children typically start preschool at three, which may indicate the diminishing role of parents' media emotion regulation strategies on children's emotional knowledge.

In summary, although there is limited research on the topic, initial findings show a negative relationship between media emotion regulation and children's emotional knowledge. Age was regarded as a significant factor in this relationship. However, further research is needed to gain a clearer understanding of the relationship between media emotion regulation and emotional knowledge.

Empathy

Empathy is defined as the capacity to understand and experience simple or complex emotional states observed in another individual (Singer 2006). Although the first empathic behaviors begin to emerge in infancy, they are more pronounced in children around two (Martin and Clark 1982). Empathic behaviors such as attempting to comfort someone, sharing, and helping are observed in early childhood (Zahn-Waxler et al. 1992).

Empathy undergoes significant development in early childhood due to the rapid progress in children's language skills, which are necessary for self-expression, and theory of mind, which helps children understand another's perspective (Eisenberg 2005). Research has shown that parents play a crucial role in fostering empathy during this period. For example, parental displays of love or affection and discussing emotions with their children contribute to the development of children's empathy (Drummond et al. 2014, Spinrad and Gal 2018).

Parents' role in children's empathy development is essential in the media context. Research with children aged five to six has shown that interactive media use with parents (active use) supports empathy development (Suryani et al. 2020). Another study with six-year-olds emphasized the importance of parents' interaction with children during media use, such that children's passive screen time was negatively associated with empathy development (Hu et al. 2018). Therefore, it can be deduced that media-related parenting practices may have a role in empathy during early childhood.

Parents who use media emotion regulation tend to reduce the number of possible interactions with themselves by presenting media to children rather than engaging empathically with their children when emotional situations arise. Parents' behavior may convey to children that sharing feelings is undesirable. Such actions can reinforce the idea that showing emotions is undesirable in the parent-child relationship or the family climate.

There are limited studies scrutinizing the relationship between media emotion regulation and children's empathy. A study conducted over a year with children aged three to five showed that the relationship between media emotion regulation and children's empathy was cross-sectional (Coyne et al. 2023). Children who frequently experienced media emotion regulation were observed to have lower empathy scores than other children. However, it was found that this relationship became positive over time. After controlling for empathy levels at the initial point, a positive relationship was found between media emotion regulation at the initial point and empathy at the second point. In other words, parents' use of media emotion regulation is associated with an increase in children's empathy scores one year later. Researchers, highlighting the positive relationship, thought the media content presented to the child may have features that encourage prosocial behaviors and enhance empathy, thereby influencing the outcomes. The empathy measurement used in the study also included helpful behaviors such as "Tries to make you feel better if you are sad." Parental modeling is critical in the development of prosocial behaviors (Schuhmacher et al. 2019). It is suggested that parents' media emotion regulation strategies may be sensitive responses to children's emotions, facilitating children's internalization of an empathic response to others' distress (Thompson and Newton 2013).

In conclusion, media emotion regulation has a negative role in children's empathy cross-sectionally but a positive role over time. In cases where a positive relationship was observed, it is believed that the media content's ability to encourage prosocial behaviors and enhance empathy, along with children's perception of the parents' media emotion regulation as a sensitive response to their emotions, may be practical. However, further research is needed to delve deeper into the role of media emotion regulation in children's empathy skills.

Discussion

Many children in early childhood use media more than the recommended amount of time and in an easily accessible way (Christakis 2014, Rideout 2017, Radesky et al. 2020, Uzundağ et al. 2022). It is observed that

parents offer media use to children to alleviate negative emotions such as restlessness and boredom, conceptualized as media emotion regulation in the literature.

The current study focuses on the practice of media emotion regulation as a parenting strategy, examining its predictors and consequences on children's socioemotional development. When examining predictors of media emotion regulation, it is noted that parents with lower educational levels or higher personal media use tend to resort to this practice more frequently. Regarding children's temperament, positive relationships are observed between children's temperamental characteristics of negative affectivity and extraversion/surgency and media emotion regulation, while a negative relationship is observed between children's temperamental characteristics of effortful control and media emotion regulation.

Considering the role of media emotion regulation on children's socioemotional development, it is seen that it has a positive relationship with problematic media use. Additionally, a negative role of media emotion regulation in emotional knowledge is reported, with researchers suggesting that children's age might be a significant factor. Finally, findings regarding the relationship between media emotion regulation and empathy show positive and negative relationships; media content and how children perceive media emotion regulation are proposed as important factors.

Numerous studies document that most children exceed the recommended media use durations (Christakis 2014, Rideout 2017, Radesky et al. 2020, Uzundağ et al. 2022). This suggests that children's experiences of media emotion regulation may increase significantly. When the results obtained from the aforementioned studies are considered collectively, it is possible to say that media emotion regulation generally plays a negative role in children's development. Therefore, it is recommended that, in situations where children experience difficult emotions, parents engaging in emotion coaching could be a better alternative than providing media. Emotion coaching refers to parents understanding their children's challenging emotions, encouraging the expression of emotions, and helping children manage their emotional states (Gottman et al. 1996, Fabes et al. 2002). Parental emotion coaching helps the child understand the message their emotions are trying to convey, which increases emotional awareness and improves emotion regulation skills. Thus, children grasp that negative emotions are manageable, emotions can be worked on, and they can even learn from emotional experiences.

For a parent to engage in emotion coaching, their emotional state must be regulated (Rutherford et al. 2015, Zimmer-Gembeck et al. 2022). Today, given the stress and responsibilities of the parenting role, parents may not always be able to provide emotion coaching. Offering toys or short games that capture children's interest instead of giving media can be a good option in such situations. Therefore, it seems a good choice for parents to have a few toys with them. However, offering such games or toys to children may not always be appropriate, and media use may become inevitable in such cases.

When children are exposed to media use, it is crucial for parents to guide their media consumption carefully. This entails monitoring children's screen time, ensuring that the content they watch is age-appropriate, restricting access to inappropriate or potentially harmful content (e.g., violence), and communicating with their children about the content on screens (Madigan et al. 2019). Such an approach can help minimize the negative impacts of media use (see Koç-Arık 2023).

Using media as a coping mechanism has been observed to play a significant role in socioemotional development in early childhood, as well as having a positive relationship with psychopathology during adolescence (Plante et al. 2019). In this context, research on media emotion regulation represents a significant area. However, a few studies in this field lead to some limitations in this review study.

The first limitation arises from most studies on media emotion regulation involving American samples (e.g., Hiniker et al. 2016, Coyne et al. 2021). Indeed, it is observed that many studies on media emotion regulation have been conducted by a specific research group (Coyne et al. 2021, 2022, 2023). While the rate of children's participation in preschool education is 86% in the USA, where studies on media emotion regulation are conducted, this rate is 57% in Türkiye (TurkStat 2021, National Center for Education Statistics 2023). Considering the lower enrollment rate in Türkiye, it can be assumed that children spend more time at home, and thus, children may be more influenced by parents' media emotion regulation strategies. As suggested by the Parenting Process Model, culture influences parenting (Belsky 1984, Taraban and Shaw 2018). Culture shapes parenting beliefs, behaviors, and the role of parenting in children's development (Bornstein 2012). For instance, to encourage children's behavioral compliance and obedience, Chinese mothers use parenting by lying more frequently than American mothers, and endorse this behavior as a norm (Heyman et al. 2013). To our best knowledge, although there is no study examining the relationship between media emotion regulation and parenting cognitions and behaviors, it is considered that scrutinizing the cultural differences of parenting

factors on media emotion regulation will contribute to a better understanding of the issue. Therefore, it is essential for future studies to investigate variables that may be related to media emotion regulation (e.g., child schooling rate, parenting characteristics) in cultures other than the United States.

The second limitation is the lack of sufficient validity support for the measurements. Two different parent-report questionnaires were used to measure media emotion regulation. While the Reasons for Media Use (Radesky et al. 2016) aimed to measure general media use, the Media Emotion Regulation Scale developed by Coyne et al. (2021) specifically focused on this aspect. Although reliability values for these two measurements are provided in the studies, validity values have not been reported. Therefore, future studies are recommended to report both the reliability and validity values (e.g., content validity with factor analysis) in the measurements of media emotion regulation.

The third limitation is that measures of media emotion regulation were mostly taken on cross-sectional surveys (e.g., Radesky et al. 2016c, Coyne et al. 2021). Parents are asked to report how frequently they employ media emotion regulation strategies in these surveys. These measurements provide a single-time score of media emotion regulation, treating media emotion regulation as a fixed construct. Therefore, future studies should use research designs such as experience sampling methods or dairy studies. It is thought that these methods will enrich the literature by enabling the examination of changes in media emotion regulation over time and the role of the parent and children-related factors in these changes.

The fourth limitation is the lack of clarity regarding the age at which children begin to experience media emotion regulation. Considering that children are exposed to media in the first two years of life (Christakis 2014), it is unclear whether children's early experiences of media emotion regulation have a more negative role in their socioemotional development. In particular, the long-term impacts of media emotion regulation on socioemotional development should be investigated. For example, a study on the role of media emotion regulation on empathy found a cross-sectional negative relationship but a longitudinal positive relationship (Coyne et al. 2023). The researchers conducting the study speculated that in children's experiences of media emotion regulation, if the media content is educational in socioemotional development, this would support empathy. However, this finding is currently based on a single study. Therefore, research questions such as "Is experiencing media emotion regulation at an earlier age riskier in terms of developmental outcomes?" or "Does media content play a moderator role in the relationship between media emotion regulation and children's socioemotional development?" should be investigated in future studies.

Finally, it is considered that parental competence may also be related to media emotion regulation. Parental competence refers to a parent's thoughts and beliefs about their capacity to fulfill parenting tasks (de Montigny and Lacharite 2005). Parents with high competence may rely less on media emotion regulation strategies by having more confidence in managing their children's challenging emotional situations. Therefore, future research should examine the relationship between parental competence and media emotion regulation. All these factors can contribute to understanding the complexity of media emotion regulation and finding ways to use media to support children's development.

Conclusion

In the present era, childrens utilize media in a manner surpassing the suggested time limits.. Media use to regulate children's emotions has been conceptualized as media emotion regulation in the literature. This review study examined the predictors of media emotion regulation used as a parenting strategy and its consequences on children's socioemotional development. According to the research findings, parental educational level, parental media use, and children's temperament (negative affectivity, extraversion/surgency, effortful control) predicted media emotion regulation. Findings regarding the role of media emotion regulation on children's socioemotional development showed that it was related to children's problematic media use, emotional knowledge, and empathy. In short, the research in the literature displays that mother and child-related characteristics predict media emotion regulation and that media emotion regulation generally has a negative role in children's socioemotional development. Expanding the research on media emotion regulation, taking into account the mentioned considerations, will contribute to identifying more effective parenting strategies in media use that support children's socioemotional development.

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