Extrinsic Dysregulation: A Cross-National Reconceptualisation of Emotion Dysregulation in Middle Childhood

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Abstract

Youth mental health is an urgent global concern, with emotion dysregulation increasingly recognised as a key mechanism in the development and persistence of neurodevelopmental disorders, such as Attention-Deficit/Hyperactivity Disorder (ADHD). Middle childhood represents a critical developmental period for the emergence of emotion regulation capacities, yet it remains underexplored in existing research, which often adopts narrow, individual-focused models and pays limited attention to the contextual and relational factors that shape emotional development. This thesis addresses these gaps by reconceptualising emotion dysregulation, focusing specifically on ADHD and its interaction with parenting practices across middle childhood.

Study 1 involved conducting a scoping review, synthesising 11 studies on existing conceptualisations of emotion dysregulation in middle childhood. Two key themes emerged: (a) difficulties in processing emotions, including emotion generation and reactivity, and (b) challenges in adopting appropriate emotion regulation strategies, which hinder goal-directed behaviour. Importantly, existing models often neglect critical influences such as parenting, adverse childhood experiences, and coping mechanisms that are particularly relevant during middle childhood. To address these gaps, Study 1 proposes a revised, developmentally grounded conceptualisation of emotion dysregulation that emphasises its social, relational, and contextual nature in children aged 6-12.

Using longitudinal data from two cohort studies, the UK Millennium Cohort Study (MCS; ages 5, 7, and 11) and the Zurich Project on Social Development from Childhood to Adulthood (z-proso; ages 7, 9, and 11), Study 2 empirically investigated cross-sectional and longitudinal associations

between ADHD symptoms, parenting practices (withdrawn/harsh in MCS; positive/negative in z-proso), emotion dysregulation symptoms (MCS)/anger (z-proso), and socio-emotional outcomes (peer relationship problems in MCS; conflict coping strategies in z-proso), employing both moderation and mediation analyses. In the MCS, cross-sectionally at age 7, ADHD symptoms significantly moderated the association between withdrawn parenting and emotion dysregulation, with a statistically significant negative interaction indicating that the positive relationship between withdrawn parenting and emotion dysregulation weakened, as ADHD symptom levels increased. Longitudinally, ADHD symptoms at age 7 strengthened the associations between age 5 withdrawn/harsh parenting and peer problems at age 11. In z-proso, ADHD symptoms did not moderate the effects of parenting on anger at age 9; however, anger significantly mediated the longitudinal influence of ADHD symptoms at age 7 on both aggressive and competent conflict coping by age 11, highlighting emotional reactivity as a key pathway in behavioural development.

Study 3 integrated findings from Studies 1 and 2 to introduce the novel construct of extrinsic dysregulation, defined as a child's difficulty regulating the emotions of others, particularly parents. This construct challenges traditional, intrapersonal models by framing emotion regulation as a socially co-constructed and relational process, shaped by parenting practices, socio-economic conditions, and developmental stage.

This thesis makes three main contributions. It reconceptualises emotion dysregulation as a relational and developmentally specific construct relevant to the context of middle childhood. It provides cross-national, longitudinal evidence of how ADHD symptoms interact with parenting practices and emotional development. Finally, it introduces the original construct of extrinsic

dysregulation, highlighting children's difficulties in regulating their parents' emotions and offering a new perspective on the relational nature of emotional development. These findings underscore emotion dysregulation as a central yet under-addressed factor in child development, with significant implications for educators and practice. For educators, understanding children's emotion dysregulation may support the creation of emotionally responsive environments that foster positive peer interactions. For clinicians, the findings indicate that considering systemic and dyadic processes, such as family dynamics and co-regulation strategies, could help address children's emotion dysregulation within the relational contexts in which it occurs.

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List of Abbreviations

APQ	Alabama Parenting Questionnaire
CFI	Comparative Fit Index
CSBQ	Child Social Behaviour Questionnaire
MCS	Millennium Cohort Study
OECD	Organisation for Economic Co-operation and Development
OSF	Open Science Framework
RMSEA	Root Mean Square Error of Approximation
SCTS	Straus' Conflict Tactics Scale
SDQ	Strengths and Difficulties Questionnaire
TLI	Tucker-Lewis Fit Index
z-proso	Zurich Project of Social Development from Childhood to Adulthood

Declaration Statement

No material contained in the thesis has previously been submitted for a degree in this or any other institution. Material in this thesis has been published and submitted for publications which are currently in review. Data for this thesis was leveraged from the UK Data Service for the UK Millenium Cohort Study and from the Jacobs Centre for Productive Youth Development, University of Zurich for the Zurich Project on Social Development from Childhood to Adulthood.

Statement of Copyright

Dedication

Papa, though I was too young to remember you, your profound influence on our family's unwavering commitment to education has been a constant source of guidance in my life. Your vision and steadfast belief in the transformative power of learning shaped the path I have walked, even in your absence. Appappa, your quiet support and gentle encouragement gave me the strength to persevere, especially in moments when the road ahead seemed uncertain and daunting. Ammamma, as a teacher, you imparted more than just academic lessons: you ignited in me a lifelong passion for knowledge and a deep reverence for the life-changing potential of education.

This thesis is for you, my dearest Papa, Appappa, and Ammamma.

Ente hridayathil ningalude anugrahangal njan ennum kaathu sukshikyum.

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This doctoral journey has been one of both intellectual challenge and personal growth. It has required persistence, reflection, and the steady support of those around me. I am truly grateful to all those who supported this journey with their kindness, insights, and belief in the work.

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Chapter One

Introduction

1.1 Introduction to Thesis

Amid escalating concerns about the state of children's mental health, developmental psychopathology faces a critical paradox: despite decades of research and the development of increasingly sophisticated diagnostic tools, the core emotional processes implicated in childhood disorders remain poorly understood, particularly during pivotal transitional periods of development. Attention-Deficit/Hyperactivity Disorder (ADHD), one of the most prevalent and enduring childhood disorders, has traditionally been characterised by its behavioural features, namely inattention, hyperactivity, and impulsivity. However, a growing body of evidence challenges this narrow framing, suggesting that emotion dysregulation, defined as the difficulty in modulating emotional responses in a socially appropriate and context-sensitive manner, is not merely a comorbid complication but rather a fundamental characteristic of the disorder.

Although emotion dysregulation is increasingly recognised as clinically significant, its conceptualisation remains plagued by ambiguity and inconsistent operationalisation. This issue is particularly pronounced in the context of middle childhood, a critical yet under-theorised developmental period. Spanning the ages of six to twelve, middle childhood is marked by significant neurobiological and psychosocial changes. During these years, children begin to acquire the capacity for self-reflection, internalise social norms, and engage in more sophisticated emotional reasoning. It is also the period in which emotion regulation shifts from being externally

supported to becoming more self-directed, making it a pivotal stage for both adaptive development and the emergence of psychopathology.

Despite its importance, middle childhood remains conspicuously absent from the dominant discourse on emotion regulation and ADHD. Most theoretical models and intervention strategies have been extrapolated from early childhood or adolescence, failing to account for the distinct challenges and opportunities presented by this developmental stage. This oversight has significant implications. Without age-specific conceptual tools, emotion dysregulation in middle childhood is frequently mischaracterised, misdiagnosed, or overlooked. For children with ADHD, whose emotional responses are often more rapid, intense, and difficult to regulate, the lack of developmental focus compounds existing vulnerabilities.

Further complicating this issue is the limited attention given to contextual and relational factors, particularly parenting, in research on emotion dysregulation. While parents are often viewed as behavioural managers within clinical frameworks, the emotional dynamics of parent-child interactions are rarely emphasised. Yet, it is precisely through these interactions that children learn, or fail to learn, how to regulate their emotions. Parental responses to dysregulated behaviour can either exacerbate emotional volatility or provide essential scaffolding for the development of emotional competence. Therefore, understanding how parenting practices interact with emotion dysregulation in middle childhood is critical for a more comprehensive and developmentally grounded understanding of ADHD.

1.2 Theoretical Background

Why do childhood mental health disorders continue to escalate, despite decades of research and awareness?

The global mental health crisis is a pressing and well-documented issue, with the World Health Organisation [WHO] (2019) highlighting that one in eight individuals worldwide experiences a diagnosable mental health disorder. While this statistic underscores the magnitude of the problem, it also obscures critical developmental nuances that underpin mental health vulnerability and remain largely overlooked. The rising prevalence of mental health disorders in children is becoming an increasingly urgent concern, particularly within the broader developmental context. Recent data from an NHS England survey reveals that approximately 20.3% of children aged 8 to 16 are likely to have a mental health disorder (Newlove-Delgado et al., 2023). This upward trend cannot be fully understood without considering the complex interplay of structural, educational, and neuropsychological factors that shape children's development in contemporary society. The pressures associated with academic performance, family instability, and socio-economic precarity converge with children's developing cognitive and emotional capacities, often overwhelming their ability to effectively regulate internal states. These early emotional and behavioural difficulties, once considered transient maladjustments, are increasingly recognised as significant developmental risk markers. Far from being isolated or short-lived, they are predictive of later internalising and externalising disorders, as well as long-term disruptions to academic engagement, social integration, and overall life outcomes (Braet et al., 2014; Breaux et al., 2018). In this context, it is essential to reconceptualise childhood mental health not merely as an individual or clinical issue, but as a dynamic developmental process shaped by relational,

emotional, and socio-cultural contexts. These processes are not only shaped by the child's internal mechanisms but are also profoundly influenced by a wide array of external factors, including educational systems, family dynamics, and societal pressures. While holistic frameworks are widely endorsed in childhood mental health discourse, they often remain conceptually broad and under-theorised. A more nuanced understanding demands attention to the micro-contexts, family dynamics, and peer relationships, that contour children's developmental pathways.

Youth mental health research has made progress in areas such as early intervention (Izett et al., 2021) and adolescent suicide prevention (Forte et al., 2021). However, middle childhood, often described as 'the forgotten years', remains relatively under-researched and overlooked (Mah & Ford-Jones, 2012). This period marks key emotional, behavioural, and academic development, and has been largely marginalised in both empirical research and public discourse, despite its pivotal role in shaping long-term mental health trajectories (Mah & Ford-Jones, 2012). Mental health strategies have overwhelmingly prioritised early childhood and adolescence, often treating middle childhood as a stabilising or low-risk phase of development (Mah & Ford-Jones, 2012). This persistent oversight endures in contemporary global health priorities, which continue to focus resources into adolescent mental health in the hope of addressing broader developmental challenges (Guthold et al., 2023). Likewise, discussions around mental health in educational contexts are dominated by early years initiatives, often focused on school readiness and educator wellbeing, while middle childhood remains conspicuously absent (Stein et al., 2024). Yet, due to the lack of focused attention, emerging struggles, particularly in areas such as emotion regulation, are often left undiagnosed or unaddressed, only to escalate by adolescence or adulthood.

To fully grasp and address these challenges, contemporary research has delineated interconnected domains: (1) mechanisms and (2) populations. Each perspective serves as a critical lens for examining the issue, enabling a more nuanced and comprehensive reimagining of how

childhood mental health can be understood. These foundational pillars offer essential insights into the development of mental health disorders:

1. Mechanisms: The mechanisms perspective is concerned with the cognitive, emotional, and neurobiological processes that underpin mental health disorders. While understanding these mechanisms is undeniably crucial for explaining how individuals process and regulate emotions, the reductionist nature of this focus can obscure the broader social and environmental factors at play. Emotion dysregulation, for example, has been linked to a range of disorders including anxiety, depression, and ADHD (Bridges et al., 2004; Gross, 2015a), but focusing exclusively on individual processes may lead to interventions that fail to consider external influences, such as social pressures or systemic inequalities. While research has demonstrated that emotion regulation difficulties are central to many mental health disorders, a more holistic view that incorporates contextual factors is necessary to avoid an overly narrow conceptualisation of mental health.
2. Populations: The populations perspective focuses on specific groups that are more vulnerable to mental health challenges, such as children, adolescents, and individuals with pre-existing psychological disorders. Adolescents, for example, are especially prone to internalising disorders like anxiety and depression due to significant developmental and social pressures (Braet et al., 2014). However, this focus on distinct populations may inadvertently oversimplify the complexity of mental health by treating certain groups as homogenous. Children, especially in middle childhood, often display externalising behaviours like aggression and impulsivity, which are frequently linked to emotion dysregulation (Breaux et al., 2018). Yet, middle childhood is also a period of significant individual variability, where socio-economic status (SES), familial context, and access to mental health services can all play critical roles in

determining outcomes. Thus, interventions based on broad population-based assumptions may fail to address the unique needs of individual children within those groups.

Building on these perspectives, this thesis critically examines emotion dysregulation within the context of middle childhood, with a specific focus on its role in the persistence and maintenance of ADHD. It challenges prevailing assumptions about the disorder's trajectory, offering a nuanced exploration of how emotion dysregulation exacerbates the challenges faced by children at this developmental stage. The research delves into the developmental, academic, and social consequences of emotion dysregulation, particularly in relation to parenting practices, peer relationships, and conflict-coping strategies. By integrating psychological and educational perspectives, this study seeks to provide a comprehensive understanding of how emotion dysregulation influences not only children's experiences with ADHD but also their interactions with caregivers, peers, and their broader social environments. The research will also aim to examine how parenting practices can either mitigate or intensify the impact of emotion dysregulation, shaping children's emotional and social development during middle childhood.

1.3 Motivation

Given the profound impact of emotion dysregulation on childhood development, it is imperative that current mental health frameworks move beyond outdated, reductionist models that focus solely on treating symptoms after they emerge. Emotion dysregulation should be understood not as a standalone issue, but as one intricately connected to a child's social, academic, and familial environments (Alston et al., 2023). The failure to address emotion dysregulation comprehensively risks perpetuating the very conditions that lead to enduring mental health struggles. Too often,

however, the focus remains on reactive, symptom-based approaches rather than proactive, early interventions that could prevent the escalation of emotional difficulties (Campos et al., 1994).

The Organisation for Economic Co-operation and Development (OECD) Mental Health Performance Framework (OECD, 2019) compellingly calls for a paradigm shift in how mental health is approached, stating:

"For far too long, our attitude towards people with poor mental health has been at best, to ignore their problems. At worst, we stigmatise their suffering. Poor mental health is not a sign of weakness. We need to initiate a 'new order of things'... we have failed people with poor mental health for too long. They deserve better and we cannot afford the old status quo."

- Angel Gurría, OECD Secretary-General

Gurría's call to action underscores the urgent need to shift our approach to mental health, especially for children facing emotional difficulties. This statement highlights the systemic failure to address mental health issues early, reinforcing the need for a proactive, inclusive framework for intervention. In the context of this research, emotion dysregulation in children is often overlooked, yet it serves as a critical early indicator of more serious mental health issues. Gurría's plea for change directly aligns with the research goal of highlighting the importance of early identification and intervention, ensuring that children's emotional struggles are addressed before they escalate into long-term challenges. This shift is not just about better care: it is about changing the way we prevent future mental health crises.

In addition to the academic and societal imperatives driving this research, my personal and professional experiences have further illuminated its urgency and relevance. Through my involvement in youth community programmes, I have witnessed the profound and often

detrimental impact of untreated emotion dysregulation on young people's academic performance, social integration, and broader life outcomes. These experiences have underscored the inadequacies of current intervention strategies, which often fail to address the root causes of emotional difficulties in children. There remains a critical gap in both research and practice, where interventions tend to be reactive rather than proactive, and often isolated within clinical or therapeutic frameworks. The need for a more integrated, holistic approach to intervention is clear: one that not only addresses emotion dysregulation, but also recognises the complex interplay between emotional, educational, and social development. Such an approach demands a nuanced understanding of the factors shaping a child's emotional experiences, including the often-overlooked role of family dynamics and peer relationships. This doctoral research endeavours to contribute to the creation of a more equitable and effective mental health care system for children, one that prioritises prevention and a systemic shift towards a more integrated and proactive approach to mental health care.

1.4 Research Rationale

This research is motivated by two pressing imperatives that reflect the growing urgency of addressing emotion dysregulation in childhood. First, there is increasing recognition of the central role emotion dysregulation plays in the onset and persistence of mental health disorders. Second, there remains a critical need for a deeper exploration of the unique dynamics of emotion dysregulation during middle childhood. This phase is critical as it marks a time of rapid emotional and cognitive development, but it also sets the foundation for future psychological wellbeing and social integration.

Despite the growing body of literature on emotion dysregulation, many existing models fail to capture the specific emotional and behavioural challenges that children face during middle childhood. At this age, children are particularly prone to heightened emotional reactivity, difficulty managing frustration, and struggle to meet academic and social expectations. These difficulties are further exacerbated in children with ADHD, anxiety, and depression, where emotion dysregulation often manifests as behavioural outbursts, social withdrawal, or the development of maladaptive coping strategies (Breaux et al., 2018). Yet, much of the existing research tends to focus on the more easily identifiable outcomes of emotion dysregulation, such as aggression or hyperactivity, without sufficiently examining the underlying developmental processes and environmental factors that shape these behaviours. This gap in understanding leaves a critical void in our ability to both prevent and address the issues at their core.

Furthermore, the complex interaction between emotional, social, and familial factors remains largely underexplored. Parenting practices, for instance, have a profound influence on a child's emotion regulation, yet the nuances of how different parenting styles contribute to emotion dysregulation are not well understood (Alston et al., 2023). Similarly, factors such as SES and peer relationship problems may be relevant to consider in understanding the emotional development of children, particularly those who are vulnerable due to pre-existing mental health disorders (Braet et al., 2014). Yet, these variables are often overlooked in studies that predominantly focus on symptom alleviation rather than the holistic developmental trajectory of children.

This thesis adopts a more integrated and nuanced perspective by examining how emotional, social, and familial factors collectively contribute to emotion dysregulation during middle childhood. By highlighting the developmental intricacies of this period and examining the role of contextual variables such as parenting practices, peer relationships, and socio-economic pressures,

this research aims to offer a more comprehensive understanding of how emotion dysregulation manifests and evolves in this critical phase.

1.5 Thesis Contributions

This thesis provides a critical contribution to both theory and practice in understanding emotion dysregulation, ADHD, and parenting in middle childhood. It reconceptualises emotion dysregulation within the context of ADHD during this pivotal developmental stage. The research introduces the concept of extrinsic dysregulation, focusing on children's difficulties in regulating others' emotions, particularly parents, and how these difficulties are shaped by developmental antecedents, such as parenting practices and SES. Additionally, the thesis contributes to the field by shedding light on middle childhood, a period often overlooked in research on emotional development. By situating emotion dysregulation within this phase, the research highlights its implications for long-term mental health and social outcomes, offering insights that extend existing theoretical models of emotion regulation.

Practically, the thesis has implications for educators and clinicians. The findings suggest the importance of early identification of emotion dysregulation, especially within educational settings. Current teacher training in the UK incorporates some elements of emotional literacy and mental health awareness, as outlined in the Department for Education's *Mental Health and Wellbeing Support in Schools and Colleges* guidance (Department for Education, 2025). This doctoral research suggests that further integration of emotion regulation principles into teacher preparation could lead to better wellbeing outcomes for children with ADHD and related difficulties. For clinicians, the findings point towards the potential benefits of adopting a holistic perspective of emotion dysregulation, whereby developmental factors, including parenting

practices and relational dynamics, can contribute to more nuanced and contextually informed therapeutic strategies.

1.6 Publications

The publications listed below are included in this thesis, comprising published and unpublished works. In alignment with Durham University's guidelines, a published article may be incorporated in its original form within a research thesis, provided it was published during the course of the student's studies (see 8.6.7: Including Published Works within Research Degree Theses).

Published Journal Articles

Antony, E. M. A., Beckmann, N., & Higgins, S. (2025). Reconceptualising emotion dysregulation in the context of middle childhood: A scoping review of reviews. *JCPP Advances*, *5*(1), e12296. https://doi.org/10.1002/jcv2.12296

Antony, E. M. A., Beckmann, N., & Higgins, S. (2025). A Dual Cohort Analysis of Parenting Practices, ADHD, Anger, and Emotion Dysregulation in Middle Childhood: Findings from a UK and Zurich Sample. *JCPP Advances,* e70059. https://doi.org/10.1002/jcv2.70059

Under Review

Antony, E. M. A., Beckmann, N., & Walker, S. (2026). Interpersonal Extrinsic Dysregulation: Rethinking Emotion Dysregulation in Middle Childhood.

1.7 Thesis Structure

This thesis is structured across nine chapters, each contributing to a cohesive exploration of emotion dysregulation in middle childhood, particularly in relation to ADHD and parenting practices. The structure has been carefully designed to progress from conceptual foundations to empirical investigation, culminating in theoretical innovation.

The current chapter introduces the research context, articulating the rationale, aims, and contributions of the thesis across theoretical and practical, domains. It also presents a list of associated publications that have emerged from the work undertaken throughout the doctoral journey. This chapter situates the research within existing literature and highlights the need for greater conceptual clarity and empirical attention to emotion dysregulation during middle childhood.

Chapter Two initiates a three-part literature review, focusing on ADHD through a developmental lens. It outlines key arguments including the neurodiversity movement, and discusses the challenges in conceptualising and measuring ADHD. It also introduces two core themes of this thesis, parenting and emotion dysregulation, framing their relevance within the broader developmental trajectory of children with ADHD.

Chapter Three continues the literature review by examining parenting practices. It begins with an overview of conceptualisations of parenting practices, including harsh and withdrawn parenting, followed by a discussion of contemporary parenting research. This chapter reinforces the significance of parenting in shaping outcomes for children with emotional and behavioural difficulties.

Chapter Four concludes the literature review by exploring the concept of emotion regulation, with a particular focus on emotion dysregulation. It reviews seminal models, as well as

addressing conceptual and measurement challenges. The chapter concludes by integrating evidence on how ADHD, parenting, and emotion dysregulation intersect, based on cross-sectional and longitudinal studies.

Chapter Five outlines the overarching research aims, guiding questions, and scope of the thesis. This chapter introduces the three studies that collectively form the core of the thesis. The chapter positions the studies within a broader framework that integrates developmental psychology and youth psychopathology, setting the stage for the conceptual and empirical work that follows.

Chapter Six presents Study 1, a scoping review that synthesises existing literature on emotion dysregulation conceptualisations in middle childhood. Following the synthesis of literature, the study proposes a refined and age-appropriate conceptualisation of emotion dysregulation that captures the complexity and contextual embeddedness of this construct in children aged 6-12 years.

Chapter Seven details Study 2, which comprises two sub-studies (2A and 2B) that utilise large-scale, longitudinal secondary datasets, the UK Millennium Cohort Study (MCS) and the Zurich Project on Social Development from Childhood to Adulthood (z-proso). Study 2A examines how ADHD symptoms, specific parenting practices (harsh/withdrawn), and emotion dysregulation interact across ages 5, 7 and 11 utilising MCS data. Study 2B leverages data from z-proso to focus on associations between anger, negative/positive parenting practices and ADHD symptoms across ages 7, 9 and 11.

Chapter Eight introduces Study 3, which builds upon previous theoretical and empirical insights from Studies 1 and 2 to propose a new conceptual framework: extrinsic dysregulation. This study examines how children's struggles in regulating the emotions of others, particularly their parents, are shaped by developmental antecedents such as parenting practices and SES. By

highlighting these difficulties, the chapter challenges individualistic models of emotion regulation, positioning extrinsic dysregulation as a relational and developmental process.

Chapter Nine synthesises the findings from Studies 1, 2, and 3, highlighting the overarching contributions of the thesis and reflecting on their theoretical and practical implications. It emphasises a key conceptual shift, reframing emotion dysregulation as a dynamic, context-dependent process shaped by both internal capacities and developmental antecedents. There is also a focus on reflective inquiry, specifically addressing the personal and academic journey of this doctoral research project. The chapter underscores the importance of interdisciplinary approaches in understanding emotion dysregulation and reaffirms the value of focusing on middle childhood as a critical window for early identification and intervention.

1.8 Summary and Concluding Thoughts

This introductory chapter has established the framework for this thesis, highlighting its key aims, theoretical foundations, and practical relevance. It emphasises the central role of emotion dysregulation in understanding ADHD during middle childhood, arguing for a more developmentally informed approach that moves beyond individualistic, symptom-based models.

This thesis explores emotion dysregulation in middle childhood through three interconnected strands. It begins by synthesising existing literature on conceptualisations of emotion dysregulation to inform how it should be reconceptualised in this developmental period. It then draws on secondary data from the UK and Zurich to examine how ADHD symptoms, parenting practices, and emotion dysregulation intersect cross-nationally. Finally, it introduces the concept of extrinsic dysregulation, highlighting children's difficulties in managing the emotions of others as an important, yet underexamined, dimension of emotional development.

The thesis advocates for systemic, multi-level approaches to support children with ADHD, emphasising the need for collaboration across home, school, and clinical settings. This work seeks to bridge the gap between research and practice, contributing to more holistic, context-sensitive interventions. The next chapter introduces the literature review, establishing the empirical and theoretical foundations for the research, with a focus on ADHD in middle childhood and its relationship to parenting practices and emotion dysregulation.

Chapter Two

ADHD in Middle Childhood: Insights from a Developmental Perspective

2.1 Introduction

This chapter provides the foundation for the literature review by presenting a comprehensive and critically informed exploration of ADHD in middle childhood. It establishes the conceptual context for the subsequent chapters on parenting practices in Chapter 3 and emotion dysregulation in Chapter 4. The chapter begins by positioning ADHD within the broader landscape of youth mental health, before providing a detailed account of how ADHD is conceptualised and measured, as well as exploring key debates surrounding its conceptualisation. Following this, the chapter narrows its focus to a comparative exploration of ADHD in the UK and Switzerland, chosen for their contrasting healthcare systems and approaches to diagnosis, and then turns to address how ADHD manifests during middle childhood. Finally, the review focuses on the impact of ADHD on child functioning, in relation to parenting practices and emotion dysregulation.

2.2 Youth Mental Health

The discourse on youth mental health has expanded significantly in recent decades, with increasing recognition that wellbeing encompasses more than the absence of psychiatric disorder. Contemporary definitions draw on interdisciplinary perspectives to frame mental health as a dynamic interplay between individual capacities and environmental conditions, including the ability to regulate emotions, form stable relationships, and function in social settings (Bhugra et

al., 2013; Galderisi et al., 2015). Access to mental health assessment and support during middle childhood is profoundly shaped by socio-economic inequalities. Children from disadvantaged backgrounds are not only more likely to experience stressors that increase vulnerability to psychological difficulties, but are also more likely to be labelled as disruptive rather than referred for support (Ford et al., 2007). Research shows that females' internalising symptoms are under-recognised, while males, particularly those from racialised communities, are disproportionately subject to behavioural referrals and exclusion (Knaak et al., 2017; Sayal et al., 2018). These disparities suggest that diagnostic processes are not neutral or objective but embedded in wider social hierarchies that shape whose distress is acknowledged, whose behaviour is pathologised and whose support needs are met or ignored.

ADHD emerges as both a highly prevalent and contested diagnosis, with estimates suggesting that between 5-7% of school-aged children globally meet the criteria (Polanczyk et al., 2007). However, these figures conceal considerable variation in recognition and diagnostic practices across different cultural and institutional settings (Thomas et al., 2015). Standard diagnostic models tend to focus predominantly on behavioural symptoms such as inattention and hyperactivity, often sidelining emotion dysregulation, which remains marginal in official criteria. This omission is concerning, as evidence suggests that emotion dysregulation is not only common in ADHD but also predictive of academic impairment, peer conflict, and long-term mental health challenges (Shaw et al., 2014). By overlooking the emotional dimension, these diagnostic frameworks adopt a reductive view of ADHD, treating behaviour as separate from its developmental and relational contexts. A more comprehensive and developmentally informed approach to ADHD is needed: one that recognises the interconnectedness of emotional wellbeing, neurodevelopmental variability, and environmental factors during middle childhood. The next

subsection will explore ADHD in greater detail, with an overview of its clinical features and classification.

2.3 ADHD

The conceptualisation of ADHD has undergone significant transformation over the past century. Early descriptions of the disorder in the 20th century, such as 'minimal brain damage' or 'hyperkinetic reaction', reflected limited understanding and a tendency to link behavioural disturbance to neurological impairment (APA, 1994; Haroon, 2024). These terms emerged during a period in which child behaviour was interpreted primarily through biomedical frameworks that lacked developmental nuance. The progression to a neurodevelopmental model in more recent decades has brought greater complexity and specificity to the diagnostic discourse. However, it has also raised critical questions regarding the boundaries of typical development, the assumptions embedded within diagnostic systems, and the role of socio-cultural context in shaping symptom recognition. These concerns challenge the neutrality of the diagnosis and demand a more interdisciplinary and critically engaged approach to understanding ADHD.

Traditionally, ADHD has been positioned as a clinical disorder, codified in the Diagnostic and Statistical Manual of Mental Disorders [DSM-V] (APA, 2013) and the International Statistical Classification of Diseases [ICD-11] (Ustun et al., 2017). More specially, the DSM-V identifies three subtypes: inattentive, marked by distractibility, forgetfulness, and difficulty sustaining attention; hyperactive-impulsive, involving excessive movement, restlessness, and impulsive actions; and combined, where symptoms of both domains are present (APA, 2013). The disorder model implies a deviation from normative developmental trajectories, thereby pathologising the behaviours associated with ADHD. This conceptualisation underpins the biomedical model of

mental health, which seeks to locate the origins of ADHD in neurobiological, structural, or genetic abnormalities. While these distinctions help clinicians structure assessments, they may oversimplify the fluid and context-dependent nature of ADHD symptoms. Children often exhibit shifting symptom profiles over time, influenced by environmental demands, relational dynamics and developmental changes. However, the requirement that symptoms must be present across settings and for at least six months (APA, 2013) creates a tension between diagnostic standardisation and the complexity of lived experience.

Despite its diagnostic utility, the DSM framework has attracted criticism for reinforcing a categorical model that treats ADHD as a discrete entity rather than a dimensionally distributed set of traits. A growing body of research suggests that attention and impulse control exist on a continuum, with clinical impairment emerging at varying thresholds depending on the interaction of individual and contextual factors (Evans et al., 2020). This dimensional perspective is particularly relevant during middle childhood, when developmental expectations sharply increase, and behavioural regulation becomes a central criterion for school success. Standardised diagnostic thresholds may fail to capture the difficulties experienced by children whose symptoms fall just short of the criteria, but who nonetheless struggle in relational or academic domains. As such, categorical diagnosis may exclude children in need of support, particularly if their symptoms are internalised.

The global prevalence of ADHD also reveals inconsistencies that are not easily explained by biological variation. For example, the UK reports approximately 5%, compared to 8-10% in the USA (Haroon, 2024). These differences are often attributed to methodological inconsistencies, but they also reflect deeper structural divergences in how childhood behaviour is interpreted. Gendered and institutional biases further complicate diagnostic accuracy. Females, for example, are less likely to be diagnosed with ADHD because their symptoms often manifest as inattentiveness rather

than overt hyperactivity, which tends to attract more attention from adults (Rucklidge, 2010). Similarly, children from marginalised or disadvantaged backgrounds may be over- or under-diagnosed, depending on the interpretive frameworks used by educators and clinicians (Sayal et al., 2018). These disparities suggest that diagnostic decisions are not made in isolation, but are shaped by normative assumptions about gender, race and class. Failing to account for these influences not only compromises diagnostic equity but also risks entrenching social disparities in access to care and support.

Taken together, these critiques point to the need for a more developmentally anchored, relational and context-sensitive understanding of ADHD. Rather than treating it as a stable medical disorder with universal features, researchers and practitioners must recognise it as a fluid construct shaped by the interplay of biology, development and environment. This approach is particularly urgent during middle childhood, when diagnostic decisions can influence children's educational placement, self-concept, and future opportunities. As ADHD's complex nature is explored, the next sections will critically engage with the debate regarding whether ADHD should be classified as a disorder or condition, as well as acknowledging the neurodiversity movement, and the complexity of masking in diagnosing ADHD.

2.3.1 Classification of ADHD: A Mental Health Condition or Disorder?

The classification of ADHD has generated longstanding debate within the fields of psychiatry, psychology, education, and the broader social sciences. Critics argue that the medicalisation of behavioural traits such as impulsivity or distractibility risks pathologising typical variation in temperament and development (Timimi & Leo, 2017). There is concern that diagnostic thresholds are arbitrary and culturally contingent, with little consensus globally regarding what

constitutes ‘disorder’ versus ‘difference’. For instance, Nigg (2001) has argued that ADHD may be better conceptualised as a disorder of self-regulation or inhibitory control, which, while neurologically rooted, exists on a continuum within the general population. This dimensional perspective contrasts sharply with the categorical model employed in diagnostic manuals and opens the possibility of reframing ADHD as a condition or trait cluster, rather than a fixed disorder. Some scholars have also critiqued the psychiatric authority embedded in the classification of ADHD as a mental health disorder, particularly given the socio-political implications of psychiatric labelling (Conrad et al., 2018). The concept of ‘disorder’ is not merely descriptive but also evaluative: it implies dysfunction, abnormality, and often, a need for medical intervention. This framing can obscure socio-cultural and environmental factors that shape how attentional or behavioural difficulties are expressed and perceived. In this light, classification becomes as much a matter of power and discourse as it is of scientific validity. This critique aligns with broader calls within critical disability studies to examine how certain behaviours are labelled as disordered based on dominant societal norms around productivity, control, and conformity.

The ongoing debate over classification carries profound implications for how children with ADHD are perceived, supported, and valued within society. Labelling ADHD as a disorder risks entrenching deficit-based narratives, where children's behaviours are primarily interpreted through the lens of dysfunction. This may reinforce medicalised identities and inadvertently stigmatise children, framing their differences as pathological rather than part of the natural spectrum of neurodevelopmental variation (Biederman & Faraone, 2006). On the other hand, employing more neutral terminology, such as ‘condition’ or ‘difference’, may help challenge these pathologising narratives and promote more inclusive, non-stigmatising understandings. However, this re-framing carries the risk of minimising the lived impact of ADHD, particularly for those individuals who experience substantial impairments that demand structured and sustained intervention.

Importantly, the conceptual conflict between disorder and condition highlights the necessity of moving beyond binary classifications and embracing more dynamic, context-sensitive frameworks. For instance, it may be more accurate to understand ADHD as both a disorder, due to its neurological basis and impairment potential, and a difference, especially when recognising the strengths, talents, and adaptive traits associated with ADHD in certain environments (Barkley, 2015). Some researchers have even advocated for hybrid models that situate ADHD along both clinical and cultural dimensions, thereby integrating medical, psychological, and social understandings (Singh, 2008). Such models allow for a more flexible and holistic approach that reflects the complex and multifaceted nature of ADHD as it is experienced across diverse settings and developmental stages.

For the purposes of this thesis, ADHD will be conceptualised as a *neurodevelopmental disorder*. This decision is underpinned by the robust body of psychological evidence highlighting developmental trajectories and functional impairments that warrant clinical recognition. Framing ADHD in this way enables a critical yet coherent engagement with existing diagnostic frameworks, service provision models, and empirical research. However, this conceptualisation is adopted with caution and reflexivity, acknowledging that the language of disorder carries with it significant social implications. It is essential to remain aware of the risks of pathologising neurodivergent experiences and to consider the ways in which diagnostic labels may reinforce stigma or constrain identity formation. In this context, it is vital to explore perspectives that actively resist or reframe dominant medicalised narratives. One such approach is offered by the neurodiversity movement, which challenges conventional understandings of ADHD and other neurodevelopmental disorders, such as Autism Spectrum Disorder (ASD). Rather than viewing ADHD solely as a clinical disorder to be corrected or managed, the neurodiversity paradigm advocates for a strengths-based, socially informed recognition of cognitive variation. The next section will critically examine the emergence

of the neurodiversity movement, interrogating its core claims, critiques, and implications for conceptualising ADHD in both academic and real-world contexts.

2.3.2 Neurodiversity Movement: Reframing ADHD

The neurodiversity paradigm has emerged as a powerful challenge to traditional biomedical conceptualisations of ADHD, framing it not as a pathology to be cured but as a natural and valuable form of cognitive diversity (Armstrong, 2010). Within this framework, ADHD is considered a variation of human neurology with both strengths and difficulties, rather than a disorder marked solely by deficits. Rooted in the social model of disability, the neurodiversity movement argues that much of the 'disability' associated with ADHD arises not from intrinsic dysfunction, but from a mismatch between individual cognitive styles and the rigid expectations of social institutions (Russell, 2020). This reorientation offers a strengths-based, rights-oriented approach that seeks to affirm neurodivergent identities rather than remediate or suppress them.

Advocates of the neurodiversity paradigm contend that dominant deficit-based models have historically pathologised difference and marginalised individuals whose ways of thinking and behaving fall outside normative frameworks. By shifting the discourse, neurodiversity highlights the potential benefits of ADHD-related traits, such as creativity, spontaneity, and divergent thinking, particularly in environments that value innovation and adaptability (Armstrong, 2010). It also calls into question the neutrality of diagnostic systems such as the DSM, which are constructed within specific ideological paradigms. In doing so, the neurodiversity framework encourages a move away from 'one-size-fits-all' interventions and towards more person-centred, context-sensitive supports. While the neurodiversity movement emphasises the potential positive

aspects of traits often associated with ADHD, such as creativity, spontaneity, and adaptability, it is important to acknowledge that these characteristics are not universally beneficial.

However, the neurodiversity paradigm is not without its critics. Scholars such as Sonuga-Barke and Thapar (2021) acknowledge the significant contributions of the neurodiversity movement in reducing stigma and advocating for inclusivity, but they also caution that its emphasis on reframing ADHD in positive terms may downplay the real and often debilitating challenges many individuals face. Moreover, the movement's emphasis on self-advocacy and identity politics, while empowering for many, may not reflect the realities of all individuals with ADHD, especially children, those with complex needs, or those without access to robust support systems. For example, Nigg (2001) notes that ADHD's core impairments in executive functioning and behavioural inhibition are grounded in measurable neurocognitive differences and cannot be wholly attributed to social constructions or contextual pressures. There is a tension between recognising the validity of neurobiological evidence and acknowledging the political imperative to challenge deficit narratives. A thesis seeking to question ADHD must thus grapple with these epistemological tensions, rather than adopting a binary stance. Additionally, there are important concerns regarding the universality of the neurodiversity paradigm. Emerging largely within Anglo-American academic and activist spaces, the framework may inadvertently reflect Western liberal ideologies, such as individual autonomy, rights-based discourse, and neoliberal inclusivity, that do not translate into collectivist or non-Western contexts. In countries where conformity, obedience, and group harmony are highly valued (i.e., Japan), behaviours associated with ADHD may be interpreted very differently, often through moral or behavioural lenses, rather than clinical ones (Dey et al., 2012). As such, applying the neurodiversity framework globally without sufficient cultural adaptation risks reproducing new forms of conceptual dominance under the guise of inclusion.

Despite these critiques, the neurodiversity paradigm remains a vital corrective to historically narrow and often pathologising interpretations of ADHD. It pushes scholars and clinicians to confront the ethical dimensions of diagnosis and treatment, as well as to reflect on whose voices are privileged in the construction of psychiatric knowledge. For researchers and practitioners, the challenge lies in reconciling the paradigm's goals with the empirical realities of clinical impairment, ensuring that advocacy does not eclipse the need for meaningful support. Critically, it also demands an interrogation of the systems that define and enforce normative functioning, prompting a re-evaluation of institutional practices that may be more disabling than the condition itself.

The focus of this thesis will primarily be on the more challenging aspects of ADHD, particularly in relation to hyperactivity, inattention, and impulsivity, which can significantly impact individuals' functioning, in both academic and social settings. While the positive reframing of ADHD traits offers valuable insights into individual strengths, it does not overshadow the persistent difficulties many individuals with ADHD face in daily life, especially when these traits result in significant impairment. The discussion of neurodiversity, therefore, provides a broader context but will not be the central focus of this work. Instead, the emphasis will be on understanding ADHD as a neurodevelopmental disorder, with attention to its challenges.

2.3.3 The Complexity of Masking in ADHD Diagnosis

A growing body of literature has highlighted the phenomenon of masking, a process by which individuals consciously or unconsciously suppress or compensate for symptoms to conform to normative behavioural expectations (Nelson, 2025). While masking is well-documented in the context of ASD, its role in ADHD has received increasing attention in recent years, particularly as

diagnostic models have struggled to account for less visible or internalised symptomatology. Modesto-Lowe et al., (2008) suggest that females may be socialised to internalise symptoms or exhibit compensatory behaviours that reduce the visibility of core ADHD traits. These behaviours may include hypervigilance in classroom settings, overcompensation through perfectionism, or suppression of impulsivity to avoid social penalties, which may successfully mask impairment in structured environments. However, while such behaviours may mitigate external disruptions, they often come at a psychological cost, as the effort required to maintain behavioural conformity can lead to exhaustion, emotion dysregulation, and delayed identification. This dynamic may also contribute to the persistent gender disparity in ADHD diagnoses, where males are more frequently identified due to more overt and externalising behaviours.

Moreover, masking behaviours may be more prevalent in individuals with high cognitive ability, who are able to leverage their intellectual resources to obscure executive function deficits (Drechsler et al., 2020). These individuals may develop sophisticated compensatory strategies, such as excessive planning, reliance on routines, or verbal self-instruction, to manage tasks that others complete more intuitively. While these strategies can facilitate short-term success, they may be unsustainable, particularly in demanding or unstructured environments such as transitions between educational stages. This issue is compounded in high-achieving academic environments, where externalising symptoms may be less tolerated, and internalising presentations, such as inattentiveness, mental fatigue, or persistent low-level anxiety, may be misattributed to personality traits like shyness or laziness (Shahidullah et al., 2018). As a result, high-functioning individuals with ADHD may remain undiagnosed for years, only receiving attention when secondary issues, such as burnout or mood disorders, emerge.

Masking not only contributes to diagnostic inaccuracy but may also exacerbate psychological distress over time. Individuals who mask effectively may go undiagnosed and

unsupported for years, often internalising a sense of failure or inadequacy as they struggle to meet expectations that others appear to manage effortlessly. This can lead to a cumulative burden of stress and emotional strain, which may manifest in secondary mental health difficulties such as chronic low self-esteem, generalised anxiety, depression, or emotion dysregulation (Gray, 2008; Smith, 2017). Moreover, the internal conflict between external competence and internal chaos can create a disconnect in identity, particularly among adolescents and adults who begin to question why tasks feel disproportionately difficult. This reinforces the need for diagnostic approaches that move beyond surface-level symptom checklists to include ecological and observational assessments across settings (Barkley, 2014). By capturing variations in functioning and compensatory behaviours, particularly in everyday environments, clinicians can develop a more comprehensive and accurate understanding of an individual's difficulties, leading to more appropriate and timely support.

Masking in ADHD represents a significant and often overlooked barrier to timely and accurate diagnosis. Whether influenced by gender norms or cognitive ability, individuals who mask their symptoms may not meet traditional diagnostic thresholds, despite experiencing substantial internal distress and functional impairment. This disconnect between external presentation and internal experience underscores the limitations of symptom-based diagnostic models that privilege observable behaviours over contextual and subjective realities. As a result, many individuals, particularly those from underrepresented or marginalised groups, remain unidentified and unsupported. These complexities dovetail with a broader and seemingly contradictory discourse in ADHD research and clinical practice: the paradox of simultaneous overdiagnosis and underdiagnosis. The next section will examine Swiss and British conceptualisations of ADHD, exploring how socio-cultural, economic, and political factors shape our understanding of the disorder.

2.4 Conceptualisations of ADHD in Switzerland and the UK

Switzerland

In Switzerland, ADHD is largely viewed through a medicalised lens, operated by a decentralised healthcare system, where each of its 26 cantons is independently responsible for implementing health policies (Frei & Hunsche, 2001). This federal structure leads to a fragmented ADHD landscape, with variations in diagnostic criteria, service availability, and intervention strategies across linguistic and cultural regions (German, French, and Italian-speaking cantons), as well as between urban and rural areas. Indeed, in Switzerland, ADHD discourse often focuses on biomedical models, which can overshadow the lived experiences of children and their families, limiting the range of intervention strategies available (Rudin, 2020). Furthermore, by prioritising medical diagnoses over contextual and experiential factors, this model risks pathologising typical variations in behaviour, particularly in children from diverse cultural backgrounds or rural areas, where ADHD-related behaviours may be viewed as less concerning. The reliance on a medicalised approach also limits the potential for a more holistic, individualised understanding of ADHD, which could incorporate educational, social, and community-based interventions tailored to the unique needs of children across different regions.

Zysset et al., (2023) conducted a large-scale quantitative study examining ADHD diagnosis and treatment rates across several Swiss cantons using administrative health insurance data from over 50,000 children aged 6-14. Their findings revealed substantial geographic disparities in ADHD prevalence, with urban cantons such as Zurich reporting higher rates of diagnosis and medication use than rural areas like Appenzell or Valais. Crucially, these differences were not attributed to variations in ADHD symptom prevalence, but rather to differences in specialist access, parental health literacy, and cultural constructions of childhood behaviour. In many rural

or traditional regions, particularly among males, behaviours such as hyperactivity or impulsivity were often considered developmentally normative, delaying or deterring clinical attention. This suggests that socio-cultural beliefs operate as informal gatekeepers, influencing whether behaviours are viewed as pathological or typical.

Using data from z-proso, a robust, multi-informant longitudinal study of over 1,600 children, researchers have extended understanding of how ADHD symptoms unfold in context. For instance, Murray et al., (2021) employed autoregressive latent trajectory models with structured residuals (ALT-SR) across four waves (ages 11, 13, 15, and 17) to explore developmental relations between ADHD and bullying. They found that ADHD symptoms significantly predicted later bullying perpetration, particularly via impulsivity and reactive aggression, with some evidence of bidirectional effects involving victimisation. This supports the view that emotion dysregulation, manifested through reactive aggression, may act as a developmental bridge between core ADHD symptoms and peer-related difficulties.

Similarly, Speyer et al., (2021) examined the concurrent and longitudinal links between individual ADHD symptoms and reactive/proactive aggression in z-proso data at ages 7, 9, and 11. Their findings showed that inattentive symptoms preceded both types of aggression over time, while hyperactive/impulsive symptoms were uniquely associated with reactive aggression and dominance behaviours. These findings provide granular, symptom-level insights into how specific ADHD traits dynamically relate to emotion regulation difficulties, further supporting the reconceptualisation of ADHD as a developmental disorder of self-regulation, not merely attention or activity.

Gender dynamics have also been scrutinised; Klefsjö et al., (2021) analysed medical records of 100 Swiss child psychiatric outpatients (50 females, 50 males) to explore gender differences in ADHD diagnosis and treatment. They found females were more often referred for emotional

symptoms and were older at first assessment and diagnosis compared to males, who were typically referred for neurodevelopmental concerns. Females experienced longer diagnostic trajectories, including more clinic visits, higher rates of non-ADHD medication prescriptions, and greater use of psychotherapy and inpatient care before diagnosis. Medication rates were similar across genders. These findings underscore significant gender biases in ADHD recognition in Switzerland, particularly affecting females with inattentive or internalising symptoms. This aligns with broader themes in this thesis regarding how systemic and cross-national factors shape diagnostic pathways and contribute to disparities in ADHD identification and care.

Together, these Swiss studies reveal how ADHD diagnosis and conceptualisation are shaped by an interplay of systemic, gendered, and neuropsychological factors. These multifaceted perspectives illuminate critical challenges and disparities in ADHD recognition and care, laying a foundation for comparative analysis with other healthcare systems, such as the UK.

UK

In the UK, ADHD is firmly embedded within both medical and educational frameworks, making it one of the more integrated European systems in terms of policy recognition and service provision. However, while ADHD has gained increased visibility over the past two decades, its diagnosis and management continue to reflect broader systemic tensions, including regional disparities, professional role ambiguity, and ongoing social stigma.

Recent epidemiological estimates from NHS Digital (2023) place ADHD prevalence at 3-5% among school-aged children in the UK. Crucially, these estimates are drawn from the Mental Health of Children and Young People (MHCYP) survey, which employed stratified random sampling and multi-informant assessments (including the Development and Well-Being Assessment; DAWBA) across a sample exceeding 9,000 children aged 5-19. This survey

incorporates stratified sampling and multi-informant data using the DAWBA, providing high methodological rigour. Nevertheless, it likely underrepresents marginalised populations where stigma, cultural barriers, and institutional biases restrict diagnostic visibility.

A distinctive feature of the UK system is the active role of educational psychologists in ADHD assessment and referral. Hill and Turner (2016), using survey and interview data from 138 educational psychologists, reveal a widespread ambivalence toward formal ADHD diagnosis. Practitioners often advocate for early identification but simultaneously express concern about over-pathologising normative behaviours or those better contextualised within psychosocial frameworks. This tension between biomedical and educational paradigms introduces friction, as professionals navigate competing priorities of clinical accuracy, institutional accountability, and safeguarding child welfare.

While the UK benefits from national guidelines, most notably those issued by (NICE, 2018), their implementation remains uneven. NICE advocates for a stepped-care approach, prioritising behavioural interventions for younger children and reserving pharmacological treatment for more severe or persistent cases. Yet qualitative research by Cunningham et al., (2020), based on interviews with 32 parents in England and Wales, highlights the fragmented and often delayed nature of service pathways. Parents reported long wait times, inadequate follow-up, and inconsistent availability of non-pharmacological supports. A recurring theme in their accounts was the fear of stigma, particularly the social consequences of having their child labelled as ‘disruptive’ or ‘naughty’, which contributed to diagnostic delays and underutilisation of services.

Children from lower-income households are more likely to experience risk factors associated with ADHD (e.g., perinatal adversity, housing instability), but paradoxically less likely to receive timely diagnosis and support. Ford et al., (2007), analysing a nationally representative sample of over 13,000 children, found that income, parental education, and neighbourhood

deprivation significantly predicted disparities in access to assessment and treatment. These findings underscore the ways in which ADHD, while ostensibly a neurodevelopmental disorder, is structured by social determinants and institutional gatekeeping. Taken together, the UK represents a hybrid case: its national guidelines and universal healthcare infrastructure offer a promising framework for equitable ADHD identification and care, yet persistent implementation gaps and socio-cultural dynamics undermine this potential. The UK's system is neither wholly centralised nor decentralised, and this institutional ambiguity creates both flexibility and inconsistency. For this thesis, the UK serves as a critical reference point, not only due to its robust epidemiological data and established policy infrastructure, but also because it exemplifies the disjunction between structural frameworks and the lived realities of ADHD governance. This dissonance is particularly evident in the gap between policy intentions and the actual experiences of individuals with ADHD, as well as the variability in diagnostic practices and access to services.

Comparative Reflections

Both UK and Swiss studies provide rich, population-based insights into ADHD's complex social and developmental dimensions, yet they approach these themes from distinct methodological and contextual points. Research from Switzerland exemplified by the z-proso cohort studies (Murray et al., 2021; Speyer et al., 2021), leverages longitudinal, multi-informant datasets and sophisticated statistical techniques, such as autoregressive latent trajectory models, to illuminate the nuanced developmental pathways of ADHD symptoms. This work situates ADHD as a fluid, self-regulatory disorder embedded in evolving social interactions, highlighting symptom-level dynamics linked to aggression and peer victimisation over time. The Swiss emphasis on developmental psychopathology foregrounds individual trajectories within broader socio-cultural milieus. Conversely, UK research tends to integrate large-scale epidemiological

surveys, notably the MHCYP survey (NHS Digital, 2023), with qualitative inquiries into lived experiences and professional practices (Cunningham et al., 2020; Hill & Turner, 2016). This dual approach foregrounds systemic barriers and institutional complexities, such as service fragmentation, diagnostic delays, and professional ambivalence, thus emphasising the socio-institutional architecture shaping ADHD identification and management rather than underlying neurodevelopmental processes.

Contextually, Swiss findings underscore the powerful influence of cultural norms and healthcare decentralisation on ADHD recognition. Studies including Zysset et al., (2023) reveal how geographic and linguistic fragmentation fosters considerable regional variability, with rural cantons often normalising behaviours regarded as pathological elsewhere. In contrast, the UK operates within a more unified policy framework governed by NICE guidelines, yet this centralisation masks persistent challenges, namely uneven guideline implementation, professional uncertainties, and socio-economic disparities in access (Cunningham et al., 2020; Hill & Turner, 2016). In essence, Switzerland's decentralised and culturally heterogeneous system generates variability in ADHD recognition through localised socio-cultural gatekeeping, whereas the UK's centralised system contends with fragmentation rooted in institutional and professional factors. This comparison highlights that neither decentralisation, nor centralisation alone ensures equitable or consistent ADHD identification and care. Instead, both systems grapple with complex interplays between culture, policy, professional practice, and social determinants, underscoring the need to understand ADHD not merely as a clinical entity but as a socially and developmentally constructed phenomenon.

2.5 Middle Childhood and ADHD

Middle childhood (ages 6 to 12) is a pivotal stage of development, marked by increased independence, academic demands, and the growing influence of peer relationships (National Research Council [USA], 1984). For children with ADHD, these developmental tasks are often disrupted by persistent symptoms of inattention, hyperactivity, and impulsivity, which can impair emotion regulation, social functioning, and academic progress. Several studies have identified key factors that may influence the course of ADHD during this period, including early attachment and parent-child relationships (Augustin et al., 2024; Karavasilis et al., 2003), parenting practices (Hawes et al., 2013), gender differences in symptom expression and diagnosis (Nolen-Hoeksema, 2012; Rucklidge, 2010), and emotion dysregulation (Wang et al., 2018). These findings contribute to a more nuanced understanding of the disorder and highlight the importance of contextual and developmental influences on symptom trajectories and long-term outcomes.

For instance, Augustin et al., (2024) investigated how maternal emotional availability and child attachment insecurity relate to ADHD symptoms among children in middle childhood, using a clinical inpatient sample of 71 mother-child dyads. Their cross-sectional study utilised standardised self-report questionnaires to assess maternal emotional availability and attachment security, alongside clinical ratings of ADHD symptom severity. While this approach allowed detailed characterisation within a clinically relevant population, the cross-sectional design limited causal inference, making it difficult to determine whether attachment insecurity exacerbates ADHD symptoms or vice versa. Additionally, the relatively small clinical sample reduces the generalisability of findings to broader community populations. The reliance on maternal self-reports also introduces potential reporting biases which may affect the validity of observed associations.

In contrast, Karavasilis et al., (2003) employed a larger community sample of 202 children and focused on parenting style, attachment, and ADHD symptomatology in a cross-sectional framework. Using regression analyses they found authoritative parenting characterised by warmth and structure was linked to reduced behavioural problems and improved functioning in children with ADHD. Although the larger sample enhanced statistical power, the exclusive reliance on self-reported parenting styles and attachment measures, similar to Augustin et al., (2024) may not fully capture the nuanced dynamics of parent-child interactions. The cross-sectional design again limits conclusions about the direction of effects highlighting the need for longitudinal approaches.

Addressing this gap, Evans et al., (2020) conducted a longitudinal study following over 300 children from diverse socio-economic backgrounds. They applied latent growth modelling to track ADHD symptom trajectories and comorbid Oppositional Defiant Disorder (ODD) over time, assessing their predictive value for social, emotional, and academic outcomes. This method allowed for modelling individual variability in symptom development and identification of critical periods for intervention. However, the study primarily used parent and teacher rating scales to assess symptoms potentially introducing response bias. Although the researchers controlled for various confounders, the study did not account for factors, such as peer relationships or community influences, which may also shape symptom trajectories.

Similarly, Hawes et al., (2013) followed approximately 250 children longitudinally, examining parenting practices and ADHD symptom development across early and middle childhood. They measured parenting through repeated assessments of parental consistency, warmth, and discipline and ADHD symptoms using combined parent and teacher reports. Their findings indicated that authoritative parenting predicted lower levels of hyperactivity and inattention over time. The longitudinal design and multiple informants strengthen the evidence for the influence of parenting on ADHD symptoms. However, the study did not consider genetic

predispositions or comorbid conditions such as anxiety and depression which can confound symptom trajectories.

Gender differences in ADHD expression have also been a focus. Nolen-Hoeksema (2012) and Rucklidge (2010) highlighted that males generally show more hyperactive and impulsive behaviours while females exhibit predominantly inattentive symptoms. Rucklidge's (2010) study with over 500 children used cross-sectional data and found that ADHD tends to be underdiagnosed in females, possibly due to their subtler symptom presentation. Although informative, these studies' cross-sectional nature limits understanding of how gender differences in symptoms evolve over time and impact outcomes in education, social domains, and mental health.

Further insight into ADHD trajectories comes from Wang et al., (2018) who used data from the Longitudinal Study of Australian Children, following over 3,000 children at ages 6-7, 8-9 and 10-11. Employing multiple-indicator latent growth curve modelling, they examined internalising problems such as anxiety and depression alongside ADHD symptoms. The study identified early childhood emotion dysregulation as a significant predictor of escalating internalising problems. Given the common overlap of emotion dysregulation with ADHD, these findings emphasise the importance of addressing emotional and social challenges in ADHD interventions. The large sample size, multi-wave design, and sophisticated modelling enhance the robustness of these findings, although the study primarily relied on questionnaire data which may be limited by self-report biases.

Collectively, these studies underscore key influences on ADHD symptom progression but also reveal consistent limitations, including small samples, subjective measures, and cross-sectional designs that hinder causal conclusions and broader applicability. To advance the field, rigorous longitudinal research with diverse samples and multi-informant assessments, while accounting for genetic and environmental factors, is essential. The following subsection will focus

on how ADHD affects functioning, with particular attention to emotion dysregulation and parenting practices.

2.6 The Impact of ADHD on Functioning

ADHD and Emotion Dysregulation

Although emotion dysregulation is not formally included within the diagnostic criteria for ADHD, it represents a critical and frequently overlooked dimension of the disorder, with significant implications for affected individuals' functioning and wellbeing. Research indicates that up to 50% of children with ADHD experience clinically meaningful difficulties in regulating their emotions, characterised by heightened emotional reactivity, persistent irritability, and low frustration tolerance (Shaw et al., 2014; Sobanski et al., 2010). These manifestations are often neglected in assessments that narrowly prioritise behavioural symptoms, leading to misinterpretations of affected children as merely 'overly sensitive' or 'defiant'. Such mislabelling obscures the neurodevelopmental origins of their behaviour, potentially delaying essential interventions and exacerbating the child's challenges by denying them appropriate support. The failure to adequately recognise and address emotion dysregulation risks perpetuating stigmatising misconceptions and hampers the development of effective, individualised treatment strategies.

Emotion dysregulation is consistently linked with strained peer relationships, disciplinary difficulties within educational settings, and a heightened risk of co-occurring internalising disorders such as anxiety and depression. Shaw et al., (2016) describe how children with ADHD frequently exhibit emotional outbursts and prolonged difficulties in returning to emotional equilibrium, particularly in unstructured or socially demanding environments. Over time, these emotional challenges may intensify academic struggles, diminish school engagement, and

contribute to negative self-concept, especially when children face recurrent reprimands or social exclusion due to their emotional volatility. Importantly, the presentation of emotion regulation difficulties in ADHD is heterogeneous, varying by factors such as age, gender, and contextual influences. For instance, females may be more prone to internalising distress, manifesting as withdrawal or self-critical behaviours, while males often exhibit more externalising behaviours, including aggression or impulsivity (Conrad et al., 2018). This variability underscores the necessity for comprehensive and individualised assessment and intervention approaches that consider developmental stage and environmental stressors. It further highlights the limitations of interventions that focus narrowly on behaviour management while neglecting emotional wellbeing.

Parenting practices have a central role in either exacerbating or mitigating emotion regulation difficulties in children with ADHD. Empirical evidence indicates that negative parenting characterised by criticism, inconsistency, and emotional unavailability correlates with increased emotion dysregulation (Caro-Cañizares et al., 2015). Conversely, parenting marked by warmth, structured support, and emotional responsiveness fosters more adaptive emotional coping strategies. These findings emphasise the role of parents as critical co-regulators of emotion during early and middle childhood, periods when emotional skills are rapidly developing. Contemporary intervention frameworks increasingly advocate for a focus on the emotional and relational context of ADHD, rather than exclusively targeting overt behaviours. For example, Muratori et al., (2022) demonstrated that integrated programmes combining parent training with child-focused emotion regulation interventions resulted in significant improvements in children's emotional understanding, frustration tolerance, and overall functioning. Similarly, Kofler et al., (2019) highlight the necessity of synchronised interventions addressing both executive functioning and emotion regulation across home and school settings. When children's emotional needs are actively

recognised and supported alongside behavioural objectives, improvements in self-esteem, peer relationships, and academic engagement tend to follow.

In summary, emotion dysregulation constitutes a core and impairing feature of ADHD that is frequently overlooked in diagnostic and therapeutic processes. It exerts a profound influence on children's social experiences, learning environments, and mental health trajectories. Parenting practices are pivotal in shaping the development and management of emotional difficulties and should therefore be central to assessment and intervention planning. Therefore, approaches that explicitly acknowledge and target emotion dysregulation are likely to yield more sustainable and meaningful outcomes for children with ADHD, especially when parents and educators collaborate in supporting both emotional and behavioural development.

ADHD and Parenting Practices

Parenting plays a foundational role in the lives of children with ADHD, not only in shaping behavioural outcomes but also in fostering emotional security, academic confidence, and overall developmental trajectories (Chronis-Tuscano et al., 2013; Johnston & Mash, 2001). Unlike neurotypical children, those with ADHD often require more intensive and consistent parental scaffolding to support their executive functioning, emotion regulation, and task persistence (Sonuga-Barke, 2010). As such, understanding how parenting styles and strategies influence the expression and management of ADHD is critical for promoting resilience in both children and their families.

Parenting practices cannot be examined in isolation from the broader psychosocial and cultural contexts that shape parental capacity and behaviour. High levels of parental stress, mental health difficulties, and socio-economic disadvantage significantly constrain the ability to provide consistent and nurturing care, complicating the assumption that parental 'deficits' are primarily

responsible for children's behavioural difficulties (Muratori et al., 2022). Cultural frameworks also influence parenting styles and expectations, suggesting that universal models of 'good' parenting may fail to engage or resonate with diverse families. Thus, failing to integrate cultural sensitivity risks alienating parents and reducing intervention adherence (Modesto-Lowe et al., 2008). Additionally, while parental involvement in educational settings is often advocated as a key support for children with ADHD, structural barriers such as economic hardship and institutional bias frequently undermine equitable participation, perpetuating disparities in access to resources and support (DuPaul et al., 2019). These contextual challenges underscore the need for systemic approaches that extend beyond the parent-child dyad.

In this context, Barkley's (2014) behavioural framework remains influential, positing that parenting marked by warmth, consistency, and clear behavioural contingencies can compensate for the neurocognitive deficits characteristic of ADHD, such as impaired working memory and impulse control. However, this emphasis on behavioural structure raises critical questions about its sufficiency. Does focusing on environmental control and behaviour management risk overlooking the emotional attunement children with ADHD need, especially regarding emotion dysregulation? Moreover, can a behavioural approach adequately address contextual factors that shape parenting effectiveness? These questions call for a more integrative framework that situates behavioural strategies within broader emotional and systemic contexts.

In summary, the influence of parenting on ADHD outcomes is multifaceted and embedded within complex emotional, cultural, and socio-economic landscapes. Critically evaluating existing models reveals a need to shift from reductionist approaches towards holistic frameworks that recognise the transactional nature of parent-child interactions and the external pressures shaping parenting, including emotional sensitivity and systemic support. It is against this framework that this doctoral research investigates the interrelations between parenting practices, emotion

dysregulation, and ADHD symptoms within middle childhood, aiming to contribute a nuanced, contextually grounded understanding that informs both theory and practice.

2.7 Summary and Concluding Thoughts

This chapter has addressed the multifaceted nature of ADHD, foregrounding its complexity not only as a neurodevelopmental disorder, but as a construct dynamically shaped by evolving scientific paradigms, cross-national contexts, and educational practices. Through critical examination of diagnostic conceptualisations, emotion regulation challenges, and the role of parenting, the discussion underscores the imperative for a nuanced and child-centred framework in understanding and supporting children with ADHD.

The ongoing debate between categorical and dimensional models of ADHD reveals inherent tensions in attempting to encapsulate a heterogeneous and developmentally fluid disorder within rigid diagnostic frameworks. While established nosologies such as the DSM and ICD provide necessary structure for clinical practice, their categorical criteria risk oversimplifying the diverse presentations of ADHD, potentially marginalising subtler impairments or obscuring context-dependent variations in symptomatology. In contrast, a dimensional approach offers greater sensitivity to symptom severity, developmental trajectories, and comorbidities, facilitating more personalised assessment and intervention strategies. This paradigm shift challenges the adequacy of ‘one-size-fits-all’ models and calls for adaptive support systems responsive to each child’s unique profile and environmental interactions.

Comparative analyses across national contexts, exemplified by contrasts between the UK and Switzerland, further illuminate the importance of integrated, multi-agency support systems. Such systems-level perspectives advocate for holistic support that transcends narrow symptom

suppression or classroom conformity, recognising the complex networks influencing child development. A critical focus of the chapter has been emotion dysregulation, a frequently under recognised, but profoundly impairing component of ADHD. Such emotional challenges are often invisible within standard diagnostic frameworks, yet they bear significant implications for children's wellbeing and interpersonal functioning. Moreover, parenting emerged as a vital contextual determinant in shaping the developmental course of ADHD. The quality, consistency, and emotional attunement of parental responses can either mitigate or amplify symptom expression, positioning parents as active agents rather than passive observers within intervention processes.

In sum, this chapter advocates for comprehensive, contextually attuned approaches to ADHD that move beyond reductive behaviourist models to embrace the cognitive, emotional, relational, and environmental dimensions of the disorder. A deeper understanding of parent-child dynamics, particularly in relation to emotion regulation, attachment, and resilience, is essential for mitigating intergenerational cycles of misunderstanding and blame. Recognising the profound impact of parenting on ADHD symptom expression, the subsequent chapter will critically examine parenting practices.

Chapter Three

The Influence of Parenting Practices on Child Development

3.1 Introduction

This chapter marks a shift from the previous focus on ADHD to a more targeted examination of parenting practices and their role in children's emotional development during middle childhood. Parenting is widely recognised as a central determinant of children's emotional and behavioural trajectories, with substantial evidence indicating that both the quality and consistency of parenting shape children's ability to regulate emotions and cope with environmental stressors. Within this framework, particular attention is given to variations in parenting practices, including harsh and withdrawn parenting, as well as broader conceptualisations of negative and positive parenting. This chapter compares the conceptualisation and measurement of parenting across the two national contexts shaping the second study of this thesis (Chapter 7), the UK and Switzerland. The chapter also considers contemporary challenges in parenting research, including the often-overlooked influence of parental wellbeing on parenting behaviour. Finally, it critically examines the link between parenting practices and emotion dysregulation in children, setting the foundation for the empirical analyses that follow.

3.2 Parenting Practices

Parenting practices encompass a range of behaviours that directly influence children's socio-emotional, behavioural, and cognitive outcomes. These include strategies related to discipline, emotional responsiveness, monitoring, and support for autonomy. Darling and

Steinberg (1993) conceptualised parenting practices as the mechanisms through which parents transmit behavioural norms and emotional expectations, shaping children's ability to navigate their environments. While early theoretical models, such as Baumrind's (1991), focused primarily on behavioural control and authority styles, more contemporary frameworks have emphasised the importance of emotional attunement, consistency, and mutual responsiveness in the socialisation of children. These shifts reflect a broader recognition that parenting is not only about managing behaviour, but also about scaffolding children's regulatory capacities in emotionally meaningful ways.

Positive parenting, typically defined by warmth, consistent structure, and supportive engagement, has been associated with a broad range of favourable developmental outcomes, including emotional resilience, secure attachment, and prosocial behaviour. Abidin (1992), for example, suggested that emotional warmth and positive engagement from parents foster a sense of security and predictability, both of which are critical for adaptive emotion regulation. Similarly, Amato and Fowler (2002), using data from the National Survey of Families and Households in the USA (n = 2,247), found that higher levels of parental support and lower levels of harsh discipline were associated with improved child self-esteem and fewer behavioural difficulties. However, their reliance on cross-sectional data and single-informant (parent-reported) measures raises concerns about common method bias and limits causal inference. Moreover, their operationalisation of positive parenting focused primarily on behavioural indicators and did not account for the emotional context in which these behaviours occurred.

Eisenberg et al., (2001) addressed some of these limitations by employing a multi-informant, mixed-method design in a study of 214 children aged approximately 4-8 years. Parents and teachers reported on children's internalising and externalising symptoms, while

observational data were collected across several tasks designed to assess emotion regulation and control. The findings indicated that children with externalising problems exhibited higher impulsivity, lower effortful control, and a stronger tendency toward anger, while those with internalising symptoms displayed more sadness and reduced attentional regulation. Importantly, the study highlighted the distinction between effortful control (a voluntary, goal-directed process) and more reactive, less deliberate forms of regulation. While this differentiation adds important nuance to the emotion regulation literature, the role of parenting in facilitating or undermining these capacities was not directly measured. Although the study reveals important individual differences in children's emotional functioning, it leaves the question of how specific parenting behaviours contribute to these outcomes.

In contrast, Axpe et al., (2019) directly investigated the influence of parental behaviours on adolescents' emotional and behavioural functioning. Drawing on a large sample of 1,190 Spanish adolescents aged 12 to 17 from both public and semi-private schools, the study examined the interplay between maternal and paternal affect and strictness, using structural equation modelling (SEM) to determine how these dimensions combine to shape adolescents' perceptions of family socialisation style. Positive parenting was conceptualised through two dimensions: affect/communication and behavioural demands. The findings showed that maternal dimensions, particularly affect and communication, played a more central role in shaping adolescents' perceptions of the overall family climate than paternal dimensions. Furthermore, higher levels of parental warmth were linked with greater social competence and fewer behavioural difficulties. Unlike many earlier studies, Axpe et al., (2019) accounted for SES and used separate assessments of both maternal and paternal contributions, strengthening the validity of their conclusions.

However, while both Eisenberg et al., (2001) and Axpe et al., (2019) support the premise that emotional responsiveness and consistency are protective, they approach the construct of positive parenting in markedly different ways. Eisenberg et al., (2001) infer its influence indirectly through child-level outcomes, without explicitly measuring parenting practices, while Axpe et al., (2019) rely on adolescent self-reports and do not include observational data or longitudinal follow-up. Moreover, neither study explicitly considers the needs of neurodivergent children, such as those with ADHD, who may require a different balance between emotional sensitivity and behavioural structure.

This gap is particularly relevant given the growing public interest in 'gentle parenting' models, which promote empathy, negotiation, and reduced reliance on coercion. While such approaches may support secure attachment and emotional safety in many families, they may not be developmentally appropriate for children with regulatory vulnerabilities. Simon (2024) critiques gentle parenting, arguing that children with ADHD, who often struggle with impulsivity and emotional lability, may require greater external structure and scaffolding. In this context, autonomy without predictable boundaries can leave children unsupported in managing their emotional responses, potentially exacerbating dysregulation. This concern is echoed by Alston et al., (2023), who found in a UK-based sample of 430 families that parental warmth alone did not reduce emotion dysregulation in children with ADHD unless accompanied by consistent behavioural limits. The study used both parent and teacher ratings, alongside standardised measures of child behaviour, and highlighted the risks of over-relying on emotionally supportive strategies without sufficient behavioural containment.

Taken together, these studies underscore the multifaceted nature of positive parenting and its crucial role in supporting children’s emotional development. However, the diversity in methodologies, samples, and conceptualisations reveals important gaps, particularly the

lack of focus on neurodivergent populations that shape parenting effectiveness. While warmth, responsiveness, and consistent structure generally promote adaptive regulation, these elements must be balanced thoughtfully with children's individual needs and developmental contexts. This complexity highlights the need for further research that integrates behavioural and emotional dimensions of parenting across different child profiles and cultural settings, including harsh parenting practices, which will be addressed next.

3.2.1 Harsh Parenting Practices

Harsh parenting, defined by practices such as physical punishment, verbal aggression, and emotional neglect, have been extensively linked to poor emotional and behavioural outcomes, particularly impairments in children's emotion regulation (Cicchetti & Toth, 2016). However, the mechanisms through which harsh parenting affects children appear to vary depending on specific parenting behaviours, child characteristics, and contextual influences.

For example, McKinney et al., (2011) conducted a cross-sectional study involving 526 emerging adults aged 18-22 years, using self-report questionnaires to measure retrospective perceptions of parenting styles including authoritative, authoritarian, and permissive, discipline strategies such as non-violent discipline, psychological aggression, and physical assault, and current emotional adjustment including self-esteem, depression, and anxiety. SEM revealed distinct gender differences: for females, the overall perceived parenting style exerted a stronger influence on emotional outcomes, whereas for males, specific discipline strategies had a greater impact. Intriguingly, the study found that fathers' parenting style influenced daughters' emotional adjustment more than their discipline tactics, suggesting that parental gender and child gender interplay complexly to shape emotional development. These

findings underscore that the emotional effects of harsh parenting differ depending on the nuances of parenting behaviour and gender dynamics.

In contrast, Rajyaguru et al., (2019) leveraged data from the UK Millennium Cohort Study, a large-scale longitudinal sample of children followed from infancy to young adulthood. Using maternal reports of disciplinary strategies at age 3, categorised into 'active' methods such as smacking, shouting, and telling off, and 'withdrawal' methods including ignoring, removing privileges, and sending to bedroom, the researchers traced conduct problems and emotional symptoms from ages 3 to 11. Their analysis found that both active and withdrawal discipline practices were linked to a reduction in conduct problems over time. However, only active discipline was associated with an increase in emotional difficulties ($\beta = 0.07$, $p = 0.03$), highlighting a nuanced trade-off where harsh discipline may limit behavioural issues, but simultaneously heighten emotional problems. This contrasts with McKinney et al., (2011) study, whose findings emphasised differential impacts of style versus specific discipline and adds a developmental perspective on how particular harsh strategies differentially shape child outcomes longitudinally.

Speyer et al., (2022) further explored these dynamics at ages 3, 5 and 7 years, utilising data from the UK MCS. Utilising cross-lagged panel models (CLPM), they investigated reciprocal relations between harsh parenting, primarily reported by mothers, and child behavioural and emotional problems. Supporting Patterson's (2010) coercion theory, the study demonstrated bidirectional influences where harsh parenting predicted increases in conduct problems, as well as hyperactive and inattentive behaviours, which in turn elicited more harsh parenting. This cyclical pattern illustrates the dynamic and transactional nature of parent-child interactions where harsh parenting and child dysregulation exacerbate each other over time. Compared to McKinney et al., (2011)'s retrospective design and Rajyaguru et al.,

(2019)'s focus on early childhood discipline, Speyer et al., (2022)'s work offers a more granular, temporally sensitive depiction of how harsh parenting and child behaviour unfold interactively during early development.

Beyond these broad trends, individual differences significantly moderate the impact of harsh parenting on emotion regulation. Meta-analyses and longitudinal research by Elgar et al., (2007) and Straus and Kantor (2005) highlight that child temperament, such as emotional reactivity and resilience, buffers or exacerbates the effects of harsh parenting. For example, children with more resilient temperaments may better withstand harsh discipline without developing emotion regulation difficulties, whereas those with vulnerable temperaments may be disproportionately harmed. This variability was not directly examined by McKinney et al., (2011) or Rajyaguru et al., (2019), which may explain some inconsistencies in their findings. These insights underscore the necessity of accounting for child-level factors in parenting practices and emotional outcomes.

An additional, less overt dimension of harsh parenting is emotional neglect or withdrawal, characterised by a lack of responsiveness to children's emotional needs. Although physical punishment and verbal aggression attract greater research attention, emotional neglect may exert equally severe consequences on emotion regulation. Cicchetti and Toth (2016) emphasise that withdrawn parenting disrupts the development of secure attachments and regulatory capacities, increasing risks for internalising disorders. Supporting this, Aunola and Nurmi (2005) used longitudinal panel data and path analyses to demonstrate that emotional neglect predicts later anxiety and depression symptoms. However, compared to the longitudinal and multi-informant designs of Rajyaguru et al., (2019) and Speyer et al., (2022), Aunola and Nurmi (2005)'s work was limited by potential confounders, highlighting a need for more rigorous studies to unpack withdrawal's unique contributions. The subtlety of

emotional neglect also complicates detection and intervention, raising questions about its prevalence and impact relative to more explicit forms of harsh parenting.

Methodological challenges recur across these studies. Many rely on parent or self-report questionnaires, raising concerns about bias and common method variance (Cicchetti & Toth, 2016). While McKinney et al., (2011) and Speyer et al., (2022) use advanced statistical techniques such as SEM and CLPMs to better parse causal directions, much of the literature remains cross-sectional or retrospective, limiting inferences about developmental trajectories. Additionally, the age ranges and informants vary considerably from young children's mothers in Speyer et al., (2022) to emerging adults' retrospective reports in McKinney et al., (2011), complicating direct comparisons. Notably, few studies examine paternal roles explicitly, nor do they typically focus on neurodivergent populations such as children with ADHD, who may experience distinctive vulnerabilities or require tailored parenting approaches.

In summary, the evidence robustly links harsh parenting to difficulties in emotion regulation and behavioural problems. However, the nature of these effects depends on specific parenting behaviours, child temperament, gender dynamics, and developmental stages. The literature also reveals a critical gap regarding the role of withdrawn parenting and the need for longitudinal, multi-informant research that captures the transactional and contextual complexity of harsh parenting. Addressing these gaps is particularly important for understanding vulnerable populations such as children with ADHD whose emotion dysregulation may interact differently with parenting practices. These considerations form the basis for the forthcoming empirical study (Study 2; Chapter 7) which will examine cross-national associations between parenting practices, ADHD symptoms, and emotion dysregulation/anger in the MCS and z-proso samples.

3.2.2 Withdrawn Parenting Practices

Withdrawn parenting, defined by emotional disengagement or unresponsiveness, occurs when parents fail to adequately attend to their child's emotional needs, often requiring children to manage their emotions independently. Rothbaum and Weisz (1994) conducted a meta-analysis of 47 studies examining parental caregiving and child externalising behaviours and found inconsistent associations, suggesting that emotional neglect may exert a substantial but sometimes overlooked influence on emotion regulation. This raises a critical question: are the detrimental effects of emotionally withdrawn parenting underestimated compared to the more overt harms of harsh practices such as physical punishment or verbal aggression?

Attachment theory (Bowlby, 1988) provides a foundational framework to understand these dynamics, proposing that early caregiving relationships are crucial for the development of emotion regulation capacities. Supporting this, Meins et al., (2002) conducted a longitudinal study of 120 children assessed at ages 3, 5, and 7 years and demonstrated that children raised in emotionally unresponsive environments exhibited poorer emotion regulation skills, due to the absence of necessary emotional guidance during distress. This aligns with Rothbaum and Weisz (1994) by emphasising that emotional neglect can disrupt core regulatory processes. However, socio-economic factors may also contribute to these emotional difficulties, complicating the distinction between withdrawn parenting and external contextual influences. This complexity highlights a gap in the literature calling for nuanced models that integrate multiple intersecting factors impacting emotional development.

Frosch et al., (2021) expanded on these findings using a multi-method approach involving 100 parent-child dyads, combining teacher reports with standardised emotion regulation tasks. They found that emotionally neglected children who developed strong

relationships with peers or extended family exhibited better emotion regulation than those lacking such secondary attachments. This suggests that while the parent-child relationship is central, alternative emotional support can foster resilience in children facing parental withdrawal. Yet, this notion is challenged by Sroufe et al., (2005), whose longitudinal study of 250 children demonstrated that even strong secondary relationships cannot fully compensate for the absence of emotional responsiveness from primary caregivers. This contrast highlights the irreplaceable role of consistent parental engagement in emotional development and calls into question the extent to which external relationships can buffer the effects of withdrawal.

The impact of withdrawn parenting also appears influenced by broader socio-economic conditions. Sroufe et al., (2005) in a sample of 300 families controlled for socio-economic factors and argued that parental emotional unavailability may often stem from external stressors such as poverty, mental health issues, or substance abuse rather than intentional neglect. While this positions socio-economic pressures as critical contributors, the extent to which these factors mitigate parental responsibility remains contested. Nevertheless, research by Meins et al., (2002) and Sroufe et al., (2005) converge on the view that, regardless of contextual challenges, parents bear significant responsibility for providing emotional support essential for healthy emotional development. This tension highlights a key debate in the field of balancing empathy with socio-economic adversity, whilst holding parents accountable for children's emotional needs.

Further insights emerge when considering the broader family environment's role in moderating the effects of withdrawn parenting. Studies such as those by Aunola and Nurmi (2005), Cummings et al., (2000), and Hastings et al., (2019) illustrate that family dynamics can either exacerbate or buffer the impact of emotional neglect. For example, in Cummings

et al., (2000) study (n = 150 families), high parental conflict and parental mental health difficulties were linked to greater emotion regulation problems in children, suggesting that emotionally withdrawn parenting compounded by familial discord worsens child outcomes. Conversely, Hastings et al., (2019) examined 250 children exposed to withdrawn parenting but in emotionally supportive, low-conflict environments and found comparatively better emotional adjustment, indicating that positive family dynamics can mitigate some of the harms of parental withdrawal. This perspective is extended by Smrtnik Vitulić et al., (2022), whose study of 200 Slovenian families demonstrated that grandparental involvement provided emotional stability and effective modelling of regulation strategies. This highlights the importance of a holistic family systems approach rather than isolating parenting practices in understanding emotional development.

Recent perspectives challenge traditional conceptualisations of emotional withdrawal. Saxbe (2024) suggests that what is sometimes perceived as 'ignoring' children may, in certain contexts, promote resilience and autonomy by encouraging self-regulation rather than constant parental intervention. This reframing complicates the notion that all parental emotional disengagement is inherently harmful, underscoring the importance of the child's self-regulatory capacity and the broader emotional climate of the family. However, this optimistic view contrasts with the evidence from Aunola and Nurmi (2005) documenting heightened emotional reactivity, anxiety, and social difficulties associated with emotional neglect, emphasising that these potential benefits may depend heavily on individual child characteristics and contextual supports.

Cross-national studies reinforce the generalisability of withdrawn parenting's negative outcomes while also revealing variability shaped by socio-economic and cultural contexts. For instance, Burgess et al., (2005) in a study of 150 Canadian children found that emotional

unavailability in low-income households correlated with poor emotion regulation and externalising behaviours. Similarly, McLoyd et al., (2016) observed in 200 single-parent American households that emotionally withdrawn parenting predicted emotion dysregulation. In Switzerland, Carpendale et al., (2015) studied 120 children from socio-economically unequal regions and linked emotional neglect to higher anxiety and lower self-esteem. These findings collectively suggest that while the core consequences of withdrawn parenting, emotion regulation difficulties and associated behavioural problems, are consistent across contexts, socio-economic and cultural factors influence the severity and expression of these effects (Chao, 1994; Lansford et al., 2005).

Overall, this body of research highlights that withdrawn parenting poses significant risks to children's emotional development, but that its impact is intricately shaped by family dynamics, socio-economic pressures, and alternative support systems. The field currently faces important gaps, particularly in distinguishing the effects of emotional neglect from broader contextual factors and understanding the conditions under which secondary supports can buffer these harms. The following section will examine conceptualisations of parenting practices in the UK and Switzerland, providing a comparative perspective on cross-national and socio-economic influences.

3.3 Conceptualisations of Parenting Practices in Switzerland and the UK

Switzerland

Switzerland presents a compelling context for studying parenting practices, given its economic stability, comprehensive social welfare systems, and linguistic-cultural diversity. These features create a relatively supportive environment for families, yet research suggests

that disparities persist in how parenting is experienced across different socio-economic groups. For instance, Egger et al., (2015) conducted interviews with 39 educators and found a consensus on the importance of parental involvement. However, they also noted variability in how families engaged with schools, particularly along socio-economic and cultural lines. The study's reliance on teacher perspectives, though informative, limits its insight into parents' actual behaviours and introduces potential bias.

Research into immigrant populations further complicates the Swiss parenting landscape. Fibbi and Truong (2015), using a sample of approximately 150 Kosovar families living in Switzerland, revealed how cultural integration significantly influenced parenting styles, particularly in how parents responded to institutional expectations and norms. Makarova and Herzog (2015) added that traditional gender roles within families could foster both harsh and withdrawn parenting practices, illustrating that even in high-income contexts, patriarchal family structures may contribute to emotionally disengaged caregiving. These findings suggest that cultural background remains a salient factor in shaping how parenting is enacted, particularly among minority and migrant groups.

Importantly, these cultural influences may also contribute towards the persistence of harsh parenting practices, even within a context of affluence. Naudin et al., (2023), drawing on data from Swiss, Togolese, and Cameroonian families ($n \approx 100$ per country), found that physical punishment persisted in some Swiss communities, especially those influenced by external cultural norms. Their inclusion of Swiss families in a cross-national comparison demonstrates that wealth alone does not eliminate coercive parenting strategies. This concern is echoed in Stülb et al., (2019), who analysed longitudinal data from over 500 preschool children and found that early parenting behaviours had lasting effects on children's emotional and behavioural outcomes. While these studies collectively support the notion that

Switzerland's structural supports can buffer against some risks, they also underscore that neither affluence nor social policy can fully counteract the influence of cultural norms or individual family stressors.

UK

In contrast, parenting research in the UK, though expanding, remains less developed in terms of longitudinal depth and focus on withdrawn parenting. The UK's socio-cultural diversity offers a rich terrain for exploring how ethnicity, socio-economic status, and public health policy interact to shape child-rearing practices. Maynard and Harding (2010), analysing data from nearly 4,000 ethnically diverse adolescents, found significant associations between perceived suboptimal parenting and poor psychological wellbeing. However, the cross-sectional design limits inferences about causality, particularly in determining whether parenting style precedes psychological difficulties or vice versa.

A broader perspective is offered by Jago et al., (2011), who examined over 600 children aged 10 to 11, exploring how parenting styles related to physical activity and general health behaviours. Their findings reinforce the critical role of parental engagement in daily routines and align with Maynard and Harding's (2010) conclusions about the long-term risks of disengaged parenting. Yet, while both studies highlight the importance of warmth and involvement, they differ in focus: the former targets psychological wellbeing, while the latter emphasises physical and behavioural health. Taken together, these findings indicate that parenting practices influence multiple domains of child development, but the field remains hindered by a reliance on cross-sectional and self-reported data.

Compared to research in Switzerland, the UK lacks comprehensive longitudinal studies specifically addressing the developmental consequences of harsh and withdrawn

parenting across diverse populations. This scarcity makes it difficult to trace the evolution of parenting practices or fully understand their cumulative impact on children's emotional development. Furthermore, while Swiss research has begun to explore the cultural persistence of harsh discipline, equivalent UK studies remain limited in their investigation of how parenting practices vary within minority ethnic communities beyond surface-level comparisons. This represents a critical gap in understanding how parenting intersects with cultural identity and systemic inequality.

Comparative Reflections

Across both UK and Swiss studies, parental responsiveness consistently emerges as a protective factor in children's emotional development. Egger et al., (2015) in Switzerland and Maynard and Harding (2010) in the UK both reported that increased parental involvement supports better emotional and behavioural outcomes. However, while Egger et al., (2015) drew on teacher interviews, Maynard and Harding (2010) relied on adolescent self-reports, reflecting differing sources of potential bias. These methodological differences limit direct comparisons but underscore a shared conclusion that emotionally engaged parenting fosters better emotion regulation.

Swiss research more frequently examines the cultural and structural context of parenting. Fibbi and Truong (2015) and Makarova and Herzog (2015) highlighted how immigrant status and traditional gender roles shaped both harsh and withdrawn parenting practices. In contrast, UK studies such as Jago et al., (2011) and Maynard and Harding (2010) included ethnically diverse samples but rarely explored cultural influences explicitly, which would better contextualise findings within specific family environments.

A further point of contrast lies in the depth of longitudinal evidence. Swiss studies, such as Stülb et al., (2019), tracked early parenting behaviours and their effects across time, strengthening causal interpretations. Meanwhile, most UK studies rely on cross-sectional designs, limiting insight into developmental trajectories. Additionally, while both contexts document the harmful effects of harsh and withdrawn parenting, Swiss studies such as Naudin et al., (2023) have begun to explore their persistence even within high-income welfare systems, a topic less developed in the UK literature.

Although research has identified consistent associations between non-responsive parenting and poor child outcomes, limitations remain. Many studies are constrained by self-report data and lack direct measurement of emotion regulation. Few investigate the interaction between parenting style and neurodevelopmental disorders, such as ADHD. These gaps underscore the need for longitudinal, cross-national research that directly examines how parenting practices influence emotion regulation, particularly in neurodivergent populations. The following subsection will address contemporary challenges that complicate research in this evolving field.

3.4 Challenges in Contemporary Parenting Practices Research

A key challenge within contemporary parenting research is elucidating the complex interplay between parental wellbeing and parenting behaviours, and how this dyad impacts child developmental outcomes. The literature consistently identifies parental mental health difficulties, such as depression, anxiety, and chronic stress, as significant predictors of maladaptive parenting practices, including heightened harshness and emotional withdrawal (Roskam et al., 2023). These adverse parenting behaviours compromise the provision of

consistent support and co-regulation essential for the development of children's emotion regulation and social competence. For instance, Vally and El Hichami (2020) investigated parenting knowledge and disciplinary practices within a diverse sample of 203 parents from the USA. Their findings demonstrate a robust association between parenting knowledge and reduced use of dysfunctional discipline strategies. Notably, fathers exhibited significantly lower knowledge of child development compared to mothers, correlating with an increased reliance on punitive practices. This study's strengths include its relatively heterogeneous sample and nuanced examination of socio-cultural predictors such as parent gender, age, and ethnicity. However, its cross-sectional design precludes causal inference, and its USA-centric context may limit generalisability to differing cultural milieus, where access to parenting information and gender roles may diverge.

In a contrasting, yet complementary vein, Kuppens and Ceulemans (2019) utilised a large Flemish cohort of 600 families to explore joint parenting styles incorporating psychological control alongside traditional dimensions of support and behavioural control. Their cluster analyses revealed that authoritative parenting, characterised by high support and moderate control, was consistently associated with optimal child outcomes, while authoritarian and intrusive parenting styles were linked with poorer developmental trajectories. The study's inclusion of maternal and paternal practices in tandem offers a sophisticated approach to examining family-level dynamics. Nonetheless, its focus on children aged eight to ten years restricts insights into early childhood, a critical period for emotion regulation development. Furthermore, the psychological control construct, while informative, remains under-theorised within the study's framework.

Socio-economic and structural determinants remain a pervasive influence in parenting research. Schindler Zimmerman (2003) and Ulferts (2020) emphasise that economic hardship,

limited healthcare access, and deficient social support exacerbate parental stress, thereby fostering reactive or disengaged parenting styles detrimental to child development. These contributions underscore the imperative to situate parenting within broader social and economic contexts. Yet, empirical research integrating these macro-level factors with micro-level parenting behaviours is scant, pointing to a significant gap.

Schoppe-Sullivan and Fagan (2020) provide a critical overview of how diverse family structures and cultural contexts complicate the relationship between parental wellbeing and parenting efficacy. Their review highlights that non-residential, single, and culturally diverse parents encounter unique stressors impacting parenting quality. Notably, the authors argue for increased scholarly attention to fathers' mental health, which remains understudied despite its evident influence. While this work advances theoretical understanding, the empirical literature still lacks longitudinal, intersectional studies that capture the dynamic and heterogeneous realities of contemporary families.

In sum, contemporary research underscores the multifaceted challenges in disentangling how parental wellbeing influences parenting behaviours within diverse and dynamic family contexts. While existing studies highlight the detrimental effects of parental stress and mental health difficulties on parenting quality, they also reveal critical gaps, particularly in longitudinal insight, cultural diversity, and the nuanced roles of fathers and family structure. These limitations constrain a full understanding of the mechanisms linking parental wellbeing to child development. The following section will delve deeper into how specific parenting practices relate to children's emotion dysregulation, further unpacking this complex interplay.

3.5 Parenting Practices and Emotion Dysregulation

Despite considerable research linking parenting practices to emotion dysregulation, broadly defined as the difficulties in effectively monitoring, evaluating, and modulating emotional responses (Thompson, 1994), several conceptual and methodological challenges remain. One key limitation is the oversimplified dichotomy of harsh versus withdrawn parenting, which neglects the complexity of parenting behaviours within specific socio-cultural contexts. For example, Davidov et al., (2012) demonstrated that maternal knowledge about children's evaluations of discipline varies according to the type of discipline and nature of the misdeed. Mothers adopting authoritative parenting showed greater accuracy in anticipating children's responses, especially when employing strategies that acknowledged feelings, whereas authoritarian and permissive styles were linked to distorted perceptions of discipline effects. This underscores that parenting practices' impact depends on parents' understanding and children's interpretations.

A second critical issue concerns over-involved parenting styles, notably helicopter and tiger parenting, which Zhang & Wang (2024) have recently examined in relation to anxiety and depressive symptoms in children. Their study found that helicopter parenting, characterised by intrusive control and excessive monitoring, can undermine children's development of inhibitory control, thereby increasing vulnerability to anxiety and depression. Tiger parenting, often marked by high expectations and strict discipline, also showed nuanced effects depending on the child's regulatory capacity. This research challenges the assumption that more parental involvement necessarily supports better emotional outcomes, highlighting how excessive control may paradoxically hinder children's autonomous emotion regulation.

These findings call for a balanced approach where parents provide emotional support and clear expectations without adopting controlling behaviours that impede self-regulation.

Methodologically, much of the literature relies on cross-sectional data and parent-report measures, which limit causal inference and may be biased by parental perceptions. Florean et al., (2023) critically evaluated the measurement invariance of the widely used *Alabama Parenting Questionnaire* (APQ) across different ages, genders, clinical statuses, and informants (parents versus children). Their findings revealed that parenting constructs measured by the APQ do not consistently reflect the same underlying dimensions across these groups. Notably, discrepancies between parent and child reports indicate differing perceptions of parenting behaviours, which may be even more pronounced in neurodevelopmental conditions like ADHD, where children's emotional and behavioural profiles complicate standard measurement. Florean et al., (2023) highlight the importance of developing psychometrically robust, culturally sensitive tools that can reliably capture parenting practices and their impact on emotion regulation across diverse populations.

Together, these studies highlight three interrelated challenges: first, the pivotal role of parental knowledge and its distortion in shaping discipline and emotional outcomes; second, the paradoxical effects of over-involved parenting styles, which may exacerbate rather than mitigate emotional difficulties; and third, the methodological necessity of longitudinal, multi-informant, and culturally sensitive designs to capture the evolving dynamics of parenting and emotion regulation. Addressing these gaps, this thesis will reconceptualise emotion dysregulation in middle childhood as a developmental process influenced by ADHD symptoms, parenting practices, and socio-cultural contexts.

3.6 Summary and Concluding Thoughts

This chapter has provided a comprehensive analysis of the complex relationship between parenting practices and child development, with a particular focus on emotional wellbeing during middle childhood. Central to this discussion is the distinction between positive and negative parenting approaches, as well as the roles of harsh and withdrawn parenting, in shaping emotion dysregulation in children, including those with ADHD. By integrating findings from diverse studies, this chapter underscored the importance of supportive discipline strategies that promote children's self-regulation and emotional resilience, rather than inadvertently intensifying behavioural difficulties.

The chapter examined how harsh parenting practices, characterised by verbal aggression and inconsistent discipline, are strongly associated with heightened emotional reactivity and externalising behaviours. Conversely, withdrawn parenting, marked by emotional neglect or detachment, relates more closely to internalising problems such as anxiety and depression. However, these broad categories often oversimplify parenting behaviours that vary significantly across socio-cultural and economic contexts. For example, parenting strategies may take different adaptive or maladaptive forms depending on cultural norms and external stressors such as poverty or systemic inequalities.

A cross-national lens was applied to explore parenting norms in Swiss and British contexts, revealing how societal values, social policies, and gender roles distinctly shape caregiving practices. The analysis highlighted that caregiving is embedded in a broader socio-cultural system, where parental stress and gendered caregiving roles influence the quality and style of parenting. These insights are critical for understanding how parenting contributes to

emotion regulation and dysregulation, especially for children with neurodevelopmental challenges like ADHD.

The chapter also discussed contemporary challenges in parenting research, including the complexity introduced by over-involved parenting styles such as helicopter and tiger parenting, which may paradoxically hinder children's development of autonomous emotional control. Furthermore, methodological challenges were addressed, noting that many existing studies rely heavily on cross-sectional designs and parent-report measures, limiting causal inferences and potentially introducing bias. Studies like Florean et al., (2023) emphasised the need for culturally sensitive, psychometrically sound instruments and multi-informant, longitudinal approaches to accurately capture the evolving parent-child dynamics.

Crucially, the bidirectional nature of the relationship between parenting and emotion dysregulation was highlighted, showing that children's emotional difficulties can influence parenting behaviours just as much as parenting influences child outcomes. This reciprocal process requires nuanced research frameworks that consider parental knowledge, emotional availability, and the broader socio-cultural environment. Building on these insights, Study 2 (Chapter 7) of this thesis aims to address a significant gap by comparing parenting practices and their impact on ADHD-related emotion dysregulation in the UK and Zurich. This cross-national comparison will examine how systemic factors shape parenting responses and emotional development, offering vital perspectives for culturally tailored interventions. As the thesis progresses, Chapter 4 will focus in depth on emotion dysregulation itself, exploring foundational theories, key models, and measurement challenges, particularly within the context of ADHD and parenting. This will set the stage for further empirical investigation of how ADHD symptoms, parenting practices, and emotion dysregulation intersect to influence child development.

Chapter 4

The Emotional Blueprint - Foundations for Middle Childhood

4.1 Introduction

This chapter constitutes the final strand of the literature review and extends the groundwork laid in Chapters 2 and 3, shifting focus to emotion dysregulation, a central theme in this thesis. Drawing on both foundational and contemporary psychological theories, the chapter begins by discussing how emotions are conceptualised, expressed, and measured in developmental contexts. The chapter then turns to emotion dysregulation, tracing its evolving conceptualisations and measurement tools across psychological subfields, while highlighting the ongoing lack of clarity in the literature. Next, competing theoretical perspectives are reviewed in the context of children with neurodevelopmental disorders. Finally, there will be a focus on middle childhood and how coping mechanisms develop during this stage, before examining the intersections of ADHD, parenting practices, and emotion dysregulation, highlighting relevant cross-sectional and longitudinal studies.

4.2 Emotions

"*Emotions: disturbance of the mind, vehemence of passion"* - (Congleton, 1955).

Congleton's (1955) early definition of emotions as a "disturbance of the mind" captures the intensity and turmoil often associated with emotional experiences. However, as emotional research has evolved, so too has the understanding of these experiences, moving away from simplistic definitions. While Congleton's conceptualisation speaks to the fervour and intensity of emotions,

contemporary research has shifted towards a more nuanced view that recognises emotions as multifaceted and intricately linked to various internal and external factors. This shift is largely due to the increasing realisation that emotions are not merely a form of mental disturbance, but rather complex phenomena that can be both adaptive and disruptive. The early assumption that emotions are purely biological reactions to stimuli has given way to a broader, more contextual understanding that considers cognitive, social, and developmental influences. Therefore, the question arises: how far should researchers continue to lean on these early models that emphasise emotional intensity, or is it necessary to engage more fully with the dynamic interplay between cognitive, social, and neurobiological processes that define emotion? This debate reflects the fundamental challenge of emotion research: defining and conceptualising an experience that is inherently subjective, dynamic, and context dependent.

The difficulty in defining emotion arises in part from the vast array of phenomena it encompasses. Despite the ubiquity of the term, scholars still struggle to delineate precise definitions that capture the diversity of emotional experiences. Emotions are often conflated with related concepts such as mood, affect, or feeling, yet each of these terms carries different implications. While mood is generally understood as a prolonged, low-intensity emotional state, emotions are typically viewed as brief, high-intensity reactions to specific events or stimuli (Gross, 2015a). This distinction is crucial for understanding the temporal and functional differences between these states. However, empirical research does not always draw this distinction consistently, leading to confusion and ambiguity in both theoretical and practical contexts. For example, clinical diagnoses often categorise chronic emotional states such as sadness or irritability as mood disorders, as they are typically persistent and less clearly tied to specific triggers (APA, 2013). However, these states may also exhibit features of intense emotional reactions, such as those seen in depressive or anxiety disorders, where individuals experience emotional intensity

that blurs the line between mood and emotion (Kring & Sloan, 2009). This overlap suggests that the boundaries between mood and emotion are not always distinct and highlights the challenges clinicians face in differentiating between long-lasting emotional states and those that are more situationally bound. The challenge here lies in how to accurately measure and operationalise these constructs, especially in the context of mental health where emotions and moods are often intertwined. Gross (2015a) posits that emotions are typically situationally bound, meaning they arise in direct response to an external event, whereas moods are less linked to specific triggers. However, such distinctions remain contested in real-world applications, as individuals may experience moods that are directly linked to external events (e.g., prolonged sadness following a traumatic event) or emotions that linger over time (e.g., anxiety that persists long after an initial trigger). As a result, the operationalisation of these emotional states is an ongoing challenge in both clinical and research settings.

Further complicating this issue is the debate between structuralist and functionalist theories of emotion. Structuralist approaches, such as those proposed by Campos et al., (1994), argue that emotions are biologically hardwired and universal. Structuralist models aim to identify discrete, basic emotions, each of which corresponds to specific physiological or neurological markers (Ekman, 1992). These models have been instrumental in identifying core emotional responses, particularly through the study of facial expressions and autonomic responses. For instance, the ‘basic emotions’ theory proposes that emotions like fear, anger, and happiness are universal across cultures, each associated with a characteristic set of facial expressions and physiological changes (Ekman, 1992). While this approach has been foundational in emotional research, it has been critiqued for its reductionist focus on the biological underpinnings of emotion, often neglecting the role of cognitive processes, social context, and individual experience (Barbalet, 2002). For example, the physiological response

to fear, such as increased heart rate or sweaty palms, can occur in response to a wide range of stimuli, from a physical threat to an exciting opportunity, suggesting that the physiological experience of emotion cannot be fully understood without considering the cognitive appraisal of the situation (Lazarus, 1991). Moreover, structuralist models often fail to account for the cultural and social variability in emotional expression and experience. As such, while structuralist models provide valuable insights into the biological foundations of emotion, they tend to oversimplify the complexity of emotional phenomena by overlooking the ways in which emotions are shaped by context, culture, and individual experiences.

In contrast, functionalist theories offer a broader, more contextual understanding of emotions. These theories argue that emotions serve adaptive functions by preparing individuals to respond to environmental challenges. According to Izard and Buechler (1979), emotions are goal-directed responses that have evolved to help individuals navigate survival-relevant situations. Fear, for example, mobilises the body for 'fight-or-flight' responses, while joy encourages social bonding. These adaptive functions are central to the functionalist perspective, which posits that emotions have evolved to support survival and social cohesion (Nesse, 1990). However, while functionalist theories have made important contributions to understanding the evolutionary significance of emotions, they too have limitations. By focusing on the adaptive nature of emotional responses, functionalism risks oversimplifying emotions as mere problem-solving mechanisms, neglecting the complex, subjective experiences that accompany emotional states (Barbalet, 2002). For instance, while fear may prepare an individual to avoid danger, the subjective experience of fear, its intensity, duration, and associated thoughts, varies greatly depending on the individual's cognitive interpretation of the situation (Lazarus, 1991). Furthermore, the focus on universal adaptive functions often overlooks the variability in emotional expression and experience across cultures. For example,

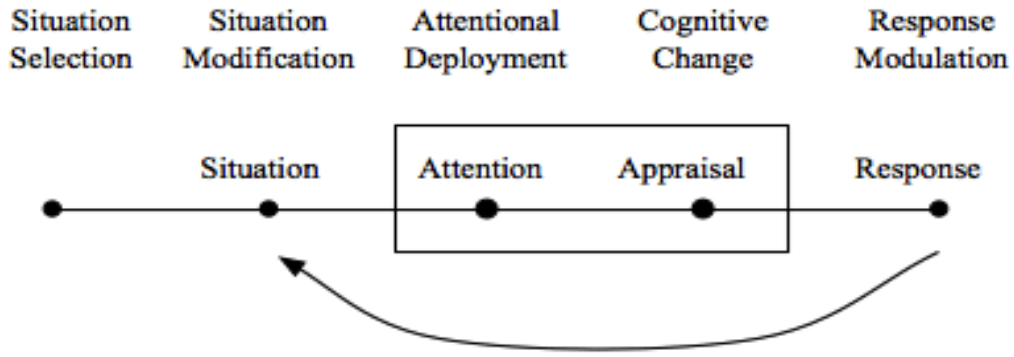
in some cultures, expressing anger may be seen as a sign of strength, while in others, it may be viewed as a disruptive emotion that must be suppressed (Matsumoto, 2006). Thus, functionalist theories, while emphasising the adaptive nature of emotions, may fall short in capturing the full range of emotional experiences that are shaped by social and cultural contexts.

Barbalet (2002) provides a critical sociological perspective that challenges both structuralist and functionalist approaches by emphasising the role of social and cultural factors in shaping emotions. According to Barbalet (2002), emotions are not merely biological responses to stimuli but are embedded in social interactions and cultural norms. For instance, emotional expressions such as sadness or anger can have different meanings and social implications depending on the cultural values and social norms governing emotional expression. This perspective highlights the need for a more integrative approach that considers both the biological and social dimensions of emotion. While Barbalet's (2002) emphasis on the social construction of emotions adds an essential layer of complexity to emotion theory, it also raises important questions about how to balance biological and social factors in understanding emotional processes. For example, how do researchers account for individual variability in emotional experience, even within a shared cultural context? Moreover, how do social norms around emotional expression influence the subjective experience of emotions? These questions point to the need for models of emotion that are both biologically informed and sensitive to the socio-cultural influences that shape emotional experiences.

To further conceptualise the emergence and unfolding of emotions, Gross and Thompson (2007) introduced the modal model of emotion (see Figure 4.1). This model posits that emotions develop through a series of interconnected stages, each of which can be influenced by both intrinsic and extrinsic factors. These stages are as follows:

1. Situation - An event occurs (either external, such as a social interaction, or internal, such as a memory).
2. Attention - The individual directs attention towards certain aspects of the situation.
3. Appraisal - The event is evaluated based on its relevance, valence, and familiarity (Kring & Sloan, 2009).
4. Response - The appraisal triggers an emotional reaction, which may involve changes in physiology, behaviour, and subjective experience.

Figure 4.1. *Modal Model of Emotion (Gross & Thompson, 2007, p.5).*



While the modal model has been influential in illustrating how emotions are dynamic and subject to regulation, it has also faced criticism for oversimplifying the reality of emotional processing. One central concern is its tendency to present a linear, step-by-step progression, which does not fully capture how emotions unfold in real life. Emotional experiences are often nonlinear, fluid, and recursive, with stages that are far less distinct than the model suggests. In practice, emotions evolve through multiple cycles of appraisal and

reappraisal, shaped by cognitive, social, and environmental influences. An initial emotional reaction may intensify through subsequent reflections or social feedback, or diminish as the individual revises their interpretation of the situation. For instance, Beauregard et al., (2006) note that individuals may respond emotionally before fully appraising an event, or may repeatedly reinterpret it, resulting in fluctuating emotional states. Someone might initially feel fear in a stressful situation, later reappraising it as an opportunity for growth and shifting the emotional experience from fear to excitement. This recursive, multifaceted process challenges the more static and linear conceptualisation proposed by Gross and Thompson (2007), underscoring the need for models of emotion regulation that more accurately reflect the complexity of ongoing interactions between individuals and their environments.

Additionally, this dynamic perspective on emotions calls into question the universality of emotion models, including the modal model, which assumes that emotional responses progress in a relatively uniform and predictable manner across individuals. While the modal model posits that all individuals experience emotions in a similar way, the reality is far more nuanced. As Barbalet (2002) contends, emotions are not merely internal states but are intricately linked to individuals' dispositional and social engagement with the world. The pace and trajectory of emotional responses are highly influenced by individual differences, such as cognitive processing styles, personal histories, and socio-cultural contexts. For example, individuals from different cultural backgrounds may appraise and respond to the same emotional stimuli in markedly different ways, influenced by cultural norms, values, and expectations regarding emotional expression (Anderson et al., 2017; Barbalet, 2002). Moreover, cognitive styles, such as whether an individual tends to ruminate or engage in positive reappraisal, may further influence the trajectory of emotional responses, as noted by Kross and Ayduk (2011). These factors underscore the importance of considering both the

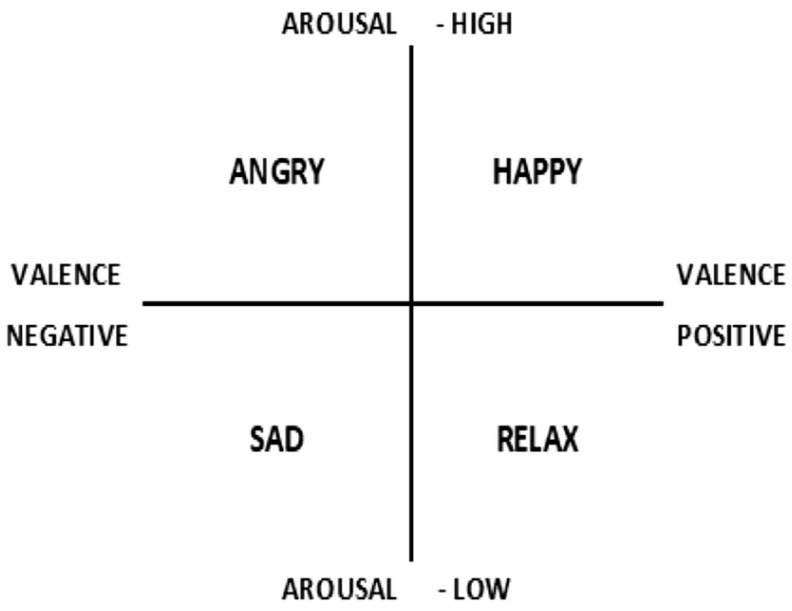
universal and individual-specific aspects of emotional experience when developing more nuanced models of emotion regulation.

Therefore, the assumption that emotional responses follow a uniform path across all individuals is increasingly being questioned. This necessitates a broader, more inclusive framework for understanding emotional processing - one that acknowledges the general principles of emotional functioning while also accounting for the diverse ways in which individuals experience, express, and regulate their emotions. Future models must recognise the complexity of emotion regulation and its individualised nature, moving beyond universalist approaches to embrace a more personalised understanding of emotional experiences. These models must also consider how emotions are shaped not only by individual factors such as genetics and cognition, but also by the broader socio-cultural environment in which they are embedded.

A key challenge in emotion research is the difficulty in differentiating between related emotional states. Unidimensional models, such as the valence-arousal model (see Figure 4.2), attempt to classify emotions along two primary dimensions: valence (pleasantness or unpleasantness) and arousal (activation level). The valence-arousal model proposes the following categories:

- Positive valence, high arousal: Joy, excitement
- Positive valence, low arousal: Contentment, relaxation
- Negative valence, high arousal: Anger, fear
- Negative valence, low arousal: Sadness, fatigue

Figure 4.2. *Valence Arousal Model of Emotion (Kron et al., 2015).*



While the valence-arousal model of emotion has been instrumental in research on affective neuroscience and emotion classification (Day et al., 2024), it has faced significant criticism for its oversimplification of emotional experiences. By reducing emotions to a simple dichotomy of positive versus negative and high versus low arousal, the model fails to capture the multifaceted nature of emotional experiences. For example, emotions like nostalgia or awe, often cited in the literature as complex or mixed emotions, do not fit neatly into the discrete categories of the valence-arousal model. These emotions embody both positive and negative elements simultaneously, highlighting a key limitation of the model's binary structure. Nostalgia, for instance, may evoke feelings of warmth and happiness when reminiscing about the past, yet it can simultaneously stir sorrow and longing for lost moments, illustrating the complexity of emotional experience that cannot be fully captured by a simple positive-negative dichotomy (Ford et al., 2019). Similarly, awe can evoke both wonder and fear, as individuals may feel overwhelmed by the vastness of an experience or environment

yet still find it inspiring (Keltner & Haidt, 2003). These mixed emotions illustrate the inherent complexity of affective responses that cannot be reduced to a single dimension of emotional valence and arousal, thus challenging the premises of models that treat emotions as discrete, oppositional entities (Kross & Ayduk, 2011). Such complexities suggest the need for frameworks that account for the dynamic and fluid nature of emotional experiences, rather than rigid classifications based solely on valence and arousal.

Moreover, the valence-arousal model overlooks the contextual and fluid nature of emotional responses. As Corbisiero et al., (2013) demonstrate, emotional reactions are not fixed but vary depending on the individual's personal history, cognitive appraisals, and the situational context in which they occur. For instance, an unexpected school presentation might make one child feel excited, while another might feel nervous, even though both are facing the same situation. This divergence highlights that emotions are not merely a reflection of an event's intrinsic qualities but are shaped by individual differences in how the event is appraised. Emotions thus cannot be understood in isolation from their broader context, including an individual's past experiences, mental state, and immediate social environment. This critique underscores the limitations of the valence-arousal model's static, one-dimensional approach, which fails to accommodate the variability and dynamism inherent in emotional experiences. As emotions are contextual and influenced by various situational factors, a model that disregards this fluidity is unlikely to capture the full range of human emotional experiences.

To address these limitations, Schachter and Singer's (1962) two-factor theory of emotion offers a more flexible framework that incorporates both physiological arousal and cognitive appraisal. This model acknowledges that emotions arise not merely from automatic, biological responses, but through the interpretation and evaluation of physiological states in a

given context. For instance, increased heart rate in response to a stressful event might be interpreted as anxiety, but the same physiological arousal could be experienced as excitement if the event is framed positively. This theory thus introduces a greater degree of flexibility into our understanding of emotional responses, suggesting that the way individuals interpret physiological changes plays a critical role in shaping their emotional experiences (D'Agostino et al., 2017). However, while this theory accounts for the role of cognitive appraisal in emotional responses, it also raises important questions about the level of control individuals have over their emotional interpretations. In particular, individuals with high levels of emotion dysregulation, such as those with mood or anxiety disorders, may struggle to engage in effective cognitive reappraisal, leading to persistent emotional distress despite awareness of alternative interpretations (Kross & Ayduk, 2011). This gap suggests that the two-factor theory's reliance on cognitive processes may not fully capture the complexities of emotional experiences for all individuals, especially those with impaired emotion regulation.

Moreover, the theory's emphasis on cognitive appraisal also brings attention to the challenge of regulating emotional responses in the face of overwhelming physiological arousal. In individuals with disorders including ADHD or anxiety, the intensity of physiological responses may undermine their ability to engage in effective cognitive reappraisal (Kross & Ayduk, 2011). For example, high levels of physiological arousal in response to perceived stress may hinder the ability to reframe the emotional experience, leading to a dysregulated emotional state. In these cases, emotions may be more driven by automatic, unconscious physiological processes than by conscious cognitive interpretation, suggesting that emotion regulation models must incorporate both cognitive and physiological dimensions. This integrative approach is essential for understanding emotion regulation

difficulties in clinical populations, as it highlights the need for interventions that address both cognitive reappraisal and the physiological underpinnings of emotional responses.

The need for an integrative approach that combines cognitive, physiological, social, and environmental perspectives in emotion research is increasingly apparent. Cole et al., (2017) argue that understanding emotion regulation requires a holistic framework that transcends cognitive processes alone and incorporates broader social, cultural, and environmental factors. This perspective acknowledges that emotions are not solely regulated by conscious reappraisal, but are also shaped by ingrained physiological responses, interpersonal dynamics, and societal norms. By considering these multiple dimensions, researchers can gain a more comprehensive understanding of how individuals regulate their emotions and how these processes might differ across diverse populations, contexts, and experiences. The next section will explore the regulation of emotions, with a focus on key models, providing a framework for understanding emotion dysregulation and its impact on mental health outcomes.

4.3 Emotion Regulation

Emotion regulation (ER) has traditionally been conceptualised as the capacity to modulate emotional experiences and expressions to align with internal goals or external demands (Gross, 1998). However, this neutral definition masks significant conceptual issues. While early theories privileged conscious, effortful control over emotions, this perspective now appears overly narrow. Contemporary research reveals ER as a complex, multidimensional process shaped by individual cognitive capacities, social interactions, cultural norms, and developmental trajectories (Lincoln et al., 2022). The assumption that ER is solely volitional or intrapsychic is increasingly challenged.

ER is now seen as both internally and externally driven, shaped by the relational and ecological contexts in which emotions emerge. This section critically examines dominant ER models, tracing their evolution and evaluating emerging empirical and theoretical critiques.

Gross's (1998) process model of ER remains one of the most influential and widely applied frameworks in the field, offering a temporal-sequential account of how individuals manage their emotional responses. This model differentiates between antecedent-focused strategies, such as cognitive reappraisal, which alters the interpretation of an emotional stimulus before it elicits a full affective response, and response-focused strategies, such as expressive suppression, which occur after the emotional response has already been initiated. This dichotomy, while elegant and empirically generative, has also been the subject of considerable critique. On one hand, it enabled a proliferation of empirical studies that consistently associate reappraisal with adaptive outcomes and suppression with increased physiological stress, lower wellbeing, and impaired interpersonal functioning (Ford & Gross, 2018). On the other hand, the model's binary framing has been criticised for oversimplifying the recursive, situational, and socially embedded nature of emotion regulation in real-world contexts. A key limitation of the original model is its reliance on a cognitive-control paradigm that privileges deliberate, top-down processing. This is especially problematic when applied to populations for whom such control is disrupted or underdeveloped. Children with neurodevelopmental disorders such as ADHD or ASD, for example, often experience rapid, intense emotional reactivity that outpaces their capacity for reflective modulation. Barnett et al., (2023), in a study examining intrinsic and extrinsic regulation in relation to pathological narcissism, underscore how dysregulated emotional profiles are not solely the result of strategy failure, but may reflect broader trait vulnerabilities or developmental delays in cognitive-affective integration. Similarly, Kross and Ayduk (2011) emphasise that individuals exposed to chronic stress or trauma may lack the attentional resources to effectively engage in

reappraisal. Whilst the process model provides a widely used framework for understanding emotion regulation; however, its emphasis on conscious strategy selection may be less applicable to individuals with certain neurobiological or psychosocial constraints. Nonetheless, the model remains valuable for conceptualising emotion regulation processes, and integrating developmental and contextual perspectives can complement its application to diverse populations.

Furthermore, the model's pathologisation of suppression as a uniformly maladaptive strategy has been called into question, particularly from cross-national and relational perspectives. In collectivist societies, suppression may function as a prosocial, affiliative behaviour that upholds social harmony (Cole et al., 2017). By emphasising emotional expressiveness and individual regulation, the model reflects values that are more characteristic of Western, individualistic contexts, which may not fully capture culturally diverse norms of emotion regulation. This critique resonates with broader concerns in the literature about the 'cultural invisibility' of dominant psychological frameworks, which often universalise findings derived from Western, Educated, Industrialised, Rich, and Democratic (WEIRD) samples without interrogating their embedded assumptions (De Leersnyder et al., 2015). These limitations not only raise epistemological concerns but also pose practical challenges: interventions derived from such models may be culturally misaligned and risk pathologising normative behaviours in non-Western contexts. Without a more inclusive conceptualisation of ER strategies, psychological theory risks perpetuating cultural bias and clinical misdiagnosis. As such, future models must move beyond monolithic assumptions and integrate culturally sensitive understandings of regulation to ensure relevance and equity in global psychological practice.

Gross's subsequent Extended Process Model (2015b) aimed to address some of these limitations by reimagining emotion regulation as a dynamic, cyclical, and context-sensitive process. Rather than positing a fixed sequence of regulation strategies, the extended model

emphasises regulatory flexibility, defined as the ability to select, implement, and adjust strategies in response to shifting situational demands. This model represents an important conceptual advance by recognising that individuals often draw on multiple strategies simultaneously or switch between them depending on feedback from the environment. Ford et al., (2019) lend empirical support to this perspective, highlighting that individuals engage in polyregulation, a form of strategy-switching that reflects adaptive responsiveness rather than inconsistency or instability. However, despite its theoretical evolution, the Extended Process Model remains heavily grounded in laboratory-based validation. Much of the evidence supporting regulatory flexibility derives from controlled experimental paradigms that fail to replicate the complexity of real-world emotional encounters. Beauregard et al., (2006), in a neuroimaging study of major depressive disorder, emphasised that artificial laboratory tasks often fail to capture the relational and contextual triggers that shape emotion regulation in everyday life. For children, adolescents, or individuals from marginalised backgrounds, emotion regulation occurs within dynamic interpersonal systems characterised by chronic stress, structural inequalities, and varying access to supportive co-regulators. By focusing predominantly on autonomy and intra-psychic regulation, the extended model may underrepresent the relational and contextual factors influencing regulatory development, highlighting the value of integrating systemic and environmental considerations alongside individual processes.

Another significant shortcoming of both models is their under-theorisation of developmental scaffolding and relational support in the acquisition of regulatory capacities. While both frameworks acknowledge that regulation evolves over time, they offer limited insight into how early experiences, particularly within family systems, facilitate or hinder the emergence of strategy use. Fenning et al., (2018), in a study of ER in children with ASD, found that individual differences in regulatory functioning were closely tied to both intrinsic child traits and extrinsic

caregiver behaviours. The study, which employed observational coding of parent-child interactions alongside physiological measures, showed that children's regulatory abilities were not static attributes but were co-constructed through interactions with responsive or dysregulated caregivers. This supports a view of emotion regulation as socially scaffolded, rather than solely self-governed. The failure of dominant models to integrate these relational dynamics reflects a broader bias toward individualistic, cognitively driven explanations of emotional development. By neglecting the role of caregivers, attachment, and the emotional climate of the home, such models risk obscuring the environmental constraints that shape regulatory potential, particularly in children facing adversity or neurodevelopmental challenges. As a result, these frameworks may emphasise individual regulatory difficulties, potentially underrepresenting the relational and contextual factors that contribute to children's emotion regulation challenges. Future theoretical work must centre the dyadic and systemic nature of emotional development to offer more accurate, compassionate, and developmentally informed understandings of ER across the lifespan.

Moreover, neither the Process nor Extended Process Models adequately incorporate the role of extrinsic emotion regulation: that is, the regulation of one's emotions via external agents such as parents or peers. This omission is especially salient in childhood, where self-regulatory systems are still developing, and extrinsic regulation plays a crucial ongoing role. Barnett et al., (2023) argue that extrinsic regulation should not be treated as a transient developmental phase but as a lifelong mechanism through which emotional stability is maintained in interdependent contexts. Similarly, Fenning et al., (2018) demonstrate that effective co-regulation from parents can buffer against emotion dysregulation in developmentally at-risk children, suggesting that a failure to include this component in emotion regulation models reflects not only a conceptual gap but a serious oversight with clinical implications. Finally, there is a pressing need to interrogate the normative and ethical assumptions embedded in emotion regulation theory. By valorising

cognitive reappraisal and pathologising suppression or emotional expression in certain contexts, dominant models can inadvertently endorse narrow definitions of psychological 'health' that do not account for cultural diversity, structural disadvantage, or neurodiversity. They also risk reifying a neoliberal ethos of emotional self-management, in which individuals are expected to independently regulate in the face of systemic barriers or developmental constraints. Without an explicit consideration of how race, class, culture, and neurodevelopmental status shape regulatory opportunities and strategies, these models may contribute to epistemological erasure rather than inclusive science. While Gross's process-oriented models have undoubtedly advanced theoretical clarity and empirical tractability in the study of emotion regulation, they require significant revision to fully capture the complexity of emotional functioning across developmental stages, social contexts, and neurodiverse populations. The next section will explore emotion dysregulation, with particular attention to conceptualisations and challenges with measurement.

4.4 Emotion Dysregulation

Challenges with Conceptualisations

Emotion dysregulation refers to the persistent difficulty in managing emotional responses, which may manifest either as excessive emotional reactions or the use of maladaptive, rigid strategies to modulate those emotions. Although Gratz and Roemer's (2004) positioned emotion dysregulation as a continuous trait, ranging from mild, everyday fluctuations in emotional responses to more profound and chronic difficulties, the conceptualisation and operationalisation of dysregulation have remained far from straightforward. A variety of theoretical models reflect this complexity, complicating research and clinical interventions, specifically in developmental stages including middle childhood. While a growing body of evidence links emotion dysregulation

to various mental health disorders, including ADHD and anxiety (Shaw et al., 2014), the lack of consensus on how dysregulation should be defined and measured undermines understanding of its developmental course and impact on mental health outcomes.

One of the most pressing issues in the emotion dysregulation literature is the fragmented nature of its conceptualisation. Researchers have proposed several distinct, yet overlapping, frameworks to define emotion dysregulation, contributing to significant conceptual confusion and hindering theoretical integration. A variety of interchangeable terms have been used to describe emotion dysregulation, including 'emotion lability', 'emotion impulsivity' and 'emotion instability', leading to issues in conceptualising the phenomenon (Faraone et al., 2019; Low et al., 2019). For example, emotion lability is defined as *unpredictable* shifts towards negative emotions such as sadness, dysphoria, and anger, with an intensity that is deemed culturally inappropriate to the situational context (Barkley, 2014). This highlights how emotional responses can be judged not only by their intensity but also by their social acceptability, suggesting that context plays a significant role in defining emotion dysregulation.

Several studies have suggested that emotion dysregulation can be defined as unpredictable shifts from having a normal mood to feelings of lowness or mild excitement, often accompanied by frequent brief outbursts and feelings of being overwhelmed (Anastopoulos et al., 2011; Barkley, 2014; Christiansen et al., 2019; Corbisiero et al., 2013). Yet, literature highlights differences, when accounting for factors associated with emotion dysregulation. For instance, Rogosch and Cicchetti (2005) suggested that emotion dysregulation is defined by affective negativity, irritability, lability, suicidal and self-harm behaviour, impulsivity, and extreme conflict, leading to struggles in interpersonal relationships with peers and adults. Furthermore, Cole and Hall (2008) presented a different type of conceptualisation, emphasising ineffective attempts at regulation, behavioural interferences due to emotions, and inappropriate expressions of emotions (e.g., humour).

Importantly, emotion dysregulation is used to describe contexts where existing deficits exist (including ADHD), compared to other interchangeable terms (e.g., emotion lability), which do not consider pre-existing disorders (Christiansen et al., 2019). This distinction is critical for research and clinical practice, as it underscores the need to contextualise emotional challenges within broader developmental and diagnostic frameworks.

Furthermore, 'affect': a superordinate category accounting for both emotions and moods, has been associated with dysregulation (Niven, 2013). There are overlapping features between 'affect dysregulation' and 'emotion dysregulation', including difficulties with calming down after being upset and heightened reactivity to strong emotions (Narendorf et al., 2016). The lack of clear definitions for these related terms makes it challenging for researchers and clinicians to differentiate between constructs, potentially leading to inconsistent diagnostic and treatment approaches. If terms like emotion lability and emotion dysregulation are used interchangeably, this could result in varied understandings of emotion dysregulation across clinical contexts. Thus, there is an urgent need to establish more precise definitions that delineate these constructs and clarify their relationships, ensuring that emotion dysregulation is understood in a more systematic and coherent manner.

Some scholars, such as Bunford et al., (2014), assert that emotion dysregulation is a universal mechanism underlying various mental health disorders, including ADHD. According to this view, dysregulation is a central feature of ADHD, explaining the difficulties these individuals experience in regulating their emotional responses in both social and cognitive domains. On the other hand, Corbisiero et al., (2013) challenge this perspective, proposing that emotion dysregulation in ADHD may not be an inherent symptom of the disorder, but rather a product of contextual factors such as familial dynamics, poor social support, or environmental stressors. This discord between universal and context-dependent perspectives speaks to a broader issue within the

field: the challenge of disentangling the role of individual traits from environmental influences in shaping ER. Without a unified conceptualisation, research on emotion dysregulation risks being fragmented, inconsistent, and less capable of guiding intervention strategies that address both individual and contextual factors.

Challenges with Measurement

Efforts to conceptualise and measure emotion dysregulation remain limited by persistent methodological challenges that hinder clarity, comparability, and generalisability. A critical issue is the inconsistent operationalisation of the construct across studies. Although there is broad agreement that dysregulation encompasses maladaptive responses to emotional stimuli, including heightened intensity, prolonged duration, and difficulty modulating affect, the specific aspects targeted by different instruments vary substantially. For example, the Emotional Dysregulation Questionnaire (EDQ), validated by Gill et al., (2021), assessed general ER difficulties across cognitive, behavioural, and interpersonal domains. It demonstrated good internal reliability in a non-clinical sample, but the tool's validity in clinical or developmental populations remains underexplored. Meanwhile, Brancati et al.,'s (2019) Reactivity, Intensity, Polarity and Stability Questionnaire (RIPoSt-40) focuses specifically on dimensions such as emotional polarity and intensity and was validated with adolescents and adults in Italy (n = 235), showing strong psychometric properties. Yet despite these strengths, the RIPoSt-40 may conflate developmental variability in emotional intensity, particularly common in adolescence, with pathological dysregulation. This conflation highlights the lack of age-appropriate scaling in many measurement tools, leading to potential over-identification or under-recognition of emotion dysregulation, depending on developmental norms. While self-report scales like the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) have become widely used in research, they are

primarily designed for older adolescent and adult populations. These scales often fail to capture the developmental nuances of emotion regulation in younger children, whose self-awareness and metacognitive abilities are still emerging (Aldao et al., 2010). Furthermore, observational measures used in laboratory settings, although valuable for assessing specific emotional episodes, may not reflect the full complexity of dysregulation in real-world settings, where emotions fluctuate dynamically in response to environmental cues and interpersonal interactions. Agako et al., (2022) highlighted this issue, noting that different studies employ divergent measurement tools to assess emotion dysregulation, resulting in difficulties in comparing findings across studies. For example, observational measures of emotional reactivity may not capture how well children can return to baseline after emotional arousal, a critical aspect of emotion regulation as described by Gratz and Roemer (2004). The lack of standardised, age-appropriate tools for capturing the developmental trajectory of emotion dysregulation in children underlines the need for more robust and flexible measurement systems that can accommodate the cognitive and emotional developmental stages of younger populations.

An additional concern is the widespread dependence on self-report measures, which continue to dominate the field despite longstanding concerns about their limitations. Self-report relies on the participant's introspective accuracy and emotional vocabulary, which may not have fully developed in children. Instruments such as the EDQ and RIPoSt-40 are seldom complemented by behavioural or physiological data, raising questions about whether they are capturing true regulatory impairment or subjective distress about emotions. The limited use of informant reports or observational measures exacerbates this problem. For instance, Breaux et al., (2018) investigated longitudinal associations between parental emotion socialisation practices and child dysregulation in a sample of 180 children (aged 6-13), finding that both mothers' and fathers' behaviours were predictive of children's regulatory outcomes. The use of multiple informants in

this study offered a richer perspective, revealing discrepancies in perception between parents and teachers that would have been lost in single-reporter designs. This underscores the need for multi-informant methodologies as standard practice, especially when studying dysregulation in children. These measurement challenges highlight the complexity of emotion dysregulation and the need for greater clarity in its conceptualisation. The next section explores middle childhood, in the context of emotion dysregulation and broader socio-emotional development, including coping strategies.

4.5 Middle Childhood and Emotion Dysregulation

From a cognitive standpoint, children in middle childhood undergo marked shifts in their capacity for logic, perspective-taking, and reflective thought. Piaget (1972) characterised this stage as the emergence of concrete operational thinking, which allows children to engage in mental operations that are flexible and reversible, laying the groundwork for complex reasoning. This cognitive growth is accompanied by improved executive function, including working memory, inhibitory control, and attentional flexibility, which are all core components underpinning self-regulation and emotional control (Berk, 2015). As a result, children are increasingly capable of evaluating their own emotional responses, modulating their expressions based on context, and anticipating the emotional outcomes of their behaviour. Some children, particularly those facing neurodevelopmental challenges or environmental adversity, may show significant difficulties in applying emotion regulation strategies effectively, leading to persistent dysregulation that manifests across home, school, and peer contexts.

Typically, as children experience positive emotional development during this stage, they gain the ability to understand their sense of self and navigate the emotional demands of evolving

friendships. However, this period of rapid emotional growth also represents a stage of vulnerability, where it becomes important to distinguish between typical emotional functioning and that of children with mental health issues (Cole et al., 2008). For instance, typically developing children may exhibit short-lived emotional outbursts that subside with self-soothing or comfort-seeking, while children with mental health disorders, such as ADHD, may display persistent, excessive emotional peaks during tantrums (Panayiotou & Humphrey, 2018). This highlights a need for clearer differentiation between normative emotional fluctuations and those indicative of dysregulation, which has yet to be sufficiently explored.

Emotion dysregulation during this period can take a range of forms, from irritability and low frustration tolerance to more overt behaviours such as aggression or withdrawal. Shaw et al., (2014) have emphasised that children with ADHD are particularly susceptible to such difficulties, often exhibiting high emotional reactivity, poor frustration tolerance, and challenges in returning to baseline after arousal. These emotional challenges not only compromise classroom learning and academic outcomes but also affect peer relationships and self-esteem. Zeman et al., (2006) similarly underscore the significance of social context in either exacerbating or buffering these difficulties, noting that children who struggle to regulate emotions may face peer rejection or experience escalating conflict, which in turn further undermines their capacity for adaptive regulation. This interplay between emotional functioning and social dynamics is a defining feature of middle childhood and one that can significantly influence developmental trajectories across adolescence and into adulthood. Concerningly, recent epidemiological data suggest that emotional and mental health disorders are on the rise in this age group. Vizard et al., (2020) reported a marked increase in probable mental health disorders among children aged 5-10 in England, rising from 9.4% in 2017 to 14.4% in 2020, with emotional disorders, such as anxiety and depression comprising a significant proportion of this increase. Such findings lend urgency to calls for early

intervention and better support during this overlooked developmental phase. Rather than focusing solely on symptomatic treatment in adolescence or adulthood, investment in preventive and promotive approaches during middle childhood may yield more sustainable outcomes by targeting emotion regulation skills at earlier stages of life.

Importantly, emotion regulation during middle childhood is shaped by the wider relational and ecological systems surrounding the child. Luthar et al., (2000) argue that resilience during this period is best understood as the product of interactions between individual traits and contextual resources, including family stability, school climate, and peer relationships. Children exposed to nurturing environments with emotionally responsive caregivers and supportive educational contexts are more likely to develop adaptive coping mechanisms, whereas those exposed to neglect, family stress, or punitive environments may adopt maladaptive strategies such as avoidance, aggression, or emotional numbing. Compas et al., (2009) have further highlighted the importance of teaching children a range of coping strategies, including cognitive restructuring, problem-solving, and emotional expression, which are not innate but must be modelled, practised, and reinforced within consistent social environments. Taken together, middle childhood is a period when children can build on earlier learning to strengthen emotional resilience and self-regulation, but also when unresolved difficulties from earlier stages may begin to manifest more concretely in social or academic impairment. The following subsection will explore how coping strategies develop during middle childhood, with a focus on aggressive and competent coping strategies.

Coping Strategies

Coping strategies are crucial for managing stress and regulating emotions, particularly in middle childhood, when children are navigating increasingly complex social, academic, and emotional challenges. These strategies are not static; rather, they evolve significantly as children's

cognitive and emotional capabilities mature. Coping strategies can broadly be divided into two categories: aggressive coping, which tends to be maladaptive, and competent coping, which is associated with positive developmental outcomes. The distinction between these coping will be explored, particularly in relation to long-term implications for emotional and behavioural development in children with emotion dysregulation and ADHD.

Aggressive Coping

Aggressive coping constitutes a maladaptive regulatory strategy in which children externalise distress through hostile, reactive, or oppositional behaviours. Though frequently pathologised in diagnostic frameworks and school settings, aggression must be understood not merely as a behavioural excess, but as a signal of regulatory failure under conditions of heightened affective arousal. More specifically, for children with ADHD, the resort to aggression often reflects a compromised capacity to inhibit dominant emotional impulses, rather than a wilful intent to harm (Faraone et al., 2019; Marques et al., 2024; Ribeaud et al., 2022). Prior research has shown that children with ADHD tend to employ maladaptive conflict coping strategies, such as aggression and hostility, in response to frustration or social conflict (Dumas et al., 1995). These aggressive responses to conflict can escalate interpersonal disputes and reinforce negative social outcomes, including peer rejection and social withdrawal (Barkley, 2015; Sideridis, 2006). Children with ADHD who exhibit aggressive conflict coping are more likely to engage in hostile behaviours, which can worsen their peer relationships and increase their risk of social exclusion (Barkley, 2015; Drechsler et al., 2020).

The relationship between emotional arousal and aggression is well-established but warrants more nuanced scrutiny. Rule and Nesdale (1976) argued that heightened arousal reduces an individual's cognitive flexibility, thereby increasing the probability of aggressive outbursts. While

this may hold empirically, it risks flattening aggression into a reactive inevitability. For children exposed to chronic stress or trauma, the threshold for perceiving interpersonal cues as hostile may be significantly lowered. Their aggression, then, is not a failure of regulation per se, but a learned survival strategy, one that has, perhaps unfortunately, served a functional role in threatening environments. This reading repositions aggression not as pathology, but as adaptation, however costly its interpersonal consequences. Moreover, Whitman and Gottdiener (2015) found that avoidant and unconscious coping styles significantly predicted aggression, suggesting that the inability to process emotional experience consciously may lead to behavioural difficulties. Similarly, Ursin and Olff (1995) contend that aggression must be situated within broader biopsychosocial defence systems, where the physiological stress response interacts with learned behavioural repertoires. The challenge here is epistemological: how do researchers distinguish between aggression as volition and aggression as involuntary regulatory collapse?

Without a clear framework for making this distinction, interventions risk either over-pathologising or under-responding to children's distress. The socio-environmental context is equally critical. Children embedded in coercive family systems or exposed to inconsistent caregiving may learn that aggression is the most efficacious, or indeed the only way to assert needs or boundaries. For example, The Coping Power Programme (Powell et al., 2017) demonstrates that equipping children with alternative emotional strategies, alongside enhancing adult scaffolding, can reduce reliance on aggression. Yet the success of such programmes depends on the willingness of adults to abandon punitive models of behaviour management. Without a relational shift, skill-building alone may fail to displace aggression as the default coping strategy. What remains under-theorised in the literature is the phenomenology of aggression: how do children understand and narrate their own aggressive behaviour? The field remains overly reliant on behavioural observations and parent reports, with limited attention to the child's subjective world. A more

ethical and developmentally attuned approach would seek to listen to the meanings children assign to their aggression, not only what they do, but why they believe they do it. In doing so, interventions can move beyond behaviour control to better emotional expressions and relational repair.

Competent Coping

In contrast to aggressive coping, competent coping involves the use of adaptive strategies that enable children to effectively manage stress and regulate their emotions. Competent conflict coping, characterised by problem-solving skills, emotion regulation, and the ability to remain calm under stress, is linked to more positive social outcomes and better peer acceptance (Dumas et al., 1995). For children with ADHD, there are often struggles with competent conflict resolution due to their impulsivity and difficulties with emotion regulation (Antony et al., 2022). Anderson et al., (2017) found that children from stable, supportive home environments are more likely to develop these adaptive coping mechanisms, which not only foster emotion regulation but also lead to positive social and academic outcomes. Moreover, Overgaard et al., (2014) suggest that competent coping not only helps mitigate the impact of stressors but also promotes the development of self-regulatory skills that are foundational for emotional wellbeing. For example, children who can cope adaptively with academic challenges are more likely to develop a sense of self-efficacy and confidence in their abilities, which can lead to improved academic performance. Similarly, children who navigate social conflicts using competent coping strategies, such as seeking support or negotiating solutions, are more likely to form positive peer relationships and experience greater social integration (National Research Council, 1984). These positive outcomes contribute to overall resilience and emotional competence, which are critical for successful development. Despite the benefits of competent coping, there remain gaps in the literature regarding the long-

term impact of these strategies on mental health. For instance, how do adaptive coping strategies develop over the course of childhood, and do they continue to provide protection against stress as children encounter new challenges?

To address these gaps, research should prioritise longitudinal studies that track the development of coping strategies over time, during different stages of childhood. These studies would be particularly valuable in understanding how coping skills evolve as children face increasingly complex emotional, social, and academic demands. Additionally, researchers should explore the interaction between individual temperament and coping strategies, as well as the role of family dynamics and peer relationships in shaping coping mechanisms. Thus, understanding how coping strategies contribute to mental health disorders, such as resilience against ADHD, is essential for developing interventions that support emotion regulation long-term. The discussion will now turn to the interplay between ADHD, parenting practices, and emotion dysregulation.

4.6 Understanding the Intersection: ADHD, Parenting Practices, and Emotion Dysregulation

Cross-Sectional Studies

Cross-sectional studies have been instrumental in providing initial insights into the complex relationships between parenting practices, ADHD symptoms, and emotion dysregulation in children (Diamantopoulou et al., 2005; Jensen & Rosén, 2004). These studies serve as valuable starting points, allowing researchers to identify patterns and correlations between parenting behaviours and emotional outcomes. However, the fundamental limitation of cross-sectional research is its reliance on data collected at a single point in time. While this offers a snapshot of the current research trends, it falls short in capturing the dynamic, developmental nature of emotion

dysregulation and its interaction with parenting over time. By highlighting associations rather than causal mechanisms, cross-sectional studies leave significant gaps in understanding the trajectories and underlying processes involved in emotional development.

A prominent example of a cross-sectional study is that of Diamantopoulou et al., (2005), who examined a sample of 209 children aged 8-12 and found that low parental warmth and inconsistent discipline were strongly associated with higher levels of emotion dysregulation in children diagnosed with ADHD. While this finding is insightful, the study's reliance on parent- and teacher-reported data, such as the Child Behaviour Checklist (CBCL), is a significant limitation. Although these informants are considered valuable, their reports are inherently biased by their perspectives, experiences, and potential preconceptions about the child's behaviour. Moreover, parent- and teacher reports are typically retrospective in nature, leading to possible recall biases, especially in high-conflict parent-child relationships. These biases can distort the findings, making it difficult to draw firm conclusions about the actual emotional experiences of the child. A crucial oversight in this study is the lack of child self-reports, which would have provided essential insights into the emotional experiences and regulation strategies of the children themselves. This exclusion means that the study fails to account for how children perceive and respond to their emotional states, which could differ significantly from how adults interpret their behaviour. Emotion dysregulation in children may be driven by internal experiences that are not adequately captured through the eyes of external observers.

Similarly, Jensen and Rosén (2004) conducted a study examining emotional reactivity in children and adolescents with ADHD, involving a broad age range of 6-15 years. Their findings indicated that children with ADHD were significantly more emotionally reactive compared to typically developing peers, demonstrating heightened emotional lability in response to both positive and negative emotional challenges. However, the study's inclusion of such a wide age

range raises concerns about the generalisability of the results. As discussed previously, in younger children, emotion regulation is often more directly shaped by caregiving behaviours and early socialisation, while in older children and adolescents, cognitive and social factors begin to exert a larger influence on emotion regulation. By grouping children across such a broad developmental spectrum, the study obscures the nuanced ways in which ADHD and emotion dysregulation may manifest at different stages of childhood. This broad categorisation potentially limits the study's ability to reflect age-specific emotional processes in children with ADHD, leading to generalisations that may not accurately represent the distinct emotional challenges faced at various stages of development.

In addition, while parenting practices such as inconsistent discipline may contribute to emotion dysregulation in children, it is also plausible that emotionally dysregulated children may evoke negative or inconsistent parenting responses. This concept of evocative gene-environment correlation (Plomin et al., 1977) highlights the dynamic and reciprocal nature of parent-child interactions, where a child's emotional state can influence the behaviour of the parent. Rather than indicating a direct cause-and-effect relationship between parenting and emotion regulation, such studies may merely capture the co-occurrence of related phenomena. Without longitudinal data, it is not possible to ascertain whether parenting influences emotional outcomes, or whether children's emotion dysregulation shapes the way they are parented.

Overall, cross-sectional studies have contributed significantly to identifying associations between parenting practices and emotion dysregulation in children with ADHD, they are limited by their inability to capture the developmental trajectories and causal mechanisms involved. The broad age ranges studied, and the failure to address the bidirectional nature of the parent-child relationship all point to the need for more sophisticated and longitudinal research designs.

Longitudinal Studies

While cross-sectional studies have offered valuable insights into the relationship between parenting practices and emotion dysregulation in children with ADHD, longitudinal studies provide a more robust framework for understanding the developmental trajectory of these interactions over time. In contrast to cross-sectional research, longitudinal studies are better equipped to explore the temporal aspects of emotional development and regulation, offering a more developmental and causally informative lens (Ployhart & Ward, 2011). Longitudinal studies are especially valuable for investigating questions about developmental progression and the long-term outcomes of early emotional experiences. An exemplary longitudinal study is that of Islamiah et al., (2024), who followed a cohort of 312 children aged 5-11 years at baseline, examining how parenting behaviours predicted emotion regulation skills over four annual waves. This study used growth curve modelling to track changes in emotion regulation, finding that early parental sensitivity and the establishment of structured routines significantly predicted more adaptive emotion regulation. This finding is consistent with previous research suggesting that early parental involvement, characterised by warmth, responsiveness, and structured support, is protective against the development of maladaptive emotion regulation. By controlling for baseline ADHD severity and other demographic factors, this study also provided evidence of the enduring impact of early parenting on children's emotional development, independent of other potential confounds.

Similarly, Tost et al., (2024) followed 158 children diagnosed with ADHD over a three-year period, used a multi-method approach combining observational coding of parent-child interactions, emotion regulation tasks (such as frustration-induction paradigms), and teacher reports. This methodological diversity allowed for a more nuanced understanding of how parenting behaviours evolved and interacted with children's emotion regulation capacities over time. For instance, the study found that more positive parenting behaviours, including emotional validation

and constructive problem-solving, were associated with better emotion regulation outcomes in children with ADHD. The use of multiple informants also enhanced the study's validity, offering a more holistic view of the child's emotional experiences. However, longitudinal studies also face methodological challenges. One key issue is sample attrition, which can undermine the representativeness of the findings, as Tost et al.,'s (2024) study indicates where 23% of participants were lost to follow-up. Such attrition often skews the results toward families who are more stable or engaged and may also introduce bias, if those who drop out differ systematically from those who remain in the study. Furthermore, many longitudinal studies rely on relatively homogenous samples, often consisting of middle-class, White families, which raises concerns about the generalisability of the findings to more diverse cultural and socio-economic groups.

A body of longitudinal and clinical research has established robust associations between early dysregulation and the later emergence of both internalising and externalising disorders. Fox and Calkins (2003) followed children from toddlerhood into early adolescence, reinforce the notion that parental modelling of emotions, validation of emotional experiences, and active scaffolding of coping strategies are crucial in promoting emotional resilience, even in neurodivergent populations. This study highlights that the quality of early caregiving sets the foundation for children's emotional and social development, particularly in high-risk groups like those with ADHD. Moreover, Hollender et al., (2024), using data from a large, multi-year cohort, found that difficulties with ER in early childhood significantly mediated the relationship between preschool emotion labelling ability and depressive symptoms in adolescence. This suggests that emotion dysregulation is not merely a co-occurring feature of psychopathology, but a potential developmental precursor. Similarly, Marques et al., (2024), in their study of children with ADHD, found that emotion dysregulation and depressive symptoms jointly mediated the relationship between deficits in inhibitory control and the emergence of aggressive behaviour, highlighting the

complex interactions between cognitive control, affective processing, and behavioural outcomes. These findings point to a broader pattern whereby emotion dysregulation not only contributes to immediate social and behavioural difficulties, but also acts as a developmental risk factor that can exacerbate or compound existing vulnerabilities across the lifespan. In sum, the intersection of parenting practices, ADHD, and emotion dysregulation remains a complex and dynamic area of research. Whilst cross-sectional and longitudinal studies have demonstrated that parenting behaviours influence emotional outcomes in children with ADHD, there is a need for longitudinal research to explore the temporal dynamics of these relationships and to determine the long-term effects of early parental interventions on the development of emotion regulation.

4.7 Summary and Concluding Thoughts

This chapter has undertaken a comprehensive and critical examination of the literature surrounding emotional development, with a focus on ER and emotion dysregulation during middle childhood. The literature review charted the evolution of emotion regulation theories, from early, relatively narrow conceptualisations to contemporary frameworks that adopt a more integrative and multidimensional perspective. These modern models increasingly recognise the importance of context, individual variability, and the co-development of internal and external regulatory processes. However, despite theoretical advances, considerable gaps remain in our empirical understanding, particularly regarding the mechanisms through which emotion regulation capacities develop and how certain children become vulnerable to maladaptive emotional patterns. One of the most pressing issues identified is the need for more longitudinal and culturally sensitive research that can capture the nuanced and evolving nature of emotion regulation across time and diverse populations. Such methodological constraints are especially problematic when studying

complex phenomena like dysregulation, which may fluctuate across different developmental stages and environmental contexts. Furthermore, the chapter has underscored the importance of investigating how emotion dysregulation may manifest differently in children facing ADHD. The next section of this thesis will introduce the present study, which aims to address these gaps by examining how ADHD symptoms, parenting practices, and emotion dysregulation intersect during middle childhood.

Chapter Five

The Present Study

5.1 Introduction

This chapter will present the research aims, scope, research questions (RQs), and hypotheses of this PhD research. The research aims and questions will be outlined, corresponding to each phase of this thesis: the reconceptualisation of emotion dysregulation in middle childhood in the context of youth psychopathology **(Study 1)**; an examination of the cross-sectional and longitudinal associations between ADHD symptoms, parenting practices, emotion dysregulation, and other key socio-emotional outcomes **(Study 2)**; and the development of a theoretical framework to address children's difficulties in regulating the emotions of others **(Study 3)**.

5.2 Aims and Scope

Aims and Scope

The research aims and scope of this thesis are threefold, aligned with the objective of each study:

1. **Study 1:** To examine the evolution of conceptualisations of emotion dysregulation within psychological literature and evaluate their applicability to middle childhood (ages 6-12).
2. **Study 2:** To critically assess both cross-sectional and longitudinal associations between ADHD symptoms, parenting practices, and emotion dysregulation, from a cross-national perspective encompassing cohorts in the UK and Zurich.

3. **Study 3:** To develop a novel framework on children's difficulties in regulating others' emotions and the influence of parenting and SES, based on insights from Studies 1 and 2 highlighting extrinsic emotion dysregulation.

5.3 Research Questions

Study 1

Study 1 (Chapter 6) provides the conceptual foundation for the thesis through a systematic scoping review of the psychological literature on emotion dysregulation. This review serves a dual purpose: first, to trace the evolution of how emotion dysregulation has been defined and operationalised across disciplines; and second, to evaluate the relevance and applicability of these conceptualisations to middle childhood (ages 6-12). Although emotion dysregulation is widely acknowledged as a key transdiagnostic risk factor in child and adolescent mental health, there remains a lack of consensus regarding its core features, developmental manifestations, and contextual influences, particularly within this age group. The scoping review synthesises existing definitions and dimensions (e.g., intensity, frequency, lability) of emotion dysregulation, highlighting developmental considerations and identifying gaps and inconsistencies in the literature. By addressing these issues, **Study 1** informs the empirical direction of the thesis, particularly the selection of constructs measured in **Study 2**, and the development of the theoretical framework in **Study 3**. Accordingly, **Study 1** addresses *RQ1*: *how is emotion dysregulation conceptualised in the context of middle childhood?*

Study 2

Building on the conceptual foundations established in **Study 1**, **Study 2** (Chapter 7) comprises two related empirical sub-studies, **Study 2A** (MCS) and **Study 2B** (z-proso), which examine the relationships between ADHD symptoms, parenting practices, emotion dysregulation/anger, and outcomes such as conflict coping strategies and peer relationship problems. Importantly, ADHD symptoms, emotion dysregulation, and anger are not assessed clinically in either cohort; instead, parent- and self-report measures capture a range of symptom severity within large population-based samples. While these measures are not clinically definitive, they offer ecologically valid insights into everyday emotional and behavioural functioning, as well as their environmental influences (Frick & Nigg, 2012). Parenting is categorised differently across the studies, with **Study 2A** focusing specifically on harsh and withdrawn parenting, while **Study 2B** differentiates between positive (e.g., involvement, reinforcement) and negative parenting (e.g., erratic discipline, corporal punishment).

Table 5.1. *Study 2A MCS RQs and Hypotheses.*

RQ	Hypotheses
RQ2) What key demographic factors contribute to the development and persistence of emotion dysregulation symptoms in children aged 5 and 7?	H1: There are key demographic factors such as gender, SES (income), maternal education, and ethnicity, that are associated with emotion dysregulation symptoms at ages 5 and 7, respectively.
RQ3) What moderating role do ADHD symptoms have in the relationship between parenting practices and emotion dysregulation symptoms in children aged 5 and 7, cross-sectionally?	H2 Withdrawn Parenting Cross-Sectional (Age 5): a) Withdrawn parenting at age 5 is positively related to emotion dysregulation at age 5. b) ADHD symptoms at age 5 moderate this relationship, intensifying the association. H3 Harsh Parenting Cross-Sectional (Age 5): a) Harsh parenting at age 5 is positively related to emotion dysregulation at age 5. b) ADHD symptoms at age 5 moderate this relationship, intensifying the association. H4 Withdrawn Parenting Cross-Sectional (Age 7): a) Withdrawn parenting at age 7 is positively related to emotion dysregulation at age 7. b) ADHD symptoms at age 7 moderate this relationship, intensifying the association. H5 Harsh Parenting Cross-Sectional (Age 7): a) Harsh parenting at age 7 is positively related to emotion dysregulation at age 7. b) ADHD symptoms at age 7 moderate this relationship, intensifying the association.

RQ4) What moderating role do ADHD symptoms have in the relationship between parenting practices and peer relationship problems in children aged 5, 7, and 11, longitudinally?	H6 Withdrawn Parenting (Longitudinal): a) Withdrawn parenting at age 5 is positively related to peer relationship problems at age 11. b) ADHD symptoms at age 7 moderate this relationship, intensifying the association. H7 Harsh Parenting (Longitudinal): a) Harsh parenting at age 5 is positively related to peer relationship problems at age 11. b) ADHD symptoms at age 7 moderate this relationship, intensifying the association.

Table 5.2. *Study 2B z-proso RQs and Hypotheses.*

RQ	Hypotheses
RQ5) What key demographic factors influence the presentation of anger symptoms in children aged 7 and 9?	H8: There are demographic factors (gender, SES, and parents' migration background) that are associated with anger symptoms among children aged 7 and 9.
RQ6) What moderating role do ADHD symptoms have in explaining the associations between parenting practices and anger in children aged 9, cross-sectionally?	H9 Negative Parenting Cross-Sectional (Age 9): a) Negative parenting practices are negatively associated with anger symptoms at age 9. b) ADHD symptoms at age 9 moderate this relationship. H10 Positive Parenting Cross-Sectional (Age 9): a) Positive parenting practices are positively associated with anger symptoms at age 9. b) ADHD symptoms at age 9 moderate this relationship.
RQ7) What mediating role does anger have in explaining the associations between ADHD symptoms and conflict coping strategies in children aged 7,9 and 11, longitudinally?	H11 Aggressive Coping (Longitudinal): a) ADHD symptoms at age 7 are positively related to aggressive conflict coping at age 11. b) Anger symptoms at age 9 mediate this relationship. H12 Competent Coping (Longitudinal): a) ADHD symptoms at age 7 are negatively related to competent conflict coping at age 11. b) Anger symptoms at age 9 mediate this relationship.

Study 3

Building on the gaps in existing emotion dysregulation conceptualisations from **Study 1** and cross-national comparisons between the UK and Zurich samples from **Study 2**, **Study 3** (Chapter 8) shifts the perspective from children as passive recipients to active agents influencing others' emotional experiences. This study will explore the novel concept of extrinsic dysregulation, specifically examining how children's difficulties in regulating their parents' emotions are shaped by developmental antecedents such as parenting practices and SES.

To investigate this, the following RQs will guide this study:

RQ8) How do children develop difficulties in extrinsic emotion regulation (i.e., struggles in influencing the emotional states of others)?

RQ9) In what ways do parents contribute to their children's difficulties in regulating the emotional states of others (extrinsic dysregulation)?

5.4 Summary and Concluding Thoughts

This chapter has outlined the overarching aims, scope, research questions, hypotheses, and theoretical significance of this PhD research. Focusing on middle childhood, this thesis addresses conceptual, empirical, and theoretical gaps in understanding emotion dysregulation. Study 1 provides a conceptual foundation through a scoping review, reconceptualising how emotion dysregulation is understood in children aged 6 to 12. Study 2 builds on this by empirically examining longitudinal data from UK and Zurich cohorts, highlighting cross-national dynamics between parenting practices, ADHD symptoms and emotion dysregulation/anger. Study 3 extends

the framework by proposing extrinsic dysregulation, a novel construct reflecting children's difficulties to regulate others' emotions, within broader socio-cultural contexts. Together, these studies form an integrated inquiry into the mechanisms and influences of emotion dysregulation, establishing a foundation for future research and intervention. The next chapter presents Study 1, offering an in-depth scoping review of emotion dysregulation literature and setting the foundation for the empirical and theoretical work that follows.

Chapter Six

Study 1 - 'Reconceptualising Emotion Dysregulation': A Scoping Review

6.1 Introduction

This chapter presents **Study 1**[1], the conceptualisation phase of this thesis, which aims to critically examine and synthesise existing *academic conceptualisations* of emotion dysregulation, within the context of middle childhood. Despite the growing recognition of emotion dysregulation as a key factor in psychological development and mental health, its conceptualisation remains inconsistent across the literature. Existing definitions often vary depending on theoretical orientation, leading to ambiguity in how emotion dysregulation is distinguished from related constructs, such as affect dysregulation (Narendorf et al., 2016). Additionally, much of the research has focused on broad age ranges or adulthood, with limited attention given to middle childhood. By conducting a scoping review of existing literature reviews, this study seeks to clarify how emotion dysregulation has been framed in previous research, within youth psychopathology, identify conceptual gaps, and highlight the importance of developmental considerations in refining its conceptualisation.

The first section of this chapter provides a brief theoretical background, addressing key theoretical perspectives, functionalism and social constructivism, in the context of emotion dysregulation. The methodology is then detailed, covering the search strategy, inclusion and

[1] Chapter 6 includes a published paper and can be cited as follows: Antony, E., Beckmann, N., & Higgins, S. (2025). Reconceptualising emotion dysregulation in the context of middle childhood: A scoping review of reviews. *JCPP Advances, 5*(1), e12296. https://doi.org/10.1002/jcv2.12296

exclusion criteria, and the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews) protocol employed. The results are then presented, focusing on key themes from the reviewed studies. Finally, the discussion situates the findings within the chosen theoretical perspectives, identifying critical factors that should inform future conceptualisations. Following this, a new conceptualisation of emotion dysregulation will be proposed based on the findings.

6.2 Rationale

The conceptualisation of emotion dysregulation represents a complex yet essential task within developmental psychology and youth mental health research. Despite growing recognition of its central role in psychological functioning, especially in childhood, the construct remains inconsistently defined and often conflated with related terms such as affect dysregulation (Narendorf et al., 2016). This lack of conceptual clarity has hindered theoretical coherence, limited the precision of assessment tools, and complicated the development of targeted interventions. Study 1 seeks to address this issue by systematically examining how emotion dysregulation has been conceptualised in the academic literature, with a specific focus on middle childhood as a key period in the emergence of self-regulatory capacities.

A scoping review focused on this developmental stage is warranted for several reasons. First, emotion dysregulation is widely acknowledged as a transdiagnostic mechanism, implicated in a range of psychological disorders, including ADHD, anxiety, depression, and conduct problems (Beauchaine, 2015). Approaching emotion dysregulation through a youth psychopathology lens, rather than through disorder-specific frameworks, allows for a more dimensional and integrative perspective that reflects the high comorbidity and symptom overlap common in childhood (Cole

et al., 2004; Shaw et al., 2014). A diagnostic approach may obscure developmental nuances and overlook the complex ways in which regulatory difficulties manifest and shift across contexts. In contrast, a transdiagnostic approach fosters a more flexible and developmentally sensitive understanding that can inform broad-spectrum interventions aimed at emotion regulation. A further motivation for this study is the variation in theoretical approaches to emotion dysregulation. For example, some conceptualisations define it as a failure in the implementation of emotion regulation strategies (Bunford et al., 2015), while others regard it as a trait-like characteristic of intense or poorly modulated emotional responses (Graziano & Garcia, 2016). These differing interpretations not only reflect disciplinary divides but also result in varying operational definitions across studies, which undermines consistency in measurement and interpretation. By synthesising these diverse perspectives, this study aims to map the conceptual terrain, clarify terminology, and identify core components that are consistently associated with emotion dysregulation. Existing research largely centres on adolescence and adulthood (e.g., Carmassi et al., 2022; Corbisiero et al., 2013; Darmadi & Badayai, 2021; Gioia et al., 2021), leaving a gap in our understanding of emotion dysregulation during middle childhood. By focusing on children aged 6-12, this study addresses calls for age-specific models that reflect the distinct emotional and cognitive shifts of this developmental stage.

Through a comprehensive review of prior literature reviews, this scoping study seeks to achieve three main objectives:

1. To identify and synthesise dominant conceptual frameworks and definitions of emotion dysregulation within youth psychopathology research.

2. To evaluate the degree to which these frameworks attend to developmental specificity in middle childhood.

3. To propose a refined conceptualisation of emotion dysregulation that is both theoretically grounded and developmentally appropriate.

By addressing these aims, Study 1 provides a foundational contribution to the thesis, informing the measurement and modelling phases that follow. The findings will also have broader implications for future research, clinical assessment, and intervention design, helping to advance a more coherent and context-sensitive understanding of emotion dysregulation during one of the most pivotal stages of child development.

6.3 Research Question

This scoping review critically examines how emotion dysregulation in middle childhood is conceptualised within youth psychopathology. To guide this process, the scoping review focuses on the following RQ:

RQ1) *How is emotion dysregulation conceptualised in the context of middle childhood?*

6.4 Theoretical Background

Theoretical Perspectives on Emotion Dysregulation

Functionalism

A central challenge in conceptualising emotion dysregulation lies in the ongoing debates surrounding approaches to emotion from both developmental and social constructivist perspectives. While prior research has consistently identified emotion dysregulation as a significant factor in youth psychopathology, the theoretical and empirical understanding of this relationship remains contentious. For example, numerous studies have argued that emotion

dysregulation is a prevalent feature of ADHD symptoms in children (Mennin et al., 2007; Shaw et al., 2014; van Stralen, 2016). These findings, drawn from cross-sectional research, align with other studies suggesting that emotion dysregulation mediates the relationship between ADHD and co-occurring emotional difficulties (Barkley, 2014; Graziano & Garcia, 2016; Seymour et al., 2014). However, while these studies highlight important associations, critical gaps persist in understanding the nature of emotion dysregulation itself. Specifically, the question arises as to whether emotion dysregulation should be conceptualised as a global risk factor for psychopathology or as one of several interrelated factors that increases the likelihood of the development of youth emotional and behavioural problems (McLaughlin et al., 2011). This ambiguity calls for more nuanced research to better delineate the role of emotion dysregulation in psychopathology and its complex relationship with other developmental and contextual factors.

When considering the severity and manifestation of emotion dysregulation, it is imperative to account for developmental trajectories. Childhood is characterised by profound biological and socio-environmental transformations that influence the expression of emotion dysregulation (Rapee et al., 2019). For instance, hyperactivity symptoms, commonly associated with ADHD, can manifest differently at various stages of development. Early childhood may be characterised by overt behaviours such as difficulty sitting still, while later childhood may see these behaviours shift to internal experiences of restlessness (Weyandt et al., 2003). Although this progression is widely recognised, questions remain regarding the extent to which these developmental shifts are modulated by the broader context of cognitive and emotional maturation. Moreover, the impact of puberty and social changes, such as peer pressure and social exclusion, prior to adolescence is often cited as a critical period when children become more vulnerable to emotional difficulties, affecting self-esteem and social connectedness (Cavanaugh & Buehler, 2016). However, much of the existing research tends to focus on the onset of these challenges without sufficiently examining

how biological maturation and socio-environmental factors interact to shape emotion dysregulation. Addressing this gap is essential, given that biological maturation and socio-environmental factors likely play a critical role in shaping both the outward expression and internal experience of emotion dysregulation.

Furthermore, mental health disorders such as depression, anxiety, eating disorders, and substance abuse often emerge before the age of 24, with adolescence being a particularly vulnerable period for the onset of these disorders (Blakemore, 2019). Yet, while these findings provide insight into the timing of mental health challenges, they raise important questions about the developmental precursors to these disorders, particularly in children aged 6-12. It remains unclear how early emotion dysregulation may act as a potential risk factor for later mental health difficulties, and whether interventions during this period could mitigate or prevent the progression of more severe psychopathology. Thus, a more integrated and comprehensive approach, considering both biological and social-environmental factors, is necessary to fully understand the developmental trajectories of emotion dysregulation and its impact on long-term mental health outcomes.

Social Constructivism

Social constructivist theorists argue that culture and context are crucial factors in shaping emotional experiences and behaviours (Kim, 2001). Within the realm of emotion dysregulation, the trajectory and severity of symptoms can vary significantly, depending on children's interactions within different contexts, such as school, home, and extracurricular activities. Despite this, the variability engendered by these contexts remains underexplored in the current literature. The way children navigate these environments, particularly in terms of their emotional responses and coping mechanisms, could have a profound impact on how emotion dysregulation manifests

and is understood (Cole et al., 2019). Social interactions in these settings may either intensify or alleviate emotional challenges, yet much of the current research has not fully addressed the complex ways in which these contextual factors shape the experience and expression of emotion dysregulation.

Furthermore, cultural influences extend beyond the context in which emotion dysregulation occurs to the very tools used to measure it. Measurement tools that categorise emotions as either adaptive or maladaptive often fail to consider broader cultural ideologies and norms, potentially overlooking how different cultures interpret emotional expressions. This is particularly evident in non-Western contexts, where cultural attitudes toward emotion regulation may differ markedly from those in Western societies. For example, Raval et al., (2010) found that Gujarati children perceived their expressions of anger and sadness as less acceptable in their cultural context, leading them to exert more effort in controlling these emotions compared to experiences of physical pain. This suggests that children from different cultural backgrounds may not only experience emotion dysregulation differently but may also employ culturally specific strategies to manage or suppress emotional expressions. Consequently, prospective conceptualisations of emotion dysregulation must account for these cultural nuances, incorporating diverse perspectives to provide a more accurate, holistic understanding of the phenomenon across different environments and cultural contexts.

6.5 Ethical Considerations

Ethical approval for the doctoral project was granted by the School of Education Ethics Committee at Durham University under reference number EDU-2023-09-21 (see Appendix A). This approval was secured after a comprehensive review of the research protocol, ensuring

compliance with the ethical guidelines and standards of the British Education Research Association (BERA, 2024) and British Psychological Society (BPS; Oates et al., 2021). Additionally, the verification of the paper synthesis during the screening process was conducted under the supervision of Professor Nadin Beckmann (NB) and Professor Steve Higgins (SH). Their oversight ensured that the screening process was carried out with rigor and that all aspects of the research complied with established ethical standards. This structured approach contributed to upholding the quality and academic integrity of the project throughout its development and execution.

Pre-registering studies on platforms such as the Open Science Framework (OSF) promotes transparency, accountability, and methodological rigor within the research community. It facilitates clear documentation of a study's design, hypotheses, and analysis plans, thereby supporting replication efforts and reducing the risk of questionable research practices (Appelbaum et al., 2018; Bosnjak et al., 2021; Kathawalla et al., 2021). This practice aligns with established standards for evidence-based research and contributes to the overall reliability and robustness of scientific findings. In line with these principles, the PRISMA flowchart and detailed search strategies for this review were pre-registered on OSF (Antony et al., 2024a).

6.6 Methodology

Prior literature has sought to provide guidance to researchers on determining whether to adopt a systematic or scoping review approach. The purpose of a scoping review is to examine the breadth of research activity, where it may be unclear what other, more specific questions can be posed (Anderson et al., 2008; Arksey & O'Malley, 2005). Moreover, scoping reviews aim to determine if the results from the review should be used to answer a clinically meaningful question

or to inform practice through the evidence collected (Munn et al., 2018). In this scoping review, the focus was not only on mapping existing research, but also on identifying a more meaningful research question that could address gaps in the field and inform clinicians. This scoping review was conducted, using the following five-stage methodological framework as outlined by Arksey and O'Malley (2005): (a) identifying the research question, (b) identifying relevant studies, (c) study selection, (d) charting the data, and (e) collating, summarising, and reporting the results.

Identifying Relevant Studies and Study Selection

As discussed previously in Chapter 4 (subsection 4.4), a range of terms have been used to describe emotion dysregulation, including 'affect dysregulation' and 'emotion impulsivity', denoting differences in the severity and presentation of symptoms. Additionally, emotion dysregulation accounts for pre-existing psychopathological disorders (e.g., ADHD), compared to other terminologies. Searching was conducted on 9th October 2024, using the databases: Web of Science, Scopus, ProQuest and PsycINFO with the following key words (using Boolean operator "AND"): emotional AND emotion AND dysregulation AND childhood AND review. Using both 'emotional' and 'emotion' dysregulation were key in determining the breadth of existing literature.

Although the key word of 'childhood' was applied to the search strategy broadly to determine the magnitude of research, linked to emotion dysregulation, 'childhood' specifically referred to middle childhood (ages 6-12), whilst screening for full texts. Papers with a sole focus on the target population 'adolescents' were therefore excluded. Although not required for scoping reviews, peer-reviewed articles were specified during the search to restrict the scope of the review to higher quality research. Moreover, only papers in the English language were included in all searches across the specified databases, due to time and cost restraints in utilising translation services. The findings are reported, according to the Preferred Reporting Items for Systematic

reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist (Campbell et al., 2020; Tricco et al., 2018).

Charting the Data

During the data charting process, a stringent exclusion criterion was applied at the screening phase for abstracts and titles, but where unclear work was included, it was examined further at the full text stage. Notably, studies that focused on neurological aspects (Beauchaine, 2015) or addressed measurement issues in emotion dysregulation were excluded (Althoff & Ametti, 2021), as these did not meet the scoping review's criteria. Table 6.1 outlines the inclusion and exclusion criteria under each subject heading: population/sample, phenomenon of interest, study design, language, and date range. Table 6.2 provides an overview of the search strategy for each database.

Table 6.1. *Inclusion and Exclusion Criteria for Study 1.*

Criterion	Inclusion	Exclusion
Population/Sample	Childhood Age range: middle childhood (ages 6-12) Whole population (i.e., all children including those in specific subgroups of psychiatric disorders (ADHD), anxious children, effects of maltreatment/abuse etc.).	Infants Toddlers Pre-school Adolescents Adults
Phenomenon of interest	Emotional and emotion dysregulation (includes dysregulation of positive emotions)	Self-regulation (cognitive); meta-cognition
Design	Review (narrative, scoping, systematic, meta-analysis, tertiary, critical, comprehensive, conceptual).	Empirical studies Reviews of neurological/ pharmacological studies
Language	English	Languages other than English
Date range	All years	None

Table 6.2. *Search Strategy for Study 1.*

Database	Key Terms
Scopus	TITLE-ABS-KEY (emotional AND emotion AND dysregulation AND childhood AND review) AND (LIMIT-TO (LANGUAGE, "English"))
Web of Science	[*abstract*] emotional' AND 'emotion' AND 'dysregulation' AND 'childhood' AND 'review'; limit to language = English
PsycINFO	[*abstract*] 'emotional' AND 'emotion' AND 'dysregulation' AND 'childhood' AND 'review'; limit to language = English
PubMed	[*abstract*] 'emotional' AND 'emotion' AND 'dysregulation' AND 'childhood' AND 'review'; limit to language = English

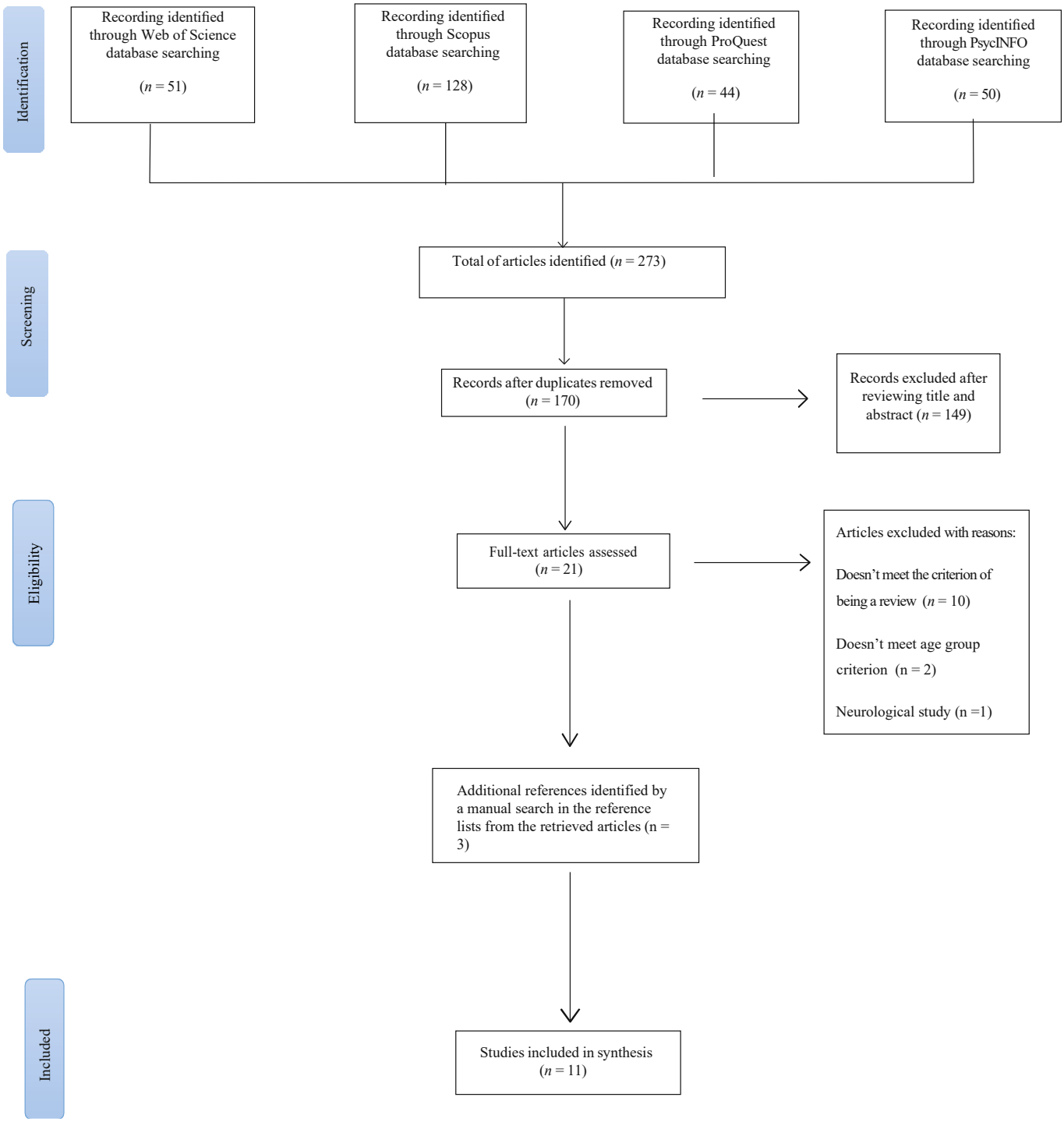
Scoping Review

The search findings from Web of Science, Scopus, ProQuest and PsycINFO on 9th October 2024 yielded a total of 273 papers (51, 128, 44 and 50 papers, respectively). After removing duplications, 170 articles remained. Following this, 149 publications were excluded after screening the title and abstract, with 21 papers remaining. 13 studies were excluded after reviewing the full text, according to the inclusion and exclusion criteria, with 8 relevant papers being identified.

Inter-rater reliability (IRR) was assessed to ensure consistency in applying the inclusion and exclusion criteria during both the initial screening and eligibility phases (Belur et al., 2021). A random sample of papers was selected for further verification by NB and SH. Specifically, 10% of the initial sample (27 out of 273 papers) was randomly selected for review by NB, and 43% (9 out of 21 papers) was randomly selected for SH. Given that 10% is generally considered the minimum threshold for IRR checks, the proportions reviewed by both NB and SH were deemed appropriate. Results from the initial screening phase indicated a high level of agreement between Evelyn Mary-Ann Antony (EMA) and NB, with only one instance of disagreement. This

discrepancy was discussed and resolved by the authors. For the eligibility phase, there was complete agreement between EMA and SH. In addition to the database searches, backward citation searching was carried out by manually reviewing the reference lists of included studies to identify any additional relevant literature (Briscoe et al., 2020; Haddaway et al., 2022). This method yielded three potentially relevant articles. In total, 11 articles met the inclusion criteria and were included in the final review. Figure 6.1 presents the research flowchart, structured according to the PRISMA-ScR guidelines.

Figure 6.1. *PRISMA-ScR Research Flowchart for Study 1.*



6.7 Results

The Garrard Matrix Method (Garrard, 2017) was employed to critically appraise the selected articles, extract and organise key study components, compare findings, identify key themes, synthesise recommendations, and consolidate conceptualisations of emotion dysregulation into a unified framework. During the synthesis phase, each article was read multiple times to inductively identify both commonalities and divergences in how emotion dysregulation was conceptualised.

Table 6.3 presents the resulting matrix, systematically mapping each conceptualisation to its respective author(s), publication, journal, article type, year and country of origin, and study aims. This provides a comprehensive overview of the literature and highlights the diversity of conceptual approaches from a cross-national perspective.

Table 6.3. *Garrard Matrix of Emotion Dysregulation Conceptualisations.*

Author/Year/Country	Paper Title	Journal	Article Type	Study Aim(s)	Conceptualisation of Emotion Dysregulation
Bunford et al., (2015) *USA*	ADHD and Emotion Dysregulation Among Children and Adolescents	*Clinical Child and Family Psychology Review*	Comprehensive Review	(1) To examine the association between emotion dysregulation and ADHD among youth. (2) To examine whether emotion dysregulation is associated with risky behaviours and social impairments with ADHD.	*"Emotion dysregulation is an individual's inability to exercise any or all aspects of the modulatory processes involved in emotion regulation, to such a degree that the inability results in the individual functioning meaningfully below his or her baseline."*
Chua et al., (2021) *USA*	Treatment of Childhood Emotion Dysregulation in Inpatient and Residential Settings	*Child and Adolescent Psychiatric Clinics of North America*	Systematic Literature Review	(1) To summarise existing strategies for the management of emotion dysregulation in inpatient and residential settings.	*"Emotion dysregulation, defined as impairment in the psychological processes that maintain a child's emotional and behavioural self-control, may be a result of lagging development skills (i.e., trait) or a temporary loss of previously acquired skills (i.e., state)."*
Golombek et al., (2020) *Germany*	The role of emotion regulation in socially anxious children and adolescents: a systematic review	*European Child & Adolescent Psychiatry*	Systematic Literature Review	(1) To utilise a process model of emotion regulation as a framework for understanding emotion regulation in children and	*"Emotion dysregulation can be conceptualised as a state in which one's attempts to regulate emotions fail to achieve emotion-related goals despite best efforts, which is*

				adolescents with social anxiety.	*associated with psychopathology."*
Graziano & Garcia (2016) *USA*	Attention-deficit hyperactivity disorder and children's emotion dysregulation: A meta-analysis	*Clinical Psychology Review*	Meta-Analysis	(1) To examine whether there are associations between ADHD and various emotion dysregulation domains, after accounting for co-occurring conduct problems.	*"Broadly speaking, emotion dysregulation occurs when an individual fails to modify an emotional state so as to promote adaptive behaviours that are necessary to accomplish his/her goals."*
Gruhn & Compas (2020) *USA*	Effects of maltreatment on coping and emotion regulation in childhood and adolescence: A meta-analytic review	*Child Abuse & Neglect*	Meta-Analysis	(1) To investigate the impact of early-life maltreatment on coping and emotion regulation processes during childhood and adolescence (5-18 years).	*"Emotion dysregulation can be defined as failing to account for strategies behind dysregulated responses, leading to attempts to interfere with and to delineate controlled and automatic responses."*
Harvey et al., (2019) *Australia*	Dialectical Behaviour Therapy for Emotion Regulation Difficulties: A Systematic Review	*Behaviour Change*	Systematic Literature Review	(1) To investigate and evaluate the current evidence to understand the effectiveness of dialectical behaviour therapy in improving emotion regulation difficulties.	*"Emotion dysregulation evolves via an interaction between the individual's biology and their social environment, beginning in childhood."*
Paulus et al., (2021) *Germany & Austria*	Emotional Dysregulation in Children and Adolescents with	*Frontiers in Psychiatry*	Narrative Literature Review	(1) To provide an overview on the various aspects of	*"Emotion dysregulation is a transdiagnostic construct defined as*

	Psychiatric Disorders. A Narrative Review			emotion dysregulation in children and adolescents with psychiatric disorders, focusing on clinical characteristics, prevention, and therapy.	*the inability to regulate the intensity and quality of emotions (such as, fear, anger, sadness), in order to generate an appropriate emotional response, to handle excitability, mood instability, and emotional over reactivity, and to come down to an emotional baseline."*
Schipper & Petermann (2013) *Germany*	Relating empathy and emotion regulation: Do deficits in empathy trigger emotion dysregulation?	*Social Neuroscience*	Critical Review	(1) To present different studies investigating the relation between empathy and emotion regulation and discuss whether empathy triggers emotion regulation.	*"Deficits in one or both, affective arousal and emotion understanding, are key aspects of emotion dysregulation."*
Shaw et al., (2014) *USA*	Emotion Dysregulation in Attention Deficit Hyperactivity Disorder	*American Journal of Psychiatry*	Mixed Studies Review (Systematic Literature Review & Meta-Analysis)	(1) To explain the overlap between emotion dysregulation and ADHD.	*"Emotion dysregulation encompasses 1) emotional expressions and experiences that are excessive in relation to social norms and are context inappropriate; 2) rapid, poorly controlled shifts in emotion (lability); and 3) the anomalous allocation of attention to emotional stimuli."*
Vacher et al., (2020) *France*	Efficacy of psychosocial interventions for children with ADHD and emotion	*Psychiatry Research*	Systematic Literature Review	(1) To examine the effects of psychosocial interventions in children and	*Definitions of emotion dysregulation are those from Bunford et al.,*

	dysregulation: a systematic review			adolescent with ADHD and emotion dysregulation by focusing on their efficacy for emotion dysregulation management.	*(2015) and Shaw et al., (2014).*
Vogel et al., (2023) *USA*	Review: Defining Positive Emotion Dysregulation: Integrating Temperamental and Clinical Perspectives	*Journal of the American Academy of Child & Adolescent Psychiatry*	Critical Review	(1) To introduce clinicians to research associated with dysregulated positive affect and to review recent studies of positive affect dysregulation in clinical populations.	*"Emotion dysregulation refers to a maladaptive process of emotional experiences or expressions experienced either too intensely or too enduringly."*

Of the 11 articles included in the review, four were systematic literature reviews. This was followed by two meta-analyses, two critical reviews, and two comprehensive reviews. Additionally, one article was a narrative review, and another combined both a meta-analysis and a systematic literature review. The studies focused on emotion dysregulation primarily within two contexts: (1) mental health disorders and (2) psychosocial interventions. Through an inductive synthesis of the findings across these articles, two key characteristics commonly associated with the conceptualisation of emotion dysregulation emerged: (a) difficulties in processing emotions, including challenges related to emotion generation and heightened emotional reactivity; and (b) difficulties in selecting and implementing appropriate strategies or responses needed to support goal-directed behaviour. Notably, one article proposed a conceptualisation that did not align with

either of these categories (see Harvey et al., 2019), instead highlighting the individual's role within their broader social environment.

Theme 1: Emotion Generation and Reactivity

Six studies provided insights on the role of maladaptive emotion generation and reactivity, in conceptualising emotion dysregulation. Importantly, two subthemes emerged from the overall theme of emotion generation and reactivity: (a) issues with functioning, from a cognitive regulation standpoint and (b) issues with the intensity and severity of emotion experiences. For instance, Bunford et al., (2015) illustrated that emotion dysregulation occurs due to impairments in functioning, whereby the individual lacks the ability to regulate their own emotions at the optimum baseline level, leading to psychopathological issues.

Conversely, the other five studies from Paulus et al., (2021), Schipper & Petermann (2013), Shaw et al., (2014), Vacher et al., (2020) and Vogel et al., (2023) focus on the severity and intensity of emotions experienced during dysregulation. Furthermore, Shaw et al., (2014) presents an extended description of the process, whereby excessively experienced emotions may lead to behaviours that are deemed as socially and culturally unacceptable. Importantly, Paulus et al., (2021) presents emotion dysregulation as a transdiagnostic construct, implying that it involves several dimensions, with reference to negative emotions including sadness, fear, and anger.

Overall, the conceptualisation presented by Bunford et al., (2015) do not fully consider functional impairments (e.g., shortened attention span): it is unclear when or how such impairments arise, suggesting that there is a need to disentangle the complex relationship between dysregulation and associated cognitive deficits. Furthermore, conceptualisations that focus on the presentation of dysregulation symptoms have weighed more on negative emotions, despite being previously defined as a multidimensional construct. Therefore, other factors including the failure

to regulate positive emotions, may also be important to investigate, to gain a holistic overview of the mechanism.

Theme 2: Adopting Appropriate Strategies

Four studies - Chua et al., (2021); Graziano and Garcia (2016); Gruhn and Compas (2020) and Golombek et al., (2020) - provided insights into emotion dysregulation conceptualisations, by focusing on the failure to achieve goal-directed behaviours. For example, Graziano and Garcia (2016), alongside Golombek et al., (2020) reflect upon the importance of failing to modify an emotional state, leading to issues in achieving emotion-related goals (see subsection 6.8 for Discussion). Crucially, both papers discuss emotion dysregulation in the context of emotional states, indicating that negative emotions, including sadness, may be an outcome of attempting to adopt an appropriate strategy, but failing to attain goal-directed behaviours, such as self-soothing.

Moreover, Chua et al., (2021) and Gruhn & Compas (2020) highlight other aspects of adopting appropriate strategies, referring to self-control and delineating from controlled and automatic responses. Chua et al., (2021) suggests that impairments in both emotional and behavioural self-control may be due to developmental issues, including problems with acquiring relevant skills or developmental delays, which lead to dysregulation. Taken together, developmental trajectories and failing to adopt appropriate coping mechanisms may play a key role in shaping the course of emotion dysregulation and must be further explored to understand its implications for associated impairments among youth.

Most emotion dysregulation conceptualisations presented do not account for development (see Table 6.3) and instead, reflect upon issues in processing emotions, reaching goal-directed behaviours and overall impairments in functioning. Harvey et al., (2019) offered a developmental perspective on emotion dysregulation, describing it as an evolving process between individuals

and their environment starting in childhood. This raises questions about external influences shaping emotion dysregulation trajectories, alongside bidirectional relationships, which have not been fully explored in prior research.

6.8 Discussion

Summary of Findings

The scoping review sought to answer a meaningful question to inform practitioners and clinicians: *how is emotion dysregulation conceptualised in the context of middle childhood?* The findings highlight two critical factors associated with emotion dysregulation in this developmental stage. Firstly, there are issues related to the processing of emotions, particularly during the generation and reactivity stages of emotional responses. Children may struggle to recognise, label, or understand their emotions, leading to heightened emotional intensity and dysregulated reactions. This difficulty in processing emotions, which often manifests as an inability to accurately identify and manage emotional states, is an important area of concern, as it may lead to maladaptive emotional responses (Rapee et al., 2019). Additionally, difficulties in emotional processing can hinder children's ability to cope with stressors, potentially exacerbating emotion dysregulation. As such, addressing these developmental challenges is crucial for fostering more effective emotion regulation strategies in this age group.

Secondly, issues with adopting appropriate coping strategies are a significant factor in emotion dysregulation. Research indicates that children may resort to maladaptive coping mechanisms, such as avoidance or suppression, when faced with emotional challenges (Skinner & Zimmer-Gembeck, 2007). Coping strategies, such as behavioural avoidance, experiential avoidance, or emotional suppression hinder the child’s ability to regulate emotions in adaptive

ways, which can result in exacerbated emotion dysregulation and negative long-term outcomes (Sideridis, 2006). These maladaptive strategies can also prevent children from developing more effective problem-solving skills, leaving them ill-equipped to handle future emotional difficulties. Consequently, these patterns of emotion regulation may persist into adolescence, contributing to the onset of more severe emotional and behavioural issues. These findings suggest that emotion dysregulation in middle childhood is not solely an internal process related to emotional reactivity and coping, but is influenced by a complex interaction of developmental, environmental, and social factors. This broader, multidimensional understanding of emotion dysregulation could inform future interventions that consider, both the internal emotional processes and the external social contexts, in which children navigate their emotions.

Coping Mechanisms and Emotion Dysregulation

Prior literature emphasises understanding the development of emotion dysregulation, including how strategies evolve, when they become effective, and how ineffective strategies change with age (Cole et al., 2019; Sideris, 2006). For instance, a child may use avoidance or dissociation to cope with anxiety in familial conflict, but these strategies may become ineffective in adolescence due to biological changes including puberty (Schäfer et al., 2017). Indeed, research focusing on developmental differences during childhood and coping mechanisms have been difficult to integrate. Skinner and Zimmer-Gembeck (2007) propose that coping definitions borrowed from adulthood may not apply directly to childhood, lacking developmental frameworks for this stage. During middle childhood, internalising coping (e.g., blaming oneself for being too emotional) acts as a mediator between shyness and internalising difficulties (e.g., loneliness and negative affect; Findlay et al., 2009). This coping mechanism exacerbates emotional distress, leading to further withdrawal and reinforcing negative self-beliefs, which can contribute to long-

term mental health issues. Additionally, such patterns of coping can hinder the development of adaptive emotion regulation strategies, making it more difficult for children to manage emotions in social contexts.

Linking this to the current review, Gratz and Roemer (2004) identify six deficits in emotion regulation that may hinder coping: (a) lack of emotional awareness, (b) lack of emotional clarity, (c) nonacceptance of emotional responses, (d) impulse control difficulties, (e) limited access to regulation strategies, and (f) difficulty engaging in goal-directed behaviour when aroused. Gross and Barrett (2011) suggest that factors regulating emotion onset may prevent unwanted emotion activation or enhance desired ones through situation selection or modification. Taken together, these findings represent the significance of considering coping mechanisms into conceptualisations of emotion dysregulation, as it could lead to a better understanding of how children manage emotionally challenging situations in real-life contexts.

Considering Developmental Antecedents for Emotion Dysregulation

The present review has considered key characteristics in emotion dysregulation conceptualisations, including functioning, the severity of emotions, and failing to reach goal-directed behaviours. Yet, development antecedents, including adverse childhood experiences (ACEs) and bidirectional relationships between the child and the environment, may also serve a key purpose in understanding dysregulation trajectories. From a developmental standpoint, ACEs, an umbrella term encompassing trauma exposure, parental psychopathological issues, and family dysfunction, put young people at risk for functional long-term impairments (Woods-Jaeger et al., 2018). Familial conditions may be an important characteristic to consider in emotion dysregulation conceptualisations, as literature suggests that family members' emotional expressions and their

predictability shape how children manage their emotions (Thompson, 2019). Furthermore, children exposed to ACEs may develop heightened emotional reactivity and a diminished ability to regulate their emotions, which can perpetuate maladaptive coping strategies. This underscores the importance of considering the broader familial and environmental context, when conceptualising emotion dysregulation and its potential long-term effects.

Social constructivist theorists emphasise the significance of individuals developing themselves through interactions with others, as well as the environment in which they reside (Kim, 2001). As presented in the results (see subsection 6.7), the conceptualisation from Harvey et al., (2019) considers the relationship between the individual (the child) and its social environment, in relation to dysregulation emerging. Oloye and Flouri (2021) explored the role of the home environment on children's self-regulation, illustrating that quiet home environments positively influence a child's ability to regulate, compared to disorganised environments. Furthermore, children with poor self-regulation and higher levels of emotional intensity have less constructive reactions to anger when interacting with peers, such as avoidance and escape (Eisenberg et al., 1998). Linking this to the present review, children with greater emotion dysregulation and lower independence (e.g. throwing tantrums) are more likely to cause disorder in the home and reduce their chances of success in social interactions (Barnes et al., 2013). Overall, the role of the home environment, alongside schooling and extracurricular activities, may be important perspectives to consider in future conceptualisations.

A New Conceptualisation

From this review, prior definitions of emotion dysregulation demonstrate that there has been more focus on the processes and mechanisms by which emotion regulation fails to reach optimal thresholds, leading to dysregulation (see Table 6.3; Gratz & Roemer, 2004). While useful,

such conceptualisations fail to fully account for the developmental factors at play, particularly during middle childhood, a crucial period in which emotion regulation processes are still evolving.

In response to this gap, it is important to better understand the specific elements that contribute to emotion dysregulation in middle childhood. Through a careful examination of the processes involved, I propose a new conceptualisation below:

Emotion dysregulation in middle childhood can be conceptualised as a dynamic, context-dependent phenomenon that requires a balance between acknowledging the child's developing emotional processes, their coping mechanisms, and the surrounding social environment.

The following three components form the basis for this new conceptualisation and are discussed in further detail below:

1. Emotion processing and regulatory difficulties
2. Coping mechanism development and challenges
3. Environmental Influences

Emotion Processing and Regulatory Difficulties

Emotion dysregulation is fundamentally rooted in difficulties with recognising, processing, and responding to emotions. Middle childhood represents a crucial period in emotional development, as children continue to refine their emotional processing abilities. During this stage, the challenges in accurately identifying and managing emotional states can significantly contribute to dysregulated emotional responses. These difficulties become particularly pronounced when

children encounter external stressors, such as peer victimisation or academic pressure (Low et al., 2019). Despite the critical role of emotional processing in dysregulation, much of the existing literature tends to overlook this aspect, instead focusing predominantly on emotional intensity or maladaptive behavioural responses (Rapee et al., 2019). This narrow focus fails to address the underlying developmental difficulties children experience in processing emotions. By neglecting the complexities of emotion recognition and regulation, previous research may overlook key mechanisms that contribute to long-term emotional maladaptation. A more nuanced understanding of how children develop these emotional skills and the barriers they face in doing so could significantly enhance the way emotion dysregulation is conceptualised and treated in middle childhood.

Coping Mechanism Development and Challenges

As children grow and mature, they begin to develop and refine their coping strategies for managing emotions. However, during middle childhood, the adoption of adaptive coping mechanisms, such as reappraisal or problem-solving, is not always successful. When these strategies are not adequately developed or effectively employed, emotion dysregulation can ensue. Notably, these coping mechanisms are influenced not only by individual temperament but also by a child's caregiving environment and broader social context. Early attachment experiences, such as the quality of attachment to primary caregivers, as well as parenting practices, are pivotal in shaping whether children learn to regulate emotions in healthy ways (Sideridis, 2006). Children who receive consistent emotional support and modeling from caregivers are more likely to adopt adaptive coping strategies (Laumakis et al., 1998). Conversely, those exposed to inconsistent caregiving or emotional neglect may struggle to develop these critical skills. Previous models of emotion dysregulation have tended to focus predominantly on individual traits or tendencies, often

neglecting the significant influence of the social and relational environment in shaping emotion regulation (Sideridis, 2006). This gap underscores the need for a more holistic approach to understanding emotion dysregulation, which considers the interaction between the child's internal characteristics and external influences.

Environmental Influences

A crucial factor in emotion dysregulation is the role of the child's environment, which encompasses family, school, and peer relationships. The emotional climate of the home, including parenting practices and attachment styles, provides the foundational support for a child's ability to regulate emotions (Oloye & Flouri, 2021). For instance, responsive parenting and secure attachment have been linked to more effective emotion regulation skills, as children internalise these positive relational experiences (Frosch et al., 2021). In contrast, inconsistent or neglectful parenting can lead to difficulties in managing emotions, contributing to dysregulated responses. In addition to family dynamics, the school environment also plays a critical role in shaping emotion regulation. Peer relationships, teacher-student interactions, and the academic pressures faced by children can significantly influence their emotional responses and coping strategies (Collins & Madsen, 2019). Children who experience positive social interactions and support within these contexts are more likely to develop adaptive emotion regulation skills. However, those who face social exclusion, bullying, or academic failure may struggle with dysregulated emotional responses. This highlights the notion that emotion regulation is not merely an individual issue but is profoundly shaped by the child's broader social and environmental context. Previous models of emotion dysregulation have often focused on internal, individual struggles, such as biological or temperamental factors, but this perspective underscores the need to understand how external influences, family dynamics, peer relationships, and school experiences, can significantly impact

emotional development (Collins & Madsen, 2019; Frosch et al., 2021). The interaction between internal traits and external factors offers a more comprehensive framework for understanding emotion dysregulation and emphasises the importance of considering the social environment in therapeutic or preventive interventions.

These perspectives suggest that emotion dysregulation is not a fixed trait but an evolving phenomenon that changes over time in response to both internal and external factors. It highlights the complexity of emotion regulation during middle childhood, where developmental, environmental, and social influences all play critical roles in shaping emotional outcomes. This conceptualisation offers several important advancements over previous models. It moves beyond the narrow focus on emotional intensity or maladaptive responses, placing greater emphasis on the developmental difficulties in emotional processing and coping mechanisms. It also acknowledges the importance of the social environment in shaping emotion regulation, an area that has been underexplored in prior research. By integrating these three components, emotion processing, coping mechanisms, and environmental influences, this new conceptualisation provides a more comprehensive and developmental understanding of emotion dysregulation in middle childhood. This conceptualisation highlights the importance of viewing emotion dysregulation in middle childhood as a dynamic and evolving process, shaped by the interaction of internal and external influences.

Strengths of Study 1

Study 1 demonstrates notable strengths. By considering the 'whole population' as a sample, which includes both typically developing children and those with pre-existing mental health disorders, it captures a broader range of academic conceptualisations during the screening process. Importantly, while the papers retrieved from the synthesis stage focused primarily on emotion

dysregulation in the context of psychopathology among youth, this alignment with existing literature underscores the robustness of the findings and reinforces their relevance to the broader understanding of mental health disorders (see Chapter 4).

Another key strength of this paper was the use of the Garrard Matrix Method (2017), which facilitated a more systematic approach to identifying key differences and similarities between various conceptualisations of emotion dysregulation. By providing a clear and structured framework, this method allowed for the efficient extraction of key themes, such as difficulties in processing emotions and challenges in achieving goal-directed behaviours. Furthermore, the matrix method ensured that these themes were consistently identified across a range of studies, contributing to a more comprehensive understanding of the factors influencing emotion dysregulation. This approach not only streamlined the analysis but also ensured that the findings were grounded in a thorough and well-organised comparative framework.

Finally, to the best of my knowledge, this study is the first to explore how emotion dysregulation can be conceptualised in middle childhood, proposing a novel conceptualisation that integrates diverse perspectives on emotion dysregulation trajectories and the impact of the environment. By incorporating critical factors such as developmental stages and environmental influences on emotion dysregulation symptoms, this study provides valuable and impactful insights into the mechanisms at play. These perspectives offer a foundation for future research, particularly studies examining how emotion dysregulation is measured across key developmental stages, including infancy and adolescence.

Limitations of Study 1

There are several limitations to address in Study 1. Firstly, there was a sole focus on emotion dysregulation, as it considers pre-existing mental health disorders, as opposed to other

interchangeable terminologies. While the scoping review acknowledged this limitation, incorporating additional synonyms such as 'emotion lability' and 'emotion impulsivity' could have broadened the scope of the literature, potentially yielding different results by capturing a wider range of conceptualisations and perspectives. Therefore, including these terms may have provided a more comprehensive understanding of the construct, enriching the overall findings.

Secondly, the review conducted was a 'review of reviews,' rather than focusing on empirical studies or clinical trials. The reviews themselves varied in methodological approaches, including narrative and systematic reviews, which raises some concerns about the validity of directly comparing their findings. Although the primary focus was on conceptualisations of emotion dysregulation, the differing methodologies of the reviews could have influenced how the findings were presented, introducing inconsistencies that may affect the overall conclusions. Future follow-up studies could benefit from focusing on primary empirical studies or clinical trials, to provide more robust and comparable data on the topic.

A limitation identified following the synthesis is the absence of a formal quality assessment of the included studies. While not required by PRISMA-ScR for scoping reviews, such an appraisal could enhance interpretability and confidence in findings, particularly when studies vary in methodological rigour (Khalil et al., 2021). Given the review's aim to map the literature rather than evaluate quality, the approach taken was appropriate. However, the lack of formal quality assessment may affect interpretation, and future studies should incorporate it to strengthen findings and provide clearer insights for practice and future research.

Finally, the conceptualisations of emotion dysregulation in this paper were limited to the field of psychology, with perspectives from other disciplines such as neurology and pharmacology excluded. By not incorporating interdisciplinary perspectives, the review may have missed valuable insights that could have expanded the understanding of emotion dysregulation,

particularly regarding its cognitive and social aspects (see Crick & Dodge, 1994). For example, research from neurology or pharmacology might offer alternative conceptualisations that highlight the biological and pharmacological factors influencing emotion regulation, further emphasising the need for a more holistic overview of the mechanism in future research.

Transition to Subsequent Chapters

Unlike externalising disorders that primarily emerge in adolescence, ADHD symptoms, including emotion dysregulation, are often evident as early as preschool and become more pronounced in middle childhood (Nigg, 2013). Therefore, ADHD may serve as a particularly relevant avenue for reconceptualising emotion dysregulation in middle childhood due to its strong associations with emotional impulsivity, frustration tolerance, and difficulties in self-regulation. Children with ADHD frequently struggle with rapid mood shifts, excessive emotional reactivity, and difficulty modulating their responses to environmental stimuli, all of which are central components of emotion dysregulation (Martel, 2009). In addition to regulating their own emotional responses, these children may also have difficulty interpreting, responding to, or managing the emotional expressions of others. This reflects impairments in extrinsic emotion regulation, the ability to influence and respond to others' emotional states, which is increasingly recognised as a key aspect of socio-emotional development (Zaki & Williams, 2013). Moreover, the neurobiological underpinnings of ADHD, such as deficits in prefrontal cortex functioning and altered reward processing, align with emerging models of emotion dysregulation, suggesting that ADHD can serve as a case study for understanding broader emotion regulation difficulties in children (Posner et al., 2014). Given that emotion dysregulation is one of the strongest predictors of poor long-term outcomes in individuals with ADHD, including increased risk for anxiety, depression, and conduct problems (Chronis-Tuscano et al., 2010), integrating ADHD into

reconceptualisations of emotion dysregulation may enhance the accuracy and applicability of youth psychopathology models, particularly with respect to middle childhood.

6.9 Summary and Concluding Thoughts

This chapter has presented **Study 1** as the conceptual foundation of the thesis, focusing on a critical examination of existing literature on emotion dysregulation in middle childhood. The aim was to explore how the construct is currently defined and understood. Through this process, a revised conceptualisation has been proposed, incorporating several key dimensions that have been underrepresented in prior research. While existing frameworks often recognise aspects such as functional impairments, negative emotionality, and difficulties in achieving goal-directed behaviour, they tend to overlook other crucial elements. Notably, factors such as (a) coping mechanisms specific to middle childhood, (b) environmental influences on dysregulation, and (c) difficulties in extrinsic emotion regulation warrant greater integration in future theoretical models.

A key gap identified across the reviewed literature is the insufficient consideration of developmental progression. Although many studies refer to 'youth' broadly, few differentiate between stages of emotional development, making it difficult to account for age-specific trajectories. Recognising developmental milestones and the dynamic nature of emotion regulation processes is essential to understanding how dysregulation emerges and transforms over time. Furthermore, the review emphasises that emotion dysregulation is not a global construct: it is often shaped by contextual demands, individual goals, and broader environmental factors. What constitutes ‘optimal’ emotion regulation may therefore vary depending on personal characteristics, social context, and co-occurring disorders. Future research must take these complexities into

account to better inform the assessment and early identification of emotion dysregulation and associated psychopathologies.

Given its early onset, persistence, and close relationship with emotion dysregulation, ADHD emerges as a particularly valuable lens through which to refine our understanding of emotion dysregulation in middle childhood. By investigating ADHD within this conceptual framework, there is potential to uncover transdiagnostic mechanisms and develop more targeted intervention strategies for children experiencing emotional and behavioural regulation difficulties. A reconceptualisation that explicitly considers ADHD may also help to bridge critical gaps between developmental and clinical research in developmental psychopathology. The findings from this scoping review provide a foundation for **Study 2**, which will explore how parenting practices and ADHD symptoms intersect with emotion dysregulation in middle childhood. Drawing on two secondary data cohorts, the next phase of the research will investigate the interaction between these variables, with the aim of constructing a more comprehensive and developmentally sensitive framework for understanding emotion dysregulation in middle childhood.

Chapter Seven

Study 2 - A Dual Cohort Analysis of Parenting Practices, ADHD, Anger, and Emotion Dysregulation

7.1 Introduction

This chapter presents **Study 2**[2] of the thesis, which investigates the cross-sectional and longitudinal associations between ADHD symptoms, emotion dysregulation, anger, peer relationship problems, and conflict coping strategies, using two longitudinal datasets: the UK MCS **(Study 2A)** and z-proso **(Study 2B)**. The chapter begins by highlighting the advantages of using secondary longitudinal data in youth mental health research. Next, the methodology and research design of each study is outlined, respectively, including the rationale for dataset selection, ethical considerations, sample characteristics, key measures, statistical procedure, preliminary analyses, and the results. Finally, the strengths and limitations from Study 2 are presented, before concluding the chapter with some final reflections.

7.2 Secondary Data in Youth Mental Health Research

The increasing availability of large-scale online data repositories has significantly improved researchers' ability to conduct secondary data analysis, offering greater efficiency and transparency in psychological and developmental research (Weston et al., 2019). Secondary data, defined as data collected independently of a specific research study's aims, allows for the

[2] Chapter 7 includes a published paper and can be cited as follows: Antony, E. M. A., Beckmann, N., & Higgins, S. (2025). A Dual Cohort Analysis of Parenting Practices, ADHD, Anger, and Emotion Dysregulation in Middle Childhood: Findings from a UK and Zurich Sample. *JCPP Advances,* e70059. https://doi.org/10.1002/jcv2.70059

examination of psychological and behavioural patterns in diverse populations while maximising statistical power and generalisability (Johnston, 2014; van den Akker et al., 2021). Specifically, secondary data sources such as the MCS and z-proso provide unique opportunities to investigate developmental trajectories and the early markers of mental health difficulties.

A key strength of secondary data is its ability to capture policy-relevant outcomes, including wellbeing and mental health indicators, due to its comprehensive coverage of social, cognitive, and emotional domains (Greenhoot & Dowsett, 2012; Panchenko & Samovilova, 2020). This breadth allows for robust, large-scale analyses that would otherwise be difficult to achieve with primary data collection, particularly in longitudinal studies (Ployhart & Ward, 2011). Longitudinal secondary data is especially valuable for developmental psychopathology research, as it enables researchers to track changes in mental health symptoms over time and identify early risk factors for psychiatric disorders (Spiranovic et al., 2016). The MCS, which follows a nationally representative cohort of children in the UK from infancy to early adulthood, provides detailed measures on cognitive, emotional, and behavioural development, making it a crucial resource for studying middle childhood psychopathology (Wyse et al., 2016). Likewise, z-proso offers extensive longitudinal data on social and emotional development in a European context (Eisner & Ribeaud, 2021), with a strong emphasis on externalising and internalising behaviours across childhood and adolescence.

To gain a more comprehensive understanding of these complex dynamics, longitudinal data is invaluable as they allow for the examination of how ADHD symptoms, emotion dysregulation, anger, and social outcomes evolve over time (Greenhoot & Dowsett, 2012; Ployhart & Ward, 2011). Longitudinal studies are particularly useful for investigating how early emotional and social difficulties may lead to deep-rooted problems later in childhood and adolescence (Spiranovic et al., 2016). For instance, longitudinal studies can provide insight into the cumulative

nature of ADHD-related difficulties and their interplay with peer relationships and coping strategies over time (Loeber & Burke, 2011). Research has shown that early interventions targeting ADHD symptoms, emotion regulation, and social skills can have a significant impact on long-term outcomes, suggesting the importance of identifying children at risk as early as possible (Sonuga-Barke, 2013; Willoughby et al., 2016). Given its repeated assessments of psychosocial and emotional development, the MCS is well suited for investigating these questions. By leveraging both the MCS and z-proso, this study will provide a nuanced understanding of how early life experiences, family dynamics, and socio-environmental factors contribute to the development of mental health disorders.

Furthermore, secondary data analysis enables a more transparent and reproducible approach to research, particularly when pre-registration frameworks are followed to enhance methodological rigour (van den Akker, 2021; Weston et al., 2019). When researchers adopt pre-registration frameworks, they enhance methodological rigour by specifying their hypotheses, analytical strategies, and expected outcomes in advance, thereby minimising data-driven decision-making and the potential for p-hacking (van den Akker, 2021). Pre-registration also promotes open science practices, ensuring that analytical choices are documented and making it easier for other researchers to verify, critique, or extend previous work. Given the complexity of developmental research, where multiple factors interact over time, the structured and systematic use of secondary data, particularly when combined with pre-registration, helps establish robust, replicable findings that contribute meaningfully to evidence-based policy and intervention strategies.

Overall, utilising large-scale longitudinal datasets, including the MCS and z-proso, will allow for a robust exploration of middle childhood mental health, offering insights into the early identification of risk factors and informing prevention and intervention strategies. By drawing on both UK and Zurich data sources, Study 2 aims to contribute to a broader understanding of the

developmental mechanisms underlying youth psychopathology, emotion dysregulation, and parenting practices, from a cross-national perspective.

7.3 Study 2A: The UK Millennium Cohort Study

The UK MCS is a longitudinal, multidisciplinary study that follows the lives of more than 19,000 children born in the UK in 2000-2001. The MCS began when the children were around 9 months old, and follow-up surveys have taken place at ages 3, 5, 7, 11, 14, 17, and 23 years (Connelly & Platt, 2014). The study collected data on numerous physical (e.g., weight, height) and psychological (e.g., cognitive skills, prosocial behaviour) aspects, alongside comprehensive demographic information (e.g., parental education, SES) (Centre for Longitudinal Studies [CLS], 2017; Connelly & Platt, 2014;). Participants from all four nations of the United Kingdom (England, Scotland, Wales and Northern Ireland) were included in the sample. The population is specifically defined as 19,244 families (Plewis et al., 2007), with all children born between 1 September 2000 and 31 August 2001 (for England and Wales), and between 24 November 2000 and 11 January 2002 (for Scotland and Northern Ireland), alive and living in the UK at 9 months old. Although middle childhood is conventionally defined as ages 6-12, the inclusion of age 5 in this analysis is justified and detailed in the rationale below. ADHD symptoms and peer relationship problems were reported using the *Strengths and Difficulties Questionnaire* (Goodman, 1997, 2001). Emotion dysregulation was assessed using the *Child Social Behaviour Questionnaire* (Hartman et al., 2006), while parenting practices were measured via *Straus' Conflict Tactics Scale* (1997).

Sweep Information

The Age 5 sweep examined the first year of primary schooling alongside childhood health, childcare, education, social and family circumstances (Hansen et al., 2014). The Age 7 Sweep examined mid-childhood experience of schooling, alongside the same areas covered in the Age 5 Sweep (Hansen et al., 2014). Parents answered questions via self-completion modules on several topics, with some examples including family composition, housing and local area, and parental education, (Hansen et al., 2014). At Age 7, cohort members were given a short, self-completion questionnaire, covering appropriate topics including hobbies, school, relationships (friends and family) and attitudes (Hansen et al., 2014). At Age 11, information gathered on cohort members via self-completion modules focused on topics such as bullying, schooling and relationships, with parents completing questions on children's puberty, behaviour and development (Gallop et al., 2013).

Rationale

By using the UK MCS for a thesis focused on youth psychopathology (i.e., ADHD), emotion dysregulation, and parenting practices, it offers numerous advantages to this research project, due to its comprehensive longitudinal design and rich dataset. The MCS provides extensive data on children born in the UK in 2000-2001, enabling researchers to examine developmental trajectories and long-term outcomes.

While middle childhood is traditionally defined as ages 6-12 (Berk, 2015), the inclusion of data from children aged 5 is critical for several key reasons. First, longitudinal research often necessitates the use of all available measurement points to optimise the utility and statistical power of the dataset (Ployhart & Ward, 2011). Given the fixed measurement waves in this study, excluding age 5 would limit the ability to analyse developmental trends and continuity across the

full span of early childhood through middle childhood, potentially weakening the conclusions drawn from the data. Second, age 5 represents a pivotal transitional period between early childhood and formal schooling, where significant changes in cognitive, emotional, and social development are occurring. At this age, children are typically beginning formal education and engaging in more structured social environments, which are closely linked to emerging behavioural and emotion regulation (Rothbart & Rueda, 2005). By including this age, it allows for the identification of early markers of ADHD symptoms and emotion dysregulation that may not be apparent in later years, providing a more comprehensive understanding of the developmental trajectories leading into middle childhood. Finally, research indicates that early childhood experiences, including parenting practices and emotion regulation, have a lasting impact on behaviour throughout middle childhood (Blair, 2010). The inclusion of data at age 5 ensures that early influences are captured and can better examine their long-term effects on outcomes such as peer relationship problems. Thus, the incorporation of this data point enables a more holistic view of early developmental patterns that shape the trajectory of children's behaviour into later childhood.

With a large, nationally representative sample, the study ensures that findings can be generalised to the broader UK population, enhancing the external validity of the research. The MCS's multidisciplinary data collection, which includes detailed information on mental health, family environment, socio-economic status, and parenting practices, as well as linked health records, allows for a thorough analysis of factors influencing youth psychopathology and emotion dysregulation, which may include (but are not limited to) SES and gender. Specifically, the study's longitudinal nature permits the exploration of how parenting practices impact the development of ADHD and emotion dysregulation trajectories, over three age groups of ages 5, 7 and 11.

The rich contextual information available, such as parental employment, income, and housing conditions, provides valuable insights into the social determinants of ADHD and

developmental outcomes of children over time. Additionally, the MCS supports the examination of longitudinal associations, helping to identify potential causal relationships and changes across different developmental stages, including middle childhood. By leveraging the high-quality, accessible data from the MCS, this thesis can contribute to understanding the longitudinal associations between emotion dysregulation symptoms, ADHD symptoms and parenting practices, thus informing interventions and policy decisions aimed at improving child mental health outcomes, which may include educational attainment and positive wellbeing.

7.3.1 Theoretical Background

ADHD may serve as a moderating variable in the relationship between discipline parenting practices and outcomes including emotion dysregulation, peer relationship problems, and conflict coping (Breaux et al., 2018; García et al., 2021). Indeed, children may also face greater challenges in forming positive peer relationships, as their impulsivity and emotional outbursts alienate peers and hinder the development of social skills (Barkley, 2015). Studies have shown that children with high ADHD symptom severity are at greater risk of peer rejection and emotional distress, and that the relationship between ADHD and these outcomes is amplified when anger is also present (Hinshaw & Lee, 2003; Melnick & Hinshaw, 2000). Emotion dysregulation in children with ADHD manifests as heightened emotional reactivity, difficulty modulating emotional responses, and prolonged recovery from distressing experiences (Bunford et al., 2015). These deficits are closely linked to an increased risk of peer rejection and social difficulties, as children who struggle with regulating their emotions often exhibit impulsive, aggressive, or socially inappropriate behaviours (Mikami, 2010). Peer relationships are crucial for social development, and children with ADHD frequently experience peer rejection, victimisation, and difficulty forming stable

friendships (Hoza, 2007). Poor peer relationships in middle childhood have been associated with long-term negative outcomes, including increased risk for anxiety, depression, and antisocial behaviour in adolescence and adulthood (Mrug et al., 2012).

Parental discipline practices play a significant role in shaping emotion regulation and social competence in children with ADHD. Negative discipline practices, such as harsh punishment and inconsistent discipline, have been linked to increased emotion dysregulation and externalising behaviours, which, in turn, exacerbate peer difficulties (Gershoff & Grogan-Kaylor, 2016). Conversely, positive parenting approaches, characterised by warmth, consistency, and emotion coaching, can support the development of self-regulation skills and improve peer interactions (Roskam et al., 2014). However, children with ADHD often present unique challenges for caregivers, leading to a higher likelihood of negative child-parent interactions that can reinforce maladaptive emotional and social behaviours (Johnston & Jassy, 2007). Several demographic and socio-economic factors influence ADHD symptoms, emotion dysregulation, and peer relationships. Gender differences are notable, with males generally displaying higher levels of impulsivity and externalising behaviours, including anger, compared to females (Nigg & Casey, 2005). SES is another crucial factor, as children from lower SES backgrounds are often more vulnerable to emotional and behavioural difficulties due to greater exposure to stressors and fewer resources (Evans & Kim, 2013). Additionally, maternal education level has been linked to children's emotional development, with higher educational attainment often correlating with better parenting resources and a more supportive environment (Davis-Kean, 2005). Recognising these demographic factors allows for a more nuanced understanding of the complex interactions that shape emotional and social development in children with ADHD.

7.3.2 Research Questions

The Study 2A RQs are reiterated here to maintain analytical coherence (see Chapter 5; subsection 5.3; Table 5.1 for hypotheses):

Overarching Research Questions

RQ2) What key demographic factors contribute to the development and persistence of emotion dysregulation symptoms in children aged 5 and 7?

RQ3) What moderating role do ADHD symptoms have in the relationship between parenting practices and emotion dysregulation symptoms in children aged 5, 7 and 11?

RQ4) What moderating role do ADHD symptoms have in the relationship between parenting practices and peer relationship problems in children aged 5, 7 and 11?

7.3.3 Ethical Considerations

Ethical approval for Studies 2A and 2B were granted by School of Education Research Ethics Committee, Durham University (Ref: EDU-2023-09-21T12:44:50), with an amendment approved on 10th May 2024 (Ref: EDU-2024-05-10T12:49:41; see Appendix A). The amendment was needed for Study 2B, due to a refined focus on the cross-national Western European urban context, instead of the originally proposed Young Lives Study. Both studies adhered to ethical guidelines from the British Educational Research Association (BERA, 2024) and the British Psychological Society (Oates et al., 2021), maintaining standards of confidentiality, anonymity, and research integrity.

MCS

To enhance transparency and rigour, the MCS project was pre-registered on the Open Science Framework (Antony et al., 2024b), in line with recommendations for improving research robustness (Appelbaum et al., 2018; Bosnjak et al., 2021; Kathawalla et al., 2021). Data were accessed via the UK Data Service (Project ID: 257618), following license agreements and confidentiality protocols. Files were stored on a password-protected laptop with additional encryption. All required agreements, including those prohibiting participant identification or cross-referencing with other datasets, were electronically signed (see Appendix B). Publicly available MCS documentation, including technical reports and cohort profiles, supported data handling (Connelly & Platt, 2014; Johnson et al., 2015; Plewis et al., 2007).

The National Health Service Research Ethics Committee provided ethical approval to the MCS at each cycle of data collection. Informed consent procedures included obtaining written parental consent for the participation of a child before parts of the survey could be administered (Hansen et al., 2014; Johnson et al., 2015; Plewis et al., 2007). Written consent for linkage to health records and school records was also collected. The wellbeing of interviewers and participants and the confidentiality of responses were ensured through appropriate measures. It was possible for interviewers to leave some of the data collection consent forms until later in the interview, and prompts were built into several places within the Computer-Assisted Personal Interviewing (CAPI) Questionnaire.

7.3.4 Sample Characteristics

With respect to representation within the original MCS sample, approximately 82% of cohort members were White, 2.5% were Indian, 4.8% were Pakistani, 2% were Bangladeshi, 1.3% were Black Caribbean, 2% were Black African and 3% had mixed ethnicity (Connelly & Platt, 2014). To account for a range of socio-economic backgrounds, 9% of fathers and 8% of mothers came from affluent social groups, whereas 12% of fathers and 14% of mothers were from working-class social groups (Connelly & Platt, 2014). An exclusion criterion for the sample was selected from the Child Benefit register maintained by the Department of Social Security, with a small number of children of recent immigrants and non-national temporary residents (e.g., foreign students) deemed ineligible to participate (Connelly & Platt, 2014). The survey design incorporated oversampling of ethnic minority groups and disadvantaged families, ensuring adequate representation in the sample and providing accurate prevalence estimates, alongside robust standard errors (Connelly & Platt, 2014). A stratified design and weights provided by the MCS were used to ensure adequate representation of disadvantaged and ethnic minority children and to handle non-random attrition (Hansen, 2014; Heeringa et al., 2017; Johnson et al., 2015; Plewis et al., 2007).

7.3.5 Participants

Study 2A focuses on the MCS3 (age 5), MCS4 (age 7) and MCS5 (age 11) sweeps.[3] Only participants and parents who had completed all relevant surveys were included in the analyses. At age 5, there were 15,460 cohort members, with data being collected during January to December

[3] Hereafter, the MCS 3-5 Sweeps will be referred to using age groups (i.e., ages 5, 7 and 11).

2006 (Joshi & Fitzsimons, 2016). At age 7, there were 14,043 cohort members, with data collected between January to December 2008. At age 11, there were 13,469 cohort members, with data being collected between January 2012 to February 2013. Following data cleaning (see subsection 7.3.7 for details), the sample range of 2,220 - 30,135 participants were used in Study 2A.

7.3.6 Measures

Child Social Behaviour Questionnaire - Emotion Dysregulation (Ages 5 and 7)

Emotion dysregulation was measured using the Emotional Dysregulation subscale of the *Child Social Behaviour Questionnaire* (CSBQ; Hartman et al., 2006), comprising five items: (1) *shows mood swings; (2) gets over excited; (3) easily frustrated; (4) gets over being upset quickly; and (5) acts impulsively*. It was administered in the self-completion module of the parent interview at ages 5 and 7. Parents rated their child's behaviour over the past six months as: 'Not true' (1), 'Somewhat true' (2), 'Certainly true' (3), or 'Can't say' (4), with "Can't say" treated as missing. Scores (range 5-15) were calculated as the sum of completed items. Four items indicated greater dysregulation with higher scores; one item ('quickly gets over being upset') was reverse-coded. The CSBQ has demonstrated good reliability, structural validity, and criterion validity (Hartman et al., 2006). Omega was used as a more accurate reliability estimate than Cronbach's alpha (McDonald, 1999; Peters, 2014), with omega = .80 at ages 5 and 7 in the current sample.

Strengths and Difficulties Questionnaire - ADHD symptoms (Ages 5 and 7)

ADHD symptoms were measured using the *Strengths and Difficulties Questionnaire* (SDQ; Goodman, 1997), with the Hyperactivity/Inattention scale. The SDQ captures a broader symptom range, including subthreshold cases linked to mental health disorders, including anxiety

and depression (He et al., 2024). Prevalence rates vary with definitional and methodological differences (Panagi et al., 2022) and a dimensional assessment of ADHD symptoms using the SDQ was preferred over the categorical parent-reported diagnosis in the MCS, which showed lower prevalence than global estimates and raised concerns about under-identification and reliability (Russell et al., 2014).

This Hyperactivity/Inattention subscale contains five items related to the key symptom domains of ADHD, including: *(1) restless, overactive, cannot stay still long; (2) constantly fidgeting; (3) easily distracted; (4) thinks things out before acting; and (5) seeks tasks through to the end* (Goodman, 1997, 2001). During the self-completion module of the parent-interview at ages 5 and 7, parents were asked to think about their child's behaviour during the past 6 months. Responses were recorded on a three-point scale from 'Not true' (0), 'Somewhat true' (1), or 'Certainly true' (2). Respondents could also select a 'Can't say' option, which was treated as missing in the analyses. Scores for each scale (range 0-10) were calculated by summing completed items. On the Hyperactivity/Inattention scale, three items reflect higher symptom severity, while two ('thinks things out before acting', 'sees tasks through to the end') were reverse coded. The psychometric properties the SDQ have been extensively examined (Kersten et al., 2016). Omega reliability was good at .75 for the *Hyperactivity/Inattention* subscale at ages 5 and 7.

SDQ - Peer Relationship Problems (Age 11)

Peer relationship problems at age 11 were measured using the SDQ *Peer Relationship Problems* subscale (Goodman, 1997, 2001). The scale includes five items, measuring the following: (*1) tends to play alone; (2) had at least one good friend; (3) generally liked by other children; (4) picked on or bullied by other children; and (5) gets on better with adults* (Johnson et al., 2015), with item 2 being reverse-coded. Parents were asked to think about their child's

behaviour during the past 6 months and scores were recorded as 'Not true' (0) to 'Certainly true' (2). Higher scores suggested that a child experienced increased difficulties in peer relations. Omega reliability was good at .71 at age 11 for *Peer Relationship Problems* subscale.

Discipline Parenting Practices - Straus' Conflict Tactics Scale (Ages 5 and 7)

Straus's Conflict Tactics Scale (SCTS) was used to measure discipline parenting practices at ages 5 and 7 (Straus & Hamby, 1997). The scale focuses on the use of nonviolent discipline, psychological aggression, and physical assault in parent-child and other family relationships. Parents (pre-dominantly, mothers ~ 98%) were asked how often they adopt the following parenting tactics, when their child is being naughty. The scale included six items divided into two categories of 'harsh parenting tactics', which formed three items: *shouting, smacking and telling off child,* or 'withdrawal techniques', which formed the remaining three items: *ignoring child, sending child to bedroom or naughty chair and taking away treats*. Items were recorded on a five-point Likert scale ('Never', 'Rarely', 'Once a month', 'At least once a week', or 'Daily'). The item *bribing him/her/them (e.g. with sweets or a treat)* was excluded from analyses at ages 5 and 7, as it did not align with harsh or withdrawn parenting categories. This exclusion is consistent with prior MCS-based research on parenting and child mental health (Rajyaguru et al., 2019). Psychometric properties of the SCTS suggest good discriminant and construct validity (Straus et al., 1998). On average, omega scores for age 5 harsh parenting were .71, and for withdrawal techniques was .63. On average, omega scores for age 7 harsh parenting were .74, and for withdrawal techniques was .67.

7.3.7 Statistical Procedure

Data were drawn from multiple waves of the MCS, including Sweeps 3 to 5 (ages 5, 7, and 11), alongside relevant longitudinal family files and geographical identifiers obtained from the UK Data Service (study numbers 5795, 6411, 7464, 7760-7763, 8172, 8753-8754, 8819, and 8824). Files were imported using the *foreign* package in R and converted to *.csv* format for analysis. Data merging and processing followed established procedures as outlined in CLS documentation and webinars (e.g., Agalioti-Sgompou & Johnson, 2020), including harmonisation of variables across sweeps and preparation of derived variables where necessary.

All analyses were conducted in R (version 4.4.1; Thulin, 2024), with SEM analyses performed using the *lavaan* package (version 0.67; Rosseel, 2012). Gender was dummy coded as 0 (male) and 1 (female). Maternal education was treated as an ordinal variable based on the UK National Qualification Framework, ranging from no formal qualifications to postgraduate degrees. Children's ethnicity was coded as a nominal categorical variable in line with UK Census classifications: White, Mixed, Asian (Indian/Pakistani/Bangladeshi), Black, and Other. Household income was adjusted using the OECD-modified equivalence scale, which accounts for the differential needs of household members based on age and composition (Horsfield, 2015; OECD, 2013).

Statistical assumptions for regression and moderation models, including normality of residuals, linearity, homoscedasticity, and multicollinearity, were assessed using standard diagnostic plots and variance inflation factors (VIF). No significant violations were observed, supporting the validity of the model estimates. Study 2A utilises MLR to examine associations between demographic factors (gender, income, maternal education, and ethnicity) and emotion dysregulation symptoms. ADHD symptoms were mean-centred before creating the interaction

term to reduce multicollinearity. In both MLR and moderation analyses, child ethnicity, maternal education and SES, were included as composite covariates to control for overall group-level variation, reflecting the study's primary focus on ADHD symptoms and parenting practices, rather than subgroup comparisons.

Missing data were retained at the item level to allow for Full Information Maximum Likelihood (FIML) estimation in SEM. FIML provides unbiased parameter estimates under the assumption that data are Missing at Random (MAR), which is the probability of missingness that depends on observed variables, but not on unobserved values (Enders, 2010; Maxwell, 2011). This approach maximises the use of available data and reduces bias associated with listwise deletion or ad hoc imputation.

Interaction plots were not produced for moderation models in **Studies 2A** and **2B**, in accordance with statistical guidance discouraging the arbitrary dichotomisation of continuous moderator variables (e.g., categorising ADHD symptomatology as "high" versus "low"). Such dichotomisation has been shown to reduce statistical power, distort parameter estimates, and increase the risk of spurious findings (Altman & Royston, 2006; MacCallum et al., 2002). Similarly, simple slopes analysis was not conducted, as probing interactions at arbitrary values is inappropriate for dimensional constructs and may misrepresent the nature of continuous moderation effects (Finsaas & Goldstein, 2021). Instead, interaction effects were interpreted directly from the unstandardised coefficients, consistent with contemporary best practices for moderation analyses involving continuous predictors (Sommet et al., 2023).

Unstandardised coefficients are presented for models using MCS data to accommodate survey design features and weighting procedures (Pek & Flora, 2018). Standardised estimates for both **Study 2A** and **Study 2B** are reported in Appendix F (see Tables 7.5-7.8). Model performance was evaluated using widely accepted fit indices: Tucker-Lewis Index (TLI) > 0.90, Comparative

Fit Index (CFI) > 0.90, and Root Mean Square Error of Approximation (RMSEA) < 0.05, indicating good fit (Kline, 2005). Statistical significance was set at $p < .05$ for all results. Only fully adjusted models with all covariates are presented to reduce omitted variable bias and ensure consistent comparisons.

7.3.8 Descriptive Statistics for MCS

Descriptive statistics for ages 5, 7 and 11 are provided in Table 7.1 for the MCS with the following: CSBQ Emotional Dysregulation Subscale, SDQ Hyperactivity/Inattention, SCTS Discipline Parenting Practices (subcategorised into harsh/withdrawn practices), and SDQ Peer Relationship Problems.

Table 7.1. *Descriptive Statistics for MCS (Ages 5, 7 and 11).*

Variable	*N*	*M*	*SD*	Min	Max	Range
CSBQ Emotional Dysregulation (Age 5)	14978	1.36	0.49	5	15	10
SDQ Hyperactivity/Inattention (Age 5)	14863	3.20	2.37	0	10	10
SCTS Discipline Parenting Practices - Withdrawn (Age 5)	13831	2.72	1.04	1	5	4
SCTS Discipline Parenting Practices - Harsh (Age 5)	13831	2.80	0.88	1	5	4
CSBQ Emotional Dysregulation (Age 7)	13672	1.73	0.47	5	15	10
SDQ Hyperactivity/Inattention (Age 7)	13605	3.37	2.53	0	10	10
SCTS Discipline Parenting Practices -Withdrawn (Age 7)	13350	2.59	1.01	1	5	4
SCTS Discipline Parenting Practices - Harsh (Age 7)	13350	2.72	0.86	1	5	4
SDQ Peer Relationship Problems (Age 11)	12858	1.38	1.70	0	10	10

7.3.9 Results

The MCS results are presented below in a structured format, aligning with hypotheses, with the original order outlined in Table 5.1 (see Chapter 5; subsection 5.3). The results are introduced with the MLR results, followed by the cross-sectional and longitudinal findings. As previously stated, only key results are visualised to ensure clarity and conciseness in the presentation of

findings. The R code for the MCS results is available on OSF: https://doi.org/10.17605/OSF.IO/S5KE9.

H1: Key demographic factors - gender, income (SES), maternal education, and ethnicity - are associated with emotion dysregulation at ages 5 and 7.

Age 5

The MLR analysis at age 5 explored associations between gender, income, maternal education, and child ethnicity, with emotion dysregulation symptoms (n = 11,450). Gender was a statistically significant predictor of emotion dysregulation symptoms (B = 0.069, $p < 0.001$, 95% CI [0.052, 0.086]), with males exhibiting slightly higher levels of emotion dysregulation, compared to females. Maternal education showed a statistically significant, positive association with emotion dysregulation (B = 0.002, $p < 0.001$, 95% CI [0.002, 0.0025]), with higher education linked to increased emotion dysregulation symptoms, compared to lower education. In contrast, household income had a statistically non-significant effect (B = 0.001, p = 0.86, 95% CI [-0.006, 0.007]), and child ethnicity also had a statistically, non-significant association with emotion dysregulation (B = - 0.005, p = 0.26, 95% CI [-0.013, 0.003]). The model fit was fully saturated (CFI = 1.000, TLI = 1.000, RMSEA = 0.000) and explained 24% of the variance.

Age 7

At age 7, the MLR analysis explored associations between gender, income, maternal education, and child ethnicity, with emotion dysregulation symptoms (n = 2,122). A statistically non-significant association was observed between gender and emotion dysregulation (B= - 0.010, p = .642, 95% CI [- 0.054, 0.034]), indicating no meaningful difference in emotion dysregulation between males and females. Income showed a statistically non-significant association with

emotion dysregulation (B = - 0.010, p = 0.190, 95% CI [-0.026, 0.006]). Higher maternal education showed a statistically significant association with emotion dysregulation, compared to mothers with lower maternal education (B = 0.002, p < 0.001, 95% CI [0.001, 0.003]). Child ethnicity indicated a statistically non-significant association with emotion dysregulation (B = - 0.007, p = 0.491, (95% CI [-0.027, 0.013]). The model fit was fully saturated (CFI = 1.000, TLI = 1.000, RMSEA = 0.000), explaining 22% of the variance.

H2-H5: Cross-sectionally, ADHD symptoms are a key moderator of the relation between discipline parenting practices (withdrawn/harsh) and ED symptoms, at ages 5 and 7, respectively.

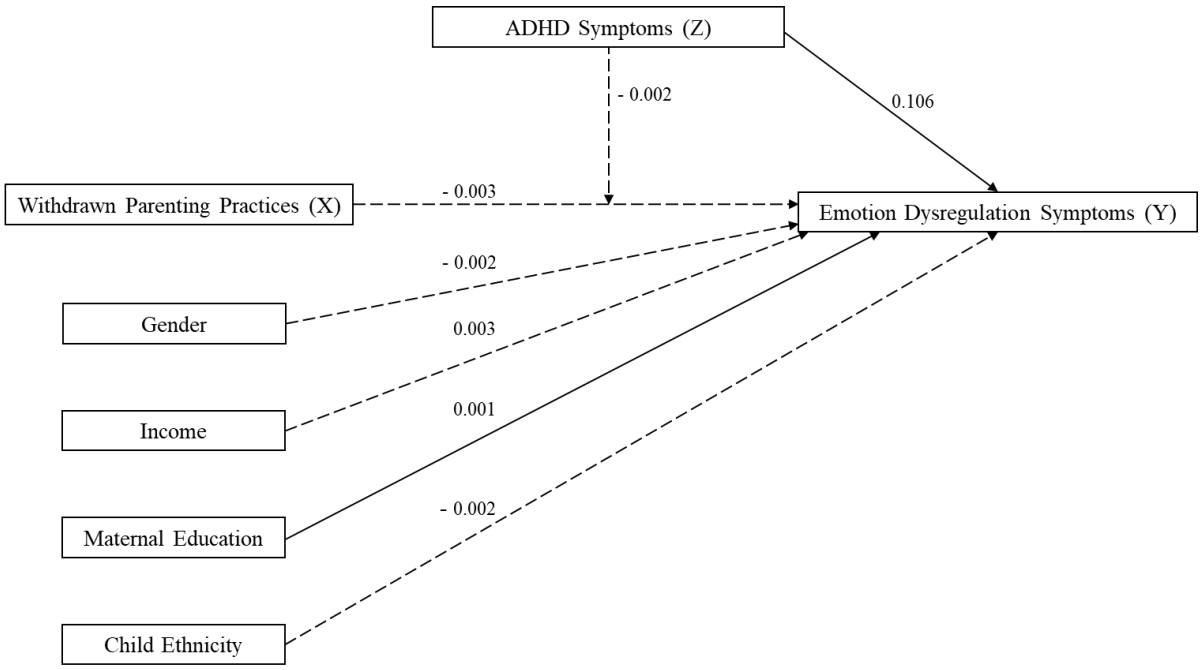
H2 Age 5 Withdrawn Parenting

At age 5, a cross-sectional moderation model tested the association between withdrawn parenting and emotion dysregulation symptoms, with ADHD symptoms as a moderator, and gender, income, maternal education, and child ethnicity included as covariates (n = 30,135). The interaction between withdrawn parenting and ADHD symptoms at age 5 was statistically non-significant (B = - 0.002, p = 0.072, 95% CI [-0.004, 0.001]), indicating no clear evidence that ADHD symptoms moderated the association between withdrawn parenting and emotion dysregulation. Withdrawn parenting practices showed a statistically non-significant main effect on emotion dysregulation (B = - 0.003, p = 0.236, 95% CI [-0.007, 0.001]). The main effect of ADHD symptoms on emotion dysregulation was statistically significant and positive (B = 0.106, p < 0.001, 95% CI [0.100, 0.112]). Gender at age 5 had a statistically, non-significant association with emotion dysregulation (B = - 0.002, p = 0.725, 95% CI [-0.012,0.008]). Income showed a statistically non-significant relationship with emotion dysregulation (B = 0.003, p = 0.085, 95%

CI [-0.001, 0.007]), as did ethnicity (B = - 0.002, p = 0.383, 95% CI [-0.006, 0.002]). Higher maternal education was associated with a statistically significant positive effect on emotion dysregulation (B = 0.001, p < 0.001, 95% CI [0.001, 0.002]) compared to lower maternal education. This model fit indicated a fully saturated model (CFI = 1.000, TLI = 1.000, RMSEA = 0.000) and explained 18.3% of the variance. Figure 7.1 show the moderation model for withdrawn parenting practices, ADHD symptoms, and emotion dysregulation symptoms at age 5.

Figure 7.1. *Unstandardised Estimates for Age 5 Moderation: Withdrawn Parenting (MCS)*

Note: Non-significant associations are indicated by dashed lines.



H3 Age 5 Harsh Parenting

A cross-sectional moderation model (n = 30,135) was run for age 5 harsh parenting practices. The interaction between harsh parenting and ADHD symptoms at age 5 was statistically non-significant (B = - 0.001, p = 0.747, 95% CI [-0.002, 0.001]), indicating no evidence that

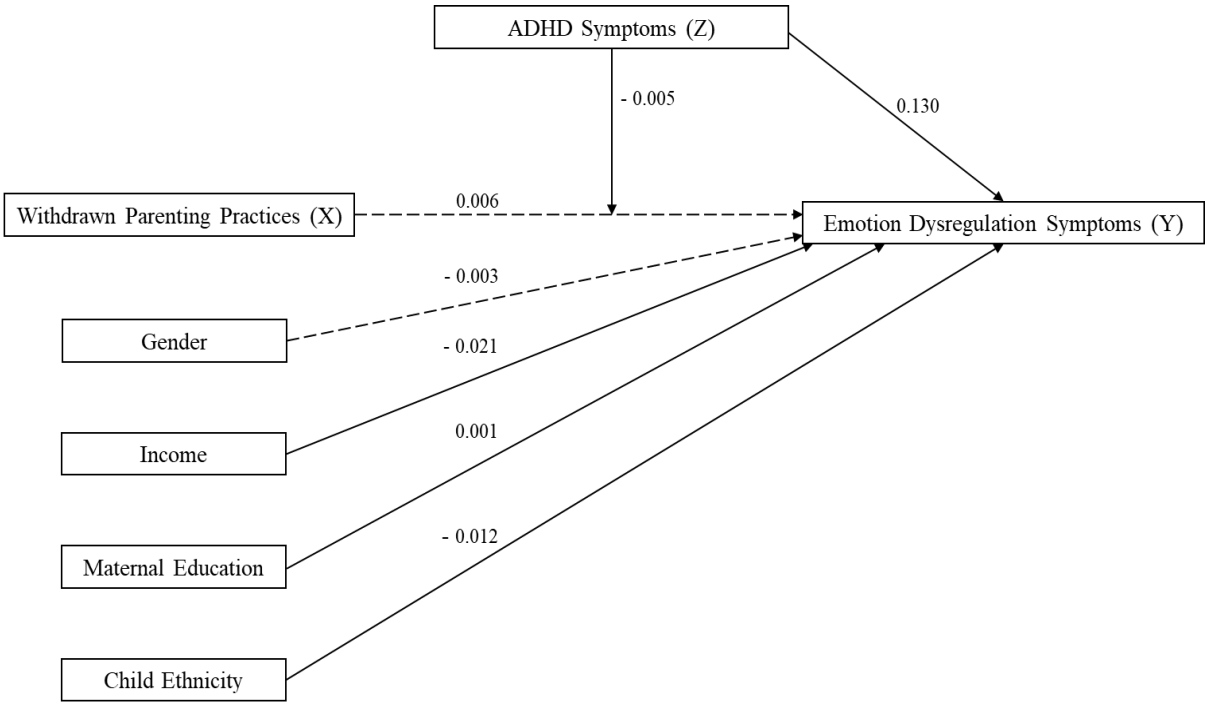
ADHD symptoms moderated the association between harsh parenting and emotion dysregulation. The main effect of harsh parenting on emotion dysregulation was also non-significant (B = - 0.002, p = 0.349, 95% CI [-0.006, 0.003]). In contrast, the main effect of ADHD symptoms on emotion dysregulation was statistically significant and positive (B = 0.102, p < 0.001, 95% CI [0.096, 0.109]). Gender at age 5 had a statistically non-significant relationship with emotion dysregulation (B = - 0.002, p = 0.740, 95% CI=[-0.012,0.008]). Income at age 5 had a statistically non-significant effect (B = 0.003, p = 0.085, 95% CI [-0.0004, 0.0064]), as did children's ethnicity (B = -0.002, p = 0.394, 95% CI [-0.0066, 0.0026]) on emotion dysregulation. Higher maternal education at age 5 had a statistically significant positive effect on emotion dysregulation (B = 0.001, p < 0.001, 95% CI [0.001, 0.001]), compared to lower maternal education. This model was fully saturated (CFI = 1.000, TLI = 1.000, RMSEA = 0.000), explaining 18.1% of the variance.

H4 Age 7 Withdrawn Parenting

A cross-sectional moderation model (n = 3,147) was run for age 7 withdrawn parenting practices. The interaction between withdrawn parenting and ADHD symptoms was statistically significant and negative (B = - 0.005, p = 0.034, 95% CI [-0.010, -0.001]), indicating that the association between withdrawn parenting and emotion dysregulation weakened, as ADHD symptom levels increased along the dimensional scale. Withdrawn parenting practices showed a statistically non-significant main effect on emotion dysregulation (B = 0.006, p = 0.360, 95% CI [-0.006, 0.019]). In contrast, ADHD symptoms had a statistically significant positive main effect on emotion dysregulation (B = 0.130, p < 0.001, 95% CI [0.117, 0.144]). Gender had a statistically non-significant association with emotion dysregulation (B = - 0.003, p = 0.817, 95% CI [-0.028, 0.022]). A statistically significant negative association was found between income and emotion dysregulation (B = - 0.021, p < 0.001, 95% CI [-0.030, -0.013]). Children's ethnicity was

statistically significant and negatively associated with emotion dysregulation (B = - 0.012, $p <$ 0.05, 95% CI [-0.022, -0.001]). Higher maternal education had a significant positive effect on emotion dysregulation (B = 0.001, $p < 0.001$, 95% CI [0.0001, 0.001]), compared to lower maternal education. The model was fully saturated (CFI = 1.000, TLI = 1.000, RMSEA = 0.000), explaining approximately 13.2% of the variance. Figure 7.2 shows the moderation model for withdrawn parenting practices, ADHD symptoms, and emotion dysregulation symptoms at age 7.

Figure 7.2. *Unstandardised Estimates for Age 7 Moderation: Withdrawn Parenting (MCS).*



H5 Age 7 Harsh Parenting

For the age 7 cross-sectional moderation model of harsh parenting (n = 3,147), the interaction with ADHD symptoms was not statistically significant (B = 0.001, p = 0.720, 95% CI [-0.002, 0.004]), indicating that ADHD symptom levels did not meaningfully moderate the

relationship between harsh parenting and emotion dysregulation. The main effect of harsh parenting practices on emotion dysregulation was statistically non-significant (B = 0.001, p = 0.967, 95% CI [-0.010, 0.010]). The main effect of ADHD symptoms at age 7 was statistically significant and positive (B = 0.114, $p < 0.001$, 95% CI [0.103, 0.124]). Gender had a statistically non-significant effect (B = - 0.002, $p = 0.908$, 95% CI [-0.013, 0.009]), with emotion dysregulation. Ethnicity showed a statistically significant and negative effect with emotion dysregulation (B = -0.012, $p = 0.039$, 95% CI [-0.023, -0.001]), as did income (B = - 0.020, $p < 0.001$, 95% CI [-0.030, -0.010]). Higher maternal education had a statistically significant positive association with emotion dysregulation (B = 0.001, $p < 0.001$, 95% CI [- 0.001, 0.001]), compared to mothers with lower education. The model was fully saturated (CFI = 1.000, TLI = 1.000, RMSEA = 0.000), explaining approximately 13.2% of the variance.

H6: Longitudinally, ADHD symptoms at age 7 moderate the relation between age 5 discipline parenting practices (withdrawn/harsh) and age 11 peer relationship problems.

H6 Longitudinal Withdrawn Parenting

Longitudinally, the moderating effect of ADHD symptoms at age 7 was examined between age 5 withdrawn parenting practices and age 11 peer relationship problems (n = 4,695). The interaction between age 5 withdrawn parenting tactics and age 7 ADHD symptoms showed a statistically significant positive association (B = 0.219, $p < 0.001$, 95% CI [0.199, 0.238]), indicating that the positive association between age 5 harsh parenting and age 11 peer problems is strengthened, as ADHD symptom levels increase along the dimensional spectrum. Withdrawn parenting practices at age 5 showed a statistically non-significant main effect on peer relationship problems at age 11 (B = 0.011, p = 0.63, 95% CI [-0.034, 0.056]). The main effect of ADHD

symptoms at age 7 on peer relationship problems at age 11 was statistically significant and positive (B = 0.2107, $p < 0.001$, 95% CI [0.190, 0.231]). Age 5 gender showed a statistically non-significant association with age 11 peer relationship problems (B = 0.055, $p = 0.260$, 95% CI [-0.043, 0.154]), as did age 7 gender (B = - 0.074, $p = 0.127$, 95% CI [- 0.168, 0.020]). Income at age 5 was statistically non-significant with peer relationship problems (B = - 0.018, $p = 0.297$, 95% CI [- 0.052, 0.016]), as was income at age 7 (B = 0.007, $p = 0.704$, 95% CI [-0.026, 0.038]). Children's ethnicity showed a statistically significant, negative association with age 11 peer relationship problems (B = - 0.092, $p < 0.001$, 95% CI [-0.137, -0.047]). Higher maternal education was statistically significant and positively associated with peer problems, compared to lower levels of maternal education (B = 0.004, $p < 0.001$, 95% CI [0.002, 0.006]). The model fit was fully saturated (CFI = 1.000, TLI = 1.000, RMSEA = 0.000) and the variance explained by the model was 18.9%.

H7 Longitudinal Harsh Parenting

Longitudinally, the moderating effect of ADHD symptoms at age 7 on the relationship between age 5 harsh parenting practices and age 11 peer relationship problems was examined (n = 4,695). The interaction between harsh parenting and ADHD symptoms was statistically significant, with a positive association (B = 0.219, $p < 0.001$, 95% CI [0.199, 0.238]), indicating that the association between harsh parenting at age 5 and peer relationship problems at age 11 becomes stronger as ADHD symptom levels increase. The main effect of harsh parenting at age 5 showed a non-significant positive association with age 11 peer problems at age 11 (B = 0.044, p = 0.107, 95% CI [-0.008, 0.097]). The main effect of ADHD symptoms at age 7 was also statistically significant, showing a positive association with peer problems at age 11 (B = 0.153, $p < 0.001$, 95% CI [0.138, 0.168]). For gender, a statistically non-significant association was found at age 5

(B = 0.055, p = 0.260, 95% CI [-0.043, 0.154]), as well as age 7 (B = - 0.075, p = 0.122, 95% CI [-0.169, 0.019]).

Income at age 5 had a statistically non-significant association with peer relationship problems (B = - 0.018, p = 0.298, 95% CI [-0.051, 0.015]), as did income at age 7 (B = 0.006, p = 0.73, 95% CI [-0.027, 0.039]). Ethnicity was statistically significant and showed a negative association with age 11 peer relationship problems (B = - 0.093, $p < 0.001$, 95% CI [-0.136, -0.051]). Higher maternal education was statistically significant, showing a positive association with peer problems (B = 0.004, $p < 0.001$, 95% CI [0.003, 0.005]), compared to lower levels of maternal education. The model was fully saturated (CFI = 1.000, TLI = 1.000, RMSEA = 0.000) and explained 18.9% variance. Figure 7.3 shows the longitudinal moderation model for harsh parenting, ADHD symptoms, and peer relationship problems. Table 7.2 displays a summary of the MCS results, linked to the hypotheses in Table 5.1 (see Chapter 5, subsection 5.3).

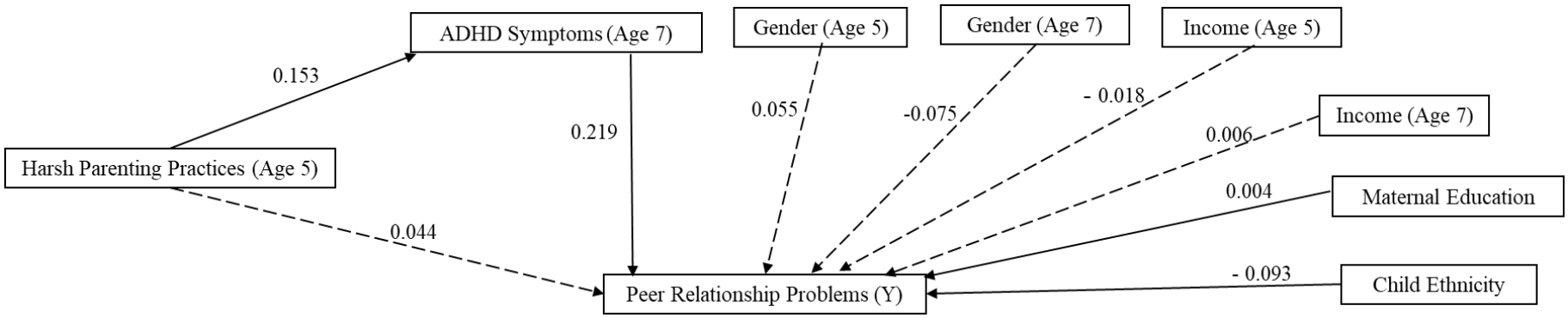


Figure 7.3. *Unstandardised Estimates for Longitudinal Moderation: Harsh Parenting (MCS).*

Table 7.2. *Summary of MCS Hypotheses Results.*

Hypothesis	Supported	Summary
H1 (Age 5)	Partially	Gender and maternal education were significant; income and ethnicity were not.
H1 (Age 7)	Partially	Only maternal education was significant; other covariates were not.
H2 (Age 5 - Withdrawn Parenting × ADHD × Emotion Dysregulation Symptoms)	Not supported	No significant moderation effect of ADHD symptoms.
H3 (Age 5 - Harsh Parenting × ADHD × Emotion Dysregulation Symptoms)	Not supported	No significant moderation effect of ADHD symptoms.
H4 (Age 7 - Withdrawn Parenting × ADHD × Emotion Dysregulation Symptoms)	Supported	ADHD significantly moderated the association.
H5 (Age 7 - Harsh Parenting × ADHD × Emotion Dysregulation Symptoms)	Not supported	No significant moderation effect of ADHD symptoms.
H6 (Longitudinal - Withdrawn Parenting × ADHD × Peer Relationship Problems)	Supported	ADHD significantly moderated the longitudinal association.
H7 (Longitudinal - Harsh Parenting × ADHD × Peer Relationship Problems)	Supported	ADHD significantly moderated the longitudinal association.

7.4 Study 2B: z-proso

z-proso was launched in 2004 as a combined randomised field experiment and longitudinal cohort study (Ribeaud et al., 2022). It was developed in response to rising youth violence in Zurich, particularly in low-income, multi-ethnic neighbourhoods, and aims to inform evidence-based violence prevention and understand the development of social and antisocial behaviour across the life span. The study covers a broad range of topics, including SES, household composition, perinatal health, caregiver wellbeing, parenting support, migration and acculturation, and sibling behavioural problems (Ribeaud & Eisner, 2010). The dataset consists of ten main data collection waves at age 7, 8, 9, 10, 11, 12, 13, 15, 17 and 20. The baseline target population included 2,514 children entering Grade 1 in 90 Zurich public schools in 2004. Of these, 1,675 attended one of 56 randomly selected study schools, with 1,360 participating at age 7 and 1,446 (86.3%) retained by age 15, making the sample broadly representative of Zurich's youth population.

7.4.1 Theoretical Background

For children with ADHD, there are additional difficulties in forming and maintaining peer relationships, and these challenges are compounded by emotion dysregulation, including anger. Children with ADHD often exhibit poor social skills, such as a lack of impulse control and difficulty reading social cues, which leads to higher rates of peer rejection, social exclusion, and the inability to sustain positive peer relationships (Barkley, 2015; McQuade et al., 2021). For instance, children with ADHD are more likely to be disliked by peers, more prone to social isolation, and less likely to have reciprocal friendships compared to their typically developing peers (Hoza et al., 2005; Hoza, 2007). These social difficulties can result in significant emotional and behavioural problems, including a greater risk for comorbid mood disorders including

depression and loneliness, lower self-esteem, and academic underachievement (Barkley, 2015). Recent studies have further highlighted the role of peer rejection as a mediator in the development of externalising behaviours, including aggressive tendencies, and comorbid mental health issues in children with ADHD (Cross et al., 2015; Lee et al., 2021). Given the social impairments associated with ADHD, it is essential to understand how anger contributes to peer relationship difficulties.

Anger has been identified as a core feature of ADHD and is a significant predictor of peer relationship difficulties, aggression, and social withdrawal (Hoza et al., 2005; Rule & Nesdale, 1976; Wu et al., 2024). For instance, Melnick and Hinshaw (2000) highlighted that children with ADHD who have difficulty regulating their anger are more likely to experience peer rejection, which in turn exacerbates their emotional and behavioural difficulties. These difficulties can create a vicious cycle, where poor anger regulation leads to negative peer interactions, which in turn fuels further emotion dysregulation and peer exclusion (Hoza et al., 2005). Moreover, studies have found that the anger-management difficulties exhibited by children with ADHD often extend into adolescence, with increased rates of aggressive behaviour and interpersonal conflicts, further impairing their social functioning (Loeber & Burke, 2011; Willoughby et al., 2016).

7.4.2 Research Questions

As previously stated in Chapter 5 (see subsection 5.3, Table 5.2 for hypotheses), the Study 2B RQs are reiterated here to ensure analytical continuity:

Overarching RQs

RQ5) What key demographic factors influence the presentation of anger symptoms in children aged 7 and 9?

RQ6) What moderating role do ADHD symptoms have in explaining the associations between parenting practices and anger in children aged 9, cross-sectionally?

RQ7) What mediating role does anger have in explaining the associations between ADHD symptoms and conflict coping strategies in children aged 7,9 and 11, longitudinally?

7.4.3 Ethical Considerations

Appendix A details ethical approval from the School of Education Research Ethics Committee. Study 2B was pre-registered on OSF, prior to viewing or analysing the data (Antony et al., 2024c). The RQs, hypotheses, and variables, for both data sets, were derived from the z-proso cohort profile (Ribeaud et al., 2022), alongside data instrument documentation and handbooks sent via email confidentially by Dr. Ribeaud. A confidentiality agreement was carefully read and signed, in accordance with the University of Zurich's data confidentiality policies and procedures (see Appendix C).

z-proso

Informed consent from the parents and/or youths was obtained in accordance with the relevant national regulations, and all data were processed and stored according to data protection regulations for the z-proso project. Children, for whom parents provided informed consent at ages 7 to 11 and who themselves did not wish to participate, were free to decline participation. Given

the minimally intrusive nature of the study design, questions, and intervention, ethical approval was not initially required in accordance with Swiss regulations. Since 2017, ethics approval for the main study has been provided by the Ethics Committee at the Faculty of Arts and Social Sciences of the University of Zurich (see Appendix C).

7.4.4 Sample Characteristics

Within the original sample, participants originated from highly diverse backgrounds, with respect to the countries of origin and native languages of the parents. Most of the participants' mothers (58%) were not born in Switzerland. 53% of primary caregivers in the target sample were not native German speakers, with Albanian, Bosnian/Croatian/Serbian, Portuguese, Turkish, Spanish, Tamil, and Italian being the largest language groups (Eisner & Ribeaud, 2007). This diversity reflects the substantial proportion of second-generation immigrant children and adolescents amongst young people in Swiss cities and in Zurich in particular (Topgül, 2016). The most common country of origin of immigrated parents in the sample was former Yugoslavia.

The original sampling procedure was based on a cluster-randomised 2×2 factorial design with four experimental conditions (Triple P, PATHS, combined, and control) and schools as sampling units (Ribeaud et al., 2022). Schools were stratified by size and seven districts, with four schools randomly selected per stratum and allocated to conditions. The design was a randomised controlled trial involving 56 schools (14 quadruplets), representative of the culturally diverse City of Zurich, with slight overrepresentation of low SES districts. While the trial interventions could impact outcomes, randomisation and statistical controls minimise their influence on the reported associations.

7.4.5 Participants

Across all data collection waves, 1,583 (94.5%) participants contributed data to at least one wave via at least one informant (Ribeaud et al., 2022). As of 2021, the study still has contact details for 1,442 participants, or 91% of those who ever participated, who can thus be re-contacted for future data collections (Ribeaud et al., 2022). **Study 2B** focuses on parent and child-reported data at waves KW1 (age 7), KW3 (age 9) and KW4 (age 11) [4], with a sample range of 1,179 - 1,360 participants.

7.4.6 Measures

Social Behaviour Questionnaire - ADHD Symptoms (Ages 7 and 9)

ADHD symptoms were measured using an adapted version of the *Social Behaviour Questionnaire* (SBQ) at ages 7 and 9 (Ribeaud & Gloor, 2023; Tremblay et al., 1991). The SBQ is also administered to the target child's primary caregiver via CAPI. Within the ADHD subscale, nine items are divided into two subcategories equally: 'hyperactivity' (four items) and attention-deficit' (five items). Hyperactivity symptoms were measured using four items: *(1) the child is impulsive and acts without thinking; (2) has difficulty awaiting turns in games or groups; (3) cannot sit still and is described as restless or hyperactive; and (4) frequently fidgets.* Attention-deficit symptoms were assessed using five items: *(1) the child cannot settle to anything for more than a few moments; (2) is distractible and has trouble sticking to any activity; (3) cannot concentrate or pay attention for long; (4) is generally inattentive; and (5) gives up easily.* Responses were coded on a five-point Likert scale ranging from "never" to "very often". Previous studies have indicated that the SBQ has good psychometric properties, including internal

[4] Hereafter referred to by age groups 7, 9 and 11, as opposed to waves KW1,3 and 4.

consistency, structural validity, and criterion validity (Murray et al., 2017). On average, omega scores for Ages 7 and 9 ADHD symptoms were .62.

Social Problem-Solving Questionnaire - Anger (Ages 7 and 9)

The propensity toward a valuation of one's own emotional response as anger (hereby referred to as *anger*) was measured using the *Social Problem-Solving Questionnaire* (SPSQ): *"How Would You Do It?"* at ages 7 and 9 (Crick & Dodge, 1996; Dodge & Coie, 1987; Ribeaud & Gloor, 2023). The questionnaire consisted of six potentially conflictive situation vignettes, each supported by a drawing, which is adapted for males and females. Figure 7.4 displays an image of a swing situational vignette from the SPSQ, where children were presented with the following questions and picture prompt, as presented in the instrument documentation (z-proso Project Team 2024a). Appendix D includes the written prompts for the remaining five vignettes and full behavioural questions. The prompt provided to children for the swing vignette is outlined below:

Pretend that this is you and that this is another child. The other child has been on the swing for a long, long time and doesn't seem to want to share the swing with you. You would really like to play on the swing:

• Feeling: How do you feel, when something like this happens to you? Can you show how you feel by pointing at the faces expressing emotions?[5]

• Behavioural response 1: What could you say or do so that you could play on the swing?

[5] The original z-proso item begins with a phrasing equivalent to "Would you rather feel…". In the thesis, this has been adjusted to "How do you feel…" to make the hypothetical nature of the scenario clearer in English. This modification is for explanatory clarity in the thesis and the original, validated z-proso item used in data collection and published document instrumentation handbook (z-proso Project Team 2024a) remains unchanged.

Figure 7.4. *Social Problem-Solving Questionnaire: Swing Vignette*

(z-proso Project Team, 2024a, p.3).

At age 9, four out of the six initial vignettes from age 7 were used a second time. For each story, the child is asked how they would feel and solve the conflict, with responses recorded and pre-coded by the interviewer. The subdimensions measured in the scale included: (1) 1 question pertaining to likely anger in potentially conflictive situations and (2) up to four repeated questions on number and type of accessible behavioural responses in potentially conflictive situations (Ribeaud & Gloor, 2023). Children were asked to choose one (emotionally arousing) feeling from a choice of: 'happy', 'sad', 'angry', 'fear', and 'no feeling'. For this thesis, **Study 2B** focuses on children's feelings, whereby anger was dummy coded as 1 and all other feelings were coded as 0 (i.e., happiness, sadness, fear, no feelings). On average, omega scores for age 7 and age 9 were .62.

Alabama Parenting Questionnaire - Parenting Practices (Age 9)

Parenting practices were measured using the *APQ* (Shelton et al., 1996), alongside the Parenting Scale from the Kriminologisches Forschungsinstitut Niedersachsen (KFN), adapted by

z-proso (Kliem et al., 2019; z-proso Project Team, 2024a). Parenting practices were grouped into positive (i.e., involvement, positive parenting, control/supervision, and supportive) and negative parenting styles (i.e., erratic parenting, corporal punishment, and aversive parenting), using mean scores per group for analyses, enabling better comparisons to the MCS results and subcategorisations of parenting practices. The subdimensions of the scale at age 9 included: adults living in the same household as the child, parenting style and general family climate, and parental sanctioning style and parental violence. 13 items were used at age 9, including 1 item on adults living in the same household (filter question), 9 items on parenting style and 3 items per parent on parental sanctioning style and parental violence (Ribeaud & Gloor, 2023). For both parenting style and sanctioning style, responses were coded on a four-point Likert scale ranging from "never" to "often/always". Example items from the APQ scale at ge 9 include the following: *"How often does it happen that your mum takes you in her arms to hush you?"* and *"How often does it happen that mum or dad help you with your homework?"* (Ribeaud & Gloor, 2023; z-proso Project Team, 2024b). A list of all 40 APQ items can be found in Appendix E. On average, omega scores for age 9 positive and negative parenting were .62.

Criminological Research Institute of Lower Saxony Scale - Conflict Coping Strategies (Age 11)

Conflict coping strategies were measured using a minimised version of the scale from the *Kriminologisches Forschungsinstitut Niedersachsen* (KFN), translated as *Criminological Research Institute of Lower Saxony Scale*, adapted by the z-proso Project Team (2024b) for the age 11 group. The child is given a list of reactions in a conflict situation and asked to say how often he/she would react in a given situation. Contrary to previous interview waves, no vignettes

were used this time, and children were only asked about social compatible and aggressive problem solving. The subdimensions in this scale are divided into two categories: 'social competent strategy' (i.e., "*I listen very carefully, to avoid misunderstandings")* or 'aggressive strategy' (i.e., "*I threaten with bashes")*, with eight items being measured. A list of all items can be found in instrument documentation (see z-proso Project Team, 2024b). Responses were recorded on a five-point Likert scale from "never" to "very often" (Ribeaud & Gloor, 2023). On average, omega scores for age 11 coping strategies (competent and aggressive) were .63.

7.4.7 Statistical Procedure

The dataset provided by Dr Ribeaud included all relevant variables of interest (n = 1,675) and was analysed using R (version 4.4.1; Thulin, 2024). Gender was dummy coded (0 = male; 1 = female), and migration background was coded as 0 *'if at least one parent was born in Switzerland'* and 1 *'if both parents were from migrant households'*. SES was measured using the International Socio-Economic Index of Occupational Status (ISEI; Ganzeboom et al., 1992), which integrates education and income information, ranging from 16 to 90, with higher scores indicating higher ISEI. The ISEI constitutes a continuous index of occupational status that operationalises the mediating role of occupation in the relationship between education and income (Ganzeboom et al., 1992. Given that educational attainment is inherently embedded within the construction of ISEI, maternal education was not examined as an independent covariate, compared to the MCS.

Statistical assumptions for regression and moderation models, including normality of residuals, linearity, homoscedasticity, and multicollinearity, were assessed using standard diagnostic plots and variance inflation factors (VIF). No significant violations were observed, supporting the validity of the model estimates. ADHD symptoms were mean-centred before

creating the interaction term to reduce multicollinearity. For longitudinal mediation, a composite ISEI score based on highest occupational status across waves was used to reflect stable socio-economic conditions. Moderation and MLR models used age-specific ISEI scores categorised to capture time-sensitive effects. Migration background and gender were treated similarly, as a stable factor longitudinally, and varying by time in cross-sectional analyses. To ensure robustness, only cases with at least 50% valid data were retained and imputed. Missing data were handled using FIML, which allows for the inclusion of all available data without discarding incomplete cases and accounts for missingness patterns, thereby reducing bias and preserving the integrity and generalisability of the findings (Enders, 2001; Maxwell, 2011).

7.4.8 Descriptive Statistics

Table 7.3 presents the descriptive statistics for the z-proso data set, with the following variables of interest: SBQ ADHD symptoms, APQ Parenting (subcategorised into positive parenting and negative parenting), anger, and conflict coping strategies (subcategorised into aggressive strategies and competent strategies). A full list of relevant questionnaire items and questions are provided in Appendices D and E.

Table 7.3. *Descriptive Statistics for z-proso (Ages 7,9 and 11).*

Variable	*N*	*M*	*SD*	Min	Max	Range
SBQ ADHD (Age 7 - Parent)	1675	23.84	19.80	1	70	69
SBQ ADHD (Age 9 - Parent)	1675	18.76	15.13	1	55	54
Positive Parenting Mean (Age 9)	1180	3.24	0.34	3.25	0.37	2.88
Negative Parenting Mean (Age 9)	1180	0.94	0.44	0.45	0.93	0.48
Anger Mean Dummy-Coded (Age 7)	1675	0.27	0.24	0.25	0.25	0
Anger Mean Dummy-Coded (Age 9)	1675	0.29	0.29	0.26	0.37	0.11
Aggressive Conflict Coping (Age 11)	1675	3.52	3.19	1	19	18
Competent Conflict Coping (Age 11)	1675	10.16	7.50	1	24	23

7.4.9 Results

The z-proso results are presented below in a structured format, aligning with reordered hypotheses, with the original order outlined in Table 5.2 (see Chapter 5; subsection 5.3). The R code for the z-proso results is available on OSF: https://doi.org/10.17605/OSF.IO/S5KE9.

H8: There are demographic factors (gender, SES, and parents' migration background) that are associated with anger symptoms among children aged 7 and 9.

Age 7

A cross-sectional MLR model was conducted to assess the relationship between gender, SES, and parent's migration background, and anger, in children aged 7 (n = 1,304). Males showed

higher symptoms of anger (B = -1.065, p = < .001, 95% CI [-1.38, -0.75]), when compared to females. In terms of SES, several ISEI categories emerged as statistically significant predictors. Notably, ISEI score of 24 showed a positive association with anger (B = 4.113, p = 0.05, 95% CI [-0.004, 8.230]). Similarly, ISEI score 39 (B = 1.261, p = 0.04, 95% CI [0.02, 2.50]) and ISEI score 46 (B = 3.114, p = 0.04, CI [0.10, 6.12]) also showed statistically significant positive relationships. In relation to parents' migration background, for children with at least one parent from Switzerland, the association was statistically non-significant (B = 0.0008, p = 0.99, 95% CI [-0.73, 0.73]). Similarly, for children with migrant parents, the association was also non-significant (B = - 0.466, p = .208, 95% CI [-1.15, 0.22]). The model was fully saturated (CFI = 1.000, TLI = 1.000, RMSEA = 0.000) and explained 7% of the variance.

Age 9

A cross-sectional MLR model was conducted to assess the relationship between gender, SES, and parent's migration background, and anger, in children aged 9 (n = 1,261). Males showed higher symptoms of anger, compared to females (B = - 1.20, p < .001, 95% CI [-1.45, -0.94]). An ISEI score of 19 showed a statistically significant and positive association with anger (B = 5.338, p = 0.023, 95% CI [0.688, 9.988]). Similarly, ISEI score 28 (B = 4.756, p = <.001, 95% CI [2.056, 7.457]) showed a statistically significant positive relationship. With respect to migration background, both groups showed statistically non-significant associations with anger: at least one parent from Switzerland (B = - 0.4004, p = 0.21, 95% CI [-1.03, 0.23]) and migrant parents (B = - 0.456, p = 0.162, 95% CI [-1.090, 0.179]). The model fit was fully saturated (CFI = 1.000, TLI = 1.000, RMSEA = 0.000), explaining 13% of the variance.

H9 and 10: Cross-sectionally, ADHD symptoms are a key moderator of the relation between parenting practices (negative/positive) and anger at age 9.

H9 Age 9 Negative Parenting

A cross-sectional SEM was conducted to examine whether ADHD symptoms at age 9 moderated the relationship between negative parenting at age 9 and anger at age 9 (n = 1,179). The interaction between negative parenting and ADHD symptoms at age 9 was not statistically significant (B = - 0.024, p = 0.354, 95% CI [-0.074, 0.026]), indicating that ADHD symptom levels did not meaningfully moderate the relationship between negative parenting and anger symptoms. The main effect of negative parenting on anger was statistically non-significant (B = - 0.002, p = 0.903, 95% CI [-0.041, 0.036]). The main effect of ADHD symptoms had a statistically non-significant association with anger (B = 0.007, p = 0.614, 95% CI [-0.018, 0.032]). For males, a statistically significant association was observed, where higher levels of anger were exhibited, compared to females (B = - 0.136, p < 0.001, 95% CI [-0.169, -0.104]). ISEI score 28 was statistically significant and positively associated with anger (B = 0.570, p = 0.003, 95% CI [0.187, 0.954]), alongside ISEI score 41 (B = 0.573, p = 0.036, 95% CI [0.036, 1.110]). For migration background, both groups had statistically non-significant associations with anger: at least one parent born in Switzerland (B = 0.016, p = 0.690, 95% CI [-0.063, 0.095]) and migrant parents (B = 0.001, p = 0.979, 95% CI [-0.078, 0.080]). This model was fully saturated (CFI = 1.000, TLI = 1.000, RMSEA = 0.000) and explained 14% of the variance in anger.

H10 Age 9 Positive Parenting

A cross-sectional SEM was conducted to examine whether ADHD symptoms at age 9 moderated the relationship between positive parenting at age 9 and anger at age 9 (n = 1,179). The

interaction between positive parenting and ADHD symptoms at age 9 was not statistically significant (B = - 0.011, p = .742, 95% CI [-0.078, 0.056]), indicating that ADHD symptom levels did not meaningfully moderate the relationship between positive parenting and anger symptoms. The main effect of positive parenting on anger at age 9 was negative and not statistically significant (B = - 0.027, p = .278, 95% CI [-0.074, 0.020]). The main effect of ADHD symptoms at age 9 did not significantly predict anger outcomes at age 9 (B = 0.004, p = 0.728, 95% CI [-0.020, 0.028]). For males, a statistically significant association was observed where higher levels of anger were exhibited, compared to females (B = - 0.135, p < .001, 95% CI [-0.166, -0.104]). ISEI score 28 showed a statistically significant positive association with anger (B = 0.568, p = 0.003, 95% CI [0.187, 0.954]), as did ISEI score 41 (B = 0.573, p = 0.036, 95% CI [0.036, 1.110]). ISEI score 66 demonstrated a statistically significant positive relationship with anger (B = 0.264, p = 0.003, 95% CI [0.09, 0.44]), as did ISEI score 74 (B = 0.203, p = 0.048, 95% CI [0.003, 0.40]), and ISEI score 90 (B = 0.572, p = 0.035, 95% CI [0.04, 1.10]). This pattern suggests a potentially complex, non-linear association between ISEI scores and anger, indicating that specific ranges of SES, rather than a linear trend, are linked to elevated anger levels. Regarding migration status, children from migrant households showed a statistically non-significant association with anger levels (B = - 0.029, p = 0.260, 95% CI [-0.080, 0.022]), as did children with at least one Swiss-born parent (B = 0.003, p = 0.947, 95% CI [-0.078, 0.084]). The model was fully saturated (CFI = 1.000, TLI = 1.000, RMSEA = 0.000), and explained 14% of the variance.

H11 and 12: Longitudinally, anger at age 9 is a key mediator of the relation between age 7 ADHD symptoms and age 11 conflict coping strategies (aggressive/competent).

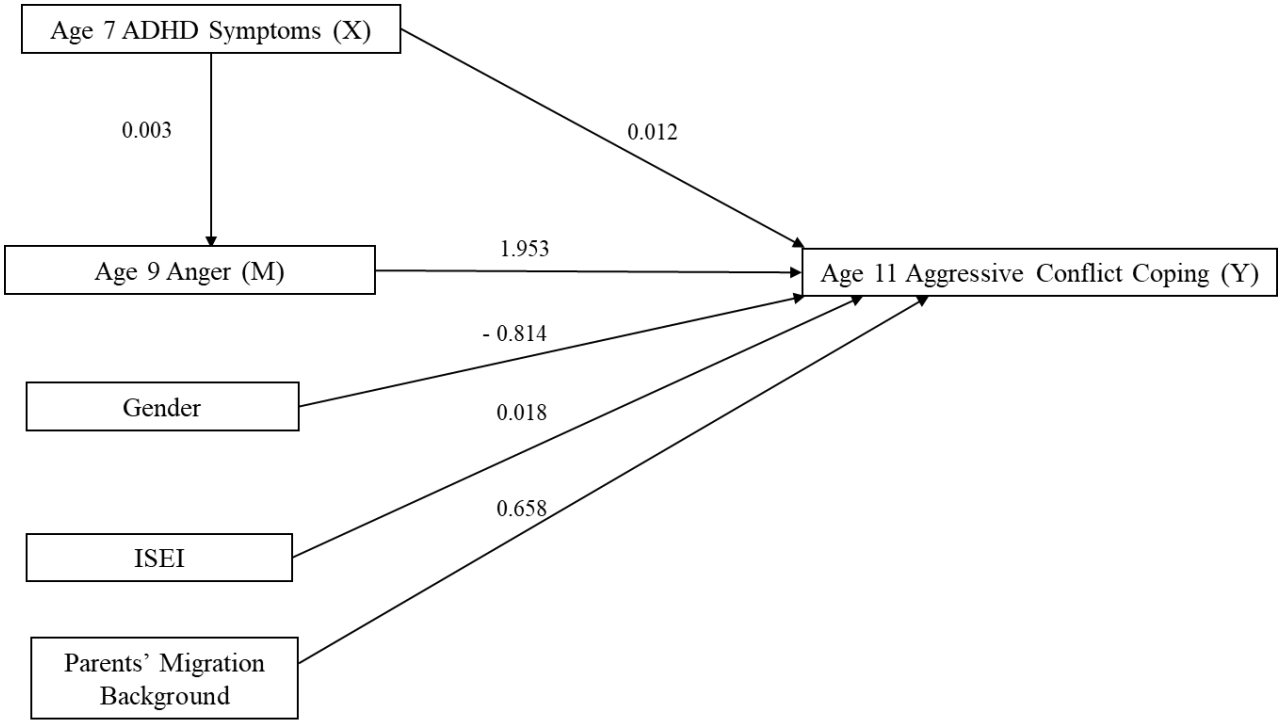
H11 Longitudinal Aggressive Coping

A SEM examined the longitudinal relationships between ADHD symptoms at age 7, anger at age 9, and aggressive conflict coping strategies at age 11 (n = 1,180), using mediation analysis. ADHD symptoms at age 7 had a statistically significant and positive direct effect on age 9 anger (B = 0.003, p < 0.001, 95% CI [0.002, 0.004]). For gender, a statistically significant, negative association was observed, where males showed higher anger levels, than females (B = - 0.094, p < 0.001, 95% CI [-0.120, -0.068]). ISEI had a statistically significant positive association with age 9 anger (B = 0.003, p < 0.001, 95% CI [0.002, 0.004]), as did migration background (B = 0.051, p < 0.001, 95% CI [0.031, 0.071]).

Age 9 anger was a statistically significant positive predictor (B = 1.953, p < 0.001, 95% CI [1.350, 2.556]), with aggressive conflict coping at age 11. Gender was statistically significant and showed a negative association, with females exhibiting lower aggressive coping, than males (B = - 0.814, p < 0.001, 95% CI [-1.098, -0.530]). ISEI (B = 0.018, p = 0.001, 95% CI [0.007, 0.029]) and migration background (B = 0.658, p < 0.001, 95% CI [0.430, 0.886]) also showed statistically significant positive associations with age 11 aggressive coping. ADHD symptoms at age 7 had a statistically significant and positive direct effect on age 11 aggressive coping (B = 0.012, p = 0.012, 95% CI [0.003, 0.021]). Anger at age 9 partially mediated the effect of ADHD symptoms at age 7 on aggressive coping at age 11, with a statistically significant positive indirect effect (B = 0.005, p < 0.001, 95% CI [0.003, 0.007]). The total effect of ADHD symptoms on aggressive coping, was also statistically significant and positive (B = 0.018, p < 0.001, 95% CI [0.008, 0.028]). The model explained approximately 7% of the variance in anger and 85.4% of the variance in aggressive

coping and the model fit indices were saturated (CFI = 1.000, TLI = 1.000, RMSEA = 0.000). Figure 7.5 shows the longitudinal mediation model for ADHD symptoms, anger symptoms and aggressive conflict coping strategies.

Figure 7.5. *Unstandardised Estimates for Longitudinal Mediation: Aggressive Coping (z-proso).*



H12 Longitudinal Competent Conflict Coping

A SEM examined the longitudinal relationships between ADHD symptoms at age 7, anger at age 9, and competent conflict coping strategies at age 11 (n = 1,180), using mediation analysis. ADHD symptoms at age 7 had a statistically significant and positive effect on anger at age 9 (B = 0.003, $p < 0.001$, 95% CI [0.002, 0.003]). Gender was negatively associated with age 9 anger, with females reporting lower anger levels, compared to males (B = - 0.094, $p < 0.001$, 95% CI [- 0.119, - 0.068]). ISEI had a statistically significant positive association with age 9 anger (B = 0.003, $p <$

0.001, 95% CI [0.002, 0.004]), as did migration background (B = 0.051, $p < 0.001$, 95% CI [0.031, 0.070]).

Anger at age 9 was a statistically significant positive predictor of competent conflict coping at age 11 (B = 4.928, $p < 0.001$, 95% CI [3.705, 6.151]). A statistically significant positive association between gender and competent coping was observed, with females reporting higher levels of competent coping, compared to males (B = 1.663, $p < 0.001$, 95% CI [1.038, 2.288]). ISEI (B = 0.118, $p < 0.001$, 95% CI [0.096, 0.140]) and migration background (B = 2.106, $p < 0.001$, 95% CI [1.592, 2.620]) showed statistically significant positive associations with competent coping. ADHD symptoms at age 7 had a statistically non-significant and positive direct effect on competent coping at age 11 (B = 0.019, $p = 0.071$, 95% CI [-0.001, 0.039])). Anger at age 9 partially mediated the relationship between ADHD symptoms at age 7 and competent conflict coping at age 11, with a statistically significant positive indirect effect (B = 0.013, $p < 0.001$, 95% CI [0.008, 0.018]). The total effect of ADHD symptoms on competent coping was also statistically significant and positive (B = 0.032, $p = 0.002$, 95% CI [0.012, 0.052]). The model explained 7% of the variance in anger and 41.3% of the variance in competent conflict coping. The model fit indices indicated a saturated model (CFI = 1.000, TLI = 1.000, RMSEA = 0.000). Figure 7.6 displays the longitudinal mediation model for ADHD symptoms, anger symptoms, and competent conflict coping strategies. Table 7.4 summarises the z-proso results in relation to the hypotheses outlined in Table 5.2 (see Chapter 5, subsection 5.3).

Figure 7.6. *Unstandardised Estimates for Longitudinal Mediation: Competent Coping (z-proso).*

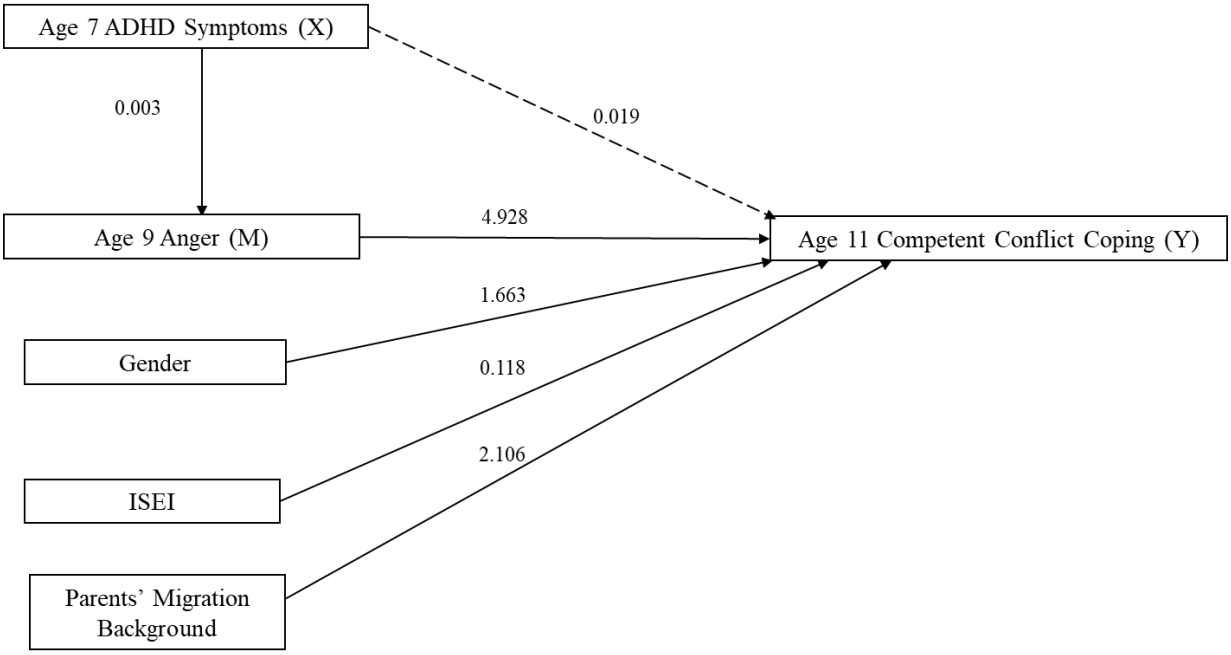


Table 7.4. *Summary of z-proso Hypotheses Results.*

Hypothesis	Supported	Summary
H8 (Age 7)	Partially	Gender and some ISEI categories were significant; migration background was not.
H8 (Age 9)	Partially	Gender and some ISEI categories were significant; migration background was not.
H9 (Age 9 Negative Parenting × ADHD × Anger Symptoms)	Not supported	No significant moderation effect of ADHD symptoms.
H10 (Age 9 Positive Parenting × ADHD × Anger Symptoms)	Not supported	No significant moderation effect of ADHD symptoms.
H11 (Longitudinal - Aggressive Coping)	Supported	Anger partially mediated the effect of ADHD symptoms on aggressive coping.
H12 (Longitudinal - Competent Coping)	Supported	Anger partially mediated the effect of ADHD symptoms on competent coping.

Sensitivity Analyses

As discussed previously, research has consistently suggested that in middle childhood, internalising problems, such as anxiety and depression, can often lead to the development of externalising problems, including aggression and disruptive behaviour. This trajectory is thought to occur because impairments in the self-regulation of emotional issues can exacerbate difficulties in managing behaviour (Keskin et al., 2023; Moilanen et al., 2010). Given the bidirectional nature of emotional and behavioural challenges, it is crucial to examine how internalising problems, particularly those related to negative emotions such as sadness, anger, and fear, contribute to the development of maladaptive coping strategies and externalising behaviours. To explore these dynamics, a sensitivity analysis was conducted using a latent variable model encompassing negative feelings, which included sadness, anger, and fear.

A statistically non-significant association was found between age 7 negative feelings and age 11 competent coping, where ADHD symptoms at age 9 moderates the association (B = 0.183, p = 0.735, 95% CI [0.098, 0.267]). Similarly, a statistically non-significant association was observed between age 7 negative feelings and age 11 aggressive conflict coping, where age 9 ADHD symptoms was the moderator (B = 0.196, p = 0.473, 95% CI [0.082, 0.310]. Both aggressive coping (CFI = 0.815, TLI = 0.774, RMSEA = 0.068) and conflict coping (CFI = 0.812, TLI = 0.770, RMSEA = 0.068) demonstrated reasonable model fit.

The non-significant results suggest that the relationship between negative feelings and coping strategies in middle childhood may be more complex and nuanced, than initially anticipated. One potential explanation is that individual differences, such as emotion regulation skills or cognitive coping mechanisms, may moderate how negative emotions influence coping behaviours in children with ADHD (Graziano & Garcia, 2016). For example, children in middle childhood may differ in their ability to recognise and manage emotions, influencing the coping

strategies they adopt in response to negative feelings. Additionally, contextual factors, such as family dynamics or peer relationships, might significantly shape how children cope with negative emotions (Bussing et al., 2003). In particular, the influence of parenting practices and social interactions at school or with peers becomes increasingly important during middle childhood, as these external factors could either exacerbate or alleviate emotional challenges. Given these complexities, research should further investigate how these individual and contextual factors interact to influence coping strategies in children with ADHD.

7.5 Discussion

UK MCS: ADHD Symptoms, Parenting, and Emotion Dysregulation

As addressed earlier, Table 7.2 (subsection 7.3.9) tested whether ADHD symptoms moderated the relationship between withdrawn/harsh parenting and emotion dysregulation in children at ages 5 and 7, cross-sectionally. At age 5, the interaction between withdrawn parenting and ADHD symptoms **(H2)** was non-significant, indicating that the relationship between withdrawn parenting and emotion dysregulation did not vary meaningfully across levels of ADHD symptoms. Similarly, the interaction between harsh parenting and ADHD symptoms at age 5 **(H3)** was also non-significant. These findings were contrary to the hypotheses, which anticipated that ADHD symptoms would exacerbate the effects of maladaptive parenting on children's emotion regulation difficulties. Studies have explored related constructs, offering valuable context for interpreting the findings. Cueli et al., (2024) found that children's perceptions of rigid rule-setting predicted greater emotion regulation difficulties, which aligns with the observation that parenting style is more strongly linked to emotional, than attentional outcomes. Although ADHD symptoms were treated as outcomes rather than moderators, their results reinforce the importance of children's subjective experiences of parenting. Similarly, Murray et al., (2024) examined emotion regulation

trajectories as predictors of later ADHD symptoms, highlighting the developmental interplay between emotional functioning and ADHD. While these studies approach the RQs from different angles, they complement the current hypotheses, by underscoring the significance of parenting in shaping emotional outcomes across childhood.

At age 7, the interaction between withdrawn parenting and ADHD symptoms was statistically significant, supporting the hypothesis **(H4)**. In contrast, the interaction between harsh parenting and ADHD symptoms **(H5)** was not significant, consistent with evidence that harsh parenting has broadly negative effects on emotion regulation, regardless of ADHD status (Bunford et al., 2015). With respect to **H4**, the findings highlight that the positive association between withdrawn parenting and emotion dysregulation was weaker among children with higher ADHD symptoms, compared to those with lower symptom levels. This is consistent with prior work suggesting that children with lower ADHD symptoms may be more sensitive to variation in parental responsiveness (Johnston & Mash, 2001). Furthermore, recent developmental research shows that emotion regulation difficulties in children with ADHD may stem more from neurobiological factors, than from environmental influences alone (Grilli et al., 2024). Gershy and Gray (2020) found that parental emotion regulation plays a key role in shaping parenting behaviour in families of children with ADHD, indicating that child-level vulnerabilities and parent emotional capacity jointly influence outcomes. These findings suggest that for children with elevated ADHD symptoms, emotion dysregulation may be less shaped by parenting style and more by intrinsic regulatory challenges.

UK MCS: ADHD Symptoms, Parenting, and Peer Relationships

H6 and **H7** examined whether ADHD symptoms at age 7 moderated the relationship between withdrawn/harsh parenting practices at age 5 and peer relationship problems at age 11,

with the findings supported both hypotheses. Specifically, children who scored higher on ADHD symptom measures, though not necessarily exhibiting clinically significant symptoms, were more vulnerable to the negative effects of withdrawn parenting, showing increased peer relationship difficulties. This is consistent with prior research indicating that even subclinical levels of ADHD traits can heighten sensitivity to negative parenting, contributing to social challenges (Berthelon et al., 2020; Bussing et al., 2003). Previous studies have highlighted that children with ADHD, regardless of diagnostic status, are at greater risk of peer rejection and difficulty forming friendships (Cordier et al., 2018; Hinshaw & Lee, 2003). These findings underscore the importance of adopting a nuanced approach to parenting interventions, one that considers both parenting practices and child characteristics such as ADHD symptomatology. Interventions targeting both domains may be essential for improving social outcomes, especially given the long-term implications of poor peer relationships for mental health and social functioning (Hinshaw & Lee, 2003). Moreover, these results suggest that support should extend beyond the parent-child relationship to include the broader peer environment. Therefore, forthcoming research should explore how peer support and school-based interventions might buffer children from the negative effects of withdrawn or harsh parenting.

z-proso: ADHD Symptoms, Parenting, and Anger

Turning to z-proso (see Table 7.4; subsection 7.4.9), **H9** and **H10** examined whether ADHD symptoms at age 9 moderate the relationship between parenting practices and anger at age 9. However, the findings did not support these hypotheses. Instead, the results suggest that ADHD symptoms, measured as relative elevations rather than necessarily clinical-level traits, have a more direct and intrinsic association with anger, independent of specific parenting behaviours. This pattern aligns with existing literature indicating that emotion regulation deficits commonly

associated with ADHD, such as frustration intolerance and heightened emotional reactivity, may directly contribute to increased anger (Bunford et al., 2015; Evans et al., 2014). The absence of a moderating effect from parenting practices suggests that neurological and regulatory mechanisms linked to ADHD may play a more central role in the development of anger than environmental factors like parenting style. While parenting interventions continue to play a vital role in supporting child development, the present findings underscore the need for complementary approaches that directly address emotion dysregulation, associated with elevated ADHD traits.

z-proso: ADHD Symptoms, Anger, and Conflict Coping Strategies

Finally, **H11** and **H12** tested whether anger at age 9 mediates the relationship between ADHD symptoms at age 7 and conflict coping strategies at age 11. The findings supported the hypotheses, showing that anger partially mediated the association between early ADHD symptoms and both aggressive and competent coping strategies. These results align with the dual pathway model of ADHD (Sonuga-Barke, 2003), which posits that ADHD-related behaviours emerge through two interconnected mechanisms: one involving executive function deficits and another rooted in emotion dysregulation. The observed mediation by anger highlights the emotional pathway, suggesting that the intensity and regulation of emotional responses, particularly anger, play a significant role in shaping how children with ADHD respond to interpersonal conflict. Anger operates as a dual force within developmental trajectories, shaping behavioural outcomes in distinctly divergent ways. When dysregulated, it fosters maladaptive responses, such as aggressive coping mechanisms that disrupt social interactions and emotional stability. However, when effectively regulated, anger becomes instrumental in conflict resolution, facilitating problem-solving and assertive communication. This aligns with research emphasising the critical role of emotion regulation in children's behavioural adjustment (Eisenberg et al., 2010; Zeman et

al., 2006). Rather than conceptualising anger as an inherently maladaptive or disruptive emotion, the findings suggest that its developmental consequences are largely contingent upon the child's capacity for regulation. When effectively regulated, anger can serve as a catalyst for constructive action, assertiveness, and adaptive social functioning. This perspective highlights the importance of targeted interventions aimed at strengthening emotion regulation competencies.

Cross-National Insights from MCS and z-proso

The cross-national dimension of **Study 2** provides essential insights into the nuanced ways in which ADHD-related emotional difficulties are influenced by parenting practices, societal expectations, and broader environmental factors. For example, in the MCS, ADHD symptoms moderated the association between withdrawn parenting practices and emotion dysregulation at age 7, which aligns with research that suggests that emotionally unavailable or unresponsive parenting practices contribute to emotional and behavioural difficulties in children (Barkley, 2015; Graziano & Garcia, 2016). In contrast, for z-proso, ADHD symptoms did not moderate the relationship between parenting (i.e., positive or negative) and anger, suggesting that social norms around emotion regulation and expression might play a role in shaping children's emotional responses. In Switzerland, such norms might support more restrained emotional expressions or adopt a more emotion-neutral approach (Evans et al., 2014), which could reduce the perceived impact of withdrawn parenting on anger.

Moreover, these findings support the argument that ADHD-related emotion dysregulation is not a universal phenomenon, but rather one that is shaped by socio-cultural factors (Harvey et al., 2019). In the UK, the educational system places a significant emphasis on developing emotional and social skills, often providing institutional support for children with ADHD to regulate their emotions and manage their social interactions (Loeber & Burke, 2011). Socio-

cultural contexts and educational practices may help explain why the impact of parenting on anger was less pronounced in the z-proso dataset. In Switzerland, emotion regulation support within schools is often less individualised, and societal expectations around childhood behaviour tend to emphasise compliance and restraint over emotional expressiveness (Lutz-Fritz & Hast, 2023). Rudin (2020) highlights how ADHD discourse in Switzerland is shaped by medicalised narratives and governance frameworks, which may marginalise alternative approaches to emotional development and reduce the visibility of relational factors, including parenting. Taken together, these findings highlight the need to situate ADHD within relational and socio-cultural contexts, which frames the following discussion on the strengths and limitations of Study 2.

Strengths of Study 2

This study offers several strengths, notably its methodological rigor and the use of longitudinal data, which allows for the examination of developmental changes and causal relationships over time. The inclusion of two large, well-established cohorts, the MCS and the z-proso, allows for the identification of patterns and processes that are more generalisable across different Western populations. The longitudinal design of the study is another key strength, providing a unique opportunity to track how anger and ADHD symptoms evolve over time. Longitudinal studies are particularly valuable in child development research as they allow for the identification of trends and changes in behaviours as children grow. This approach offers a dynamic understanding of how ADHD symptoms and emotional responses, such as anger, interact and develop across different stages of childhood (Moffitt, 2013). By following participants over a period, the study was able to capture the complex, changing nature of these behaviours and identify early risk factors or predictors that may contribute to their persistence or change. This is crucial

for developing early intervention strategies and understanding the presentation of ADHD and anger symptoms.

Another key strength of Study 2 is its comprehensive approach to examining a wide range of predictors of anger and ADHD symptoms, including demographic, socio-economic, and psychological factors. This multifaceted approach allows for a deeper understanding of how various factors interact to influence the development of these behaviours. Previous research has shown that multiple variables, such as family environment, parenting styles, and SES, can all contribute to emotion dysregulation and ADHD symptoms (Barkley, 2015). By incorporating these predictors, the study can offer a more holistic view of the factors that contribute to anger and ADHD, compared to focusing on individual factors in isolation.

Limitations of Study 2

However, some limitations must be acknowledged. One key limitation is the potential influence of unmeasured genetic factors. While the models accounted for a significant portion of the variance in anger and aggression, there are additional unmeasured factors that may contribute to these behaviours. For instance, genetic predispositions, including hereditary factors related to temperament or neurological function, may also influence how individuals express anger or aggression. Recent research suggests that genetic factors can account for a portion of the variability in aggressive behaviour, particularly in relation to impulsivity and reactive aggression (Cupaioli et al., 2021). Since these genetic variables were not considered in the present study, the models may not fully capture the complexity of the factors driving anger and aggression. Future research should aim to incorporate these external variables to provide a more comprehensive understanding of these behaviours and their underlying causes.

Furthermore, the reliance on parent-reported measures of ADHD symptoms and emotion dysregulation may introduce bias. Parent reports are inherently subjective and can be influenced by the parent's own mental health, stress levels, or parenting style, which may shape their perceptions of their child's behaviour (DuPaul et al., 2016). Research has shown that parents experiencing high levels of stress or mental health difficulties tend to report higher levels of emotional and behavioural problems in their children (Hinshaw & Lee, 2003). To address this limitation, future research should incorporate additional informants, such as teacher reports and further self-reports from children, which can provide a more holistic and accurate view of a child's emotional and behavioural difficulties (Achenbach, 2010). A multi-informant approach enhances reliability, offering a more nuanced understanding that accounts for different social contexts in which the child navigates emotion regulation. By integrating perspectives from multiple sources, researchers can mitigate potential biases and develop intervention strategies that are more precisely tailored to children's actual needs rather than parental perceptions alone.

While both studies explored longitudinal associations, the correlational nature of the analyses precludes definitive conclusions about causality. Correlation can highlight relationships between variables, but it does not establish that one variable causes changes in another (Maxwell et al., 2011). This is particularly relevant when examining complex disorders and symptoms, such as ADHD and emotion dysregulation, where various factors, such as genetic predispositions, environmental influences, and parenting practices, interact over time.

One limitation of **Study 2B** is the restricted options of feelings within the *Social Problem-Solving Questionnaire* (Crick & Dodge, 1996; Dodge & Coie, 1987; Ribeaud & Gloor, 2023). The four categories provide limited coverage of the feelings likely to arise in these scenarios; for many individuals, mild irritation or annoyance may constitute more accurate and contextually appropriate responses. In the absence of such options, participants may have been inadvertently

directed towards selecting ‘anger’, which is conceptualised in the thesis as an undesirable emotion, despite irritation or annoyance potentially representing more proportionate and adaptive reactions. As a result, the constrained response format of the SPSQ may have influenced how participants’ responses were classified.

Finally, while the cross-national nature of the studies is a strength, the differences in measures used between the two cohorts (e.g., SDQ vs. CBCL) may limit the comparability of results. For example, while both the SDQ and CBCL assess emotional and behavioural difficulties, they differ in their item content, rating scales, and underlying conceptual frameworks (Goodman, 2001). These inconsistencies may influence cross-national comparisons, making it difficult to determine whether observed differences reflect genuine variation in psychological functioning or methodological discrepancies in assessment.

7.6 Summary and Concluding Thoughts

This chapter presented Study 2, which examined the complex interplay between ADHD symptoms, parenting practices, and emotion dysregulation and anger in a UK-based sample and a Zurich-based sample. The findings highlight how these interactions shape critical developmental outcomes, including peer relationship problems and conflict coping strategies. Crucially, the study underscores that parenting practices, cross-national contexts, and broader social environments, are not secondary considerations, but key determinants of the emotional and social difficulties commonly experienced by children with ADHD. Rather than attributing these difficulties solely to intrinsic cognitive or neurological deficits, the results reveal that ADHD-related emotion dysregulation emerges within a dynamic, bidirectional framework, wherein the child’s regulatory capacity is shaped by ongoing interactions with their environment. These findings challenge deficit-based perspectives and suggest that interventions focusing exclusively on symptom

management are fundamentally insufficient. A paradigm shift towards comprehensive, individualised interventions, designed with environmental responsiveness, will be essential for advancing treatment efficacy. By integrating these dimensions, research can move towards offering holistic support that aims to improve the wellbeing of children with ADHD, as well as their families. **Study 3** will build on the findings from **Studies 1** and **2** in the next chapter by examining a crucial and often overlooked challenge: the difficulty children face in regulating others' emotions, particularly those of parents.

Chapter Eight
Study 3 - Extrinsic Dysregulation: A New Lens on Emotion Dysregulation in Children

8.1 Introduction

This chapter introduces **Study 3**[6], a novel conceptual framework that defines extrinsic dysregulation as children's difficulties in regulating the emotions of others. While the construct focuses on the child's regulatory actions, it recognises parenting practices and SES, as *developmental antecedents* that often shape the growth of extrinsic regulatory capacities. By foregrounding this under-theorised interpersonal dimension of emotion regulation, this chapter addresses a critical gap in the developmental literature, offering a relational and context-sensitive perspective that moves beyond traditional models of individual emotion regulation.

Firstly, extrinsic dysregulation will be coined, situating it within a developmental framework and tracing its relevance to the growing interpersonal demands of middle childhood. Next, to lay the groundwork for this new framework, the rationale begins by defining and differentiating key regulatory constructs central to understanding emotion regulation in social contexts. Specifically, it distinguishes between intrapersonal regulation (self-regulation of one's own emotions), intrinsic interpersonal regulation (the target seeks emotional support from a regulator to manage their emotions), and extrinsic interpersonal regulation (efforts to regulate others' emotional states, often in response to external expectations or stressors) (Tran et al., 2025; Zaki & Williams, 2013). Following this conceptual foundation, findings from **Studies 1** and **2** will

[6] Chapter 8 includes a paper under review and can be cited as follows: Antony, E. M. A., Beckmann, N., & Walker, S. (2026). Interpersonal Extrinsic Dysregulation: Rethinking Emotion Dysregulation in Middle Childhood.

contextualise the development of extrinsic dysregulation, with a focus on how parenting practices and SES in the UK and Zurich, influence children's difficulties in regulating parents' emotions. The bidirectional nature of extrinsic dysregulation will be examined (Zaki & Williams, 2013), with a primary focus on how regulatory difficulties emerge through recursive, interactive processes between the child and parent.

To support the construct of extrinsic dysregulation through both empirical and theoretical inquiry, the RQs will target key dimensions that merit further exploration, such as child-parent dynamics. Following this, theoretical grounding is drawn from Emotion Socialisation Theory (Eisenberg et al., 1998), Family Systems Theory (Prest & Protinsky, 1993), and Interpersonal Theory (Sullivan, 1953). Finally, to ensure empirical robustness, methodological considerations are addressed including challenges in research design, measuring extrinsic dysregulation, and ethical considerations.

8.2 Coining Extrinsic Dysregulation

Existing models of emotion dysregulation have primarily centred on intrinsic dysregulation, portraying regulation as an individualised, self-contained process governed by cognitive, affective, and neurobiological mechanisms (Ford et al., 2019; Gross, 2015a). While these frameworks have significantly advanced our understanding of within-child regulatory deficits, they often overlook the powerful role of relational dynamics and socio-structural conditions in shaping emotional competence. This is a notable limitation, given that children rarely regulate emotions in isolation; rather, they acquire and refine regulatory skills through repeated, emotionally salient interactions with parents, peers, teachers, and broader social systems, or, in some cases, through the absence of such support. Extrinsic dysregulation, in contrast, refers to the

difficulties children encounter in regulating the emotions of others, particularly within close relationships such as with parents. It shifts the focus from internal emotional control to the child's role as a co-regulator in dynamic, reciprocal exchanges, where regulatory challenges emerge not solely from within the child, but through mismatched or strained interpersonal interactions.

A critical yet underexplored aspect of extrinsic dysregulation is children's difficulties in regulating the emotions of others, including parents. In everyday interactions, children are often expected to respond to others' emotions in ways that provide comfort, defuse conflict, or restore social harmony. However, when children lack key socio-emotional competencies, such as empathy, emotional insight, or flexible regulatory strategies, they may misread emotional cues, overreact, or respond invalidly. For instance, a child might misinterpret sadness as anger, respond to distress with dismissal, or attempt to soothe others with poorly timed humour or aggression. Rather than de-escalating tension, these miscalibrated efforts can inadvertently escalate distress and contribute to maladaptive interpersonal outcomes (Nozaki & Mikolajczak, 2020; Zaki & Williams, 2013). This form of regulatory difficulty, where the child's attempts to regulate others fail due to developmental gaps, is central to the concept of extrinsic dysregulation. Research on extrinsic emotion regulation in adolescents and adults demonstrates that effectively influencing others' emotions requires cognitive empathy, emotional knowledge, and the ability to select context-appropriate strategies (Nozaki, 2015; Reeck et al., 2016). In middle childhood, when socio-emotional competencies such as empathy, emotional perspective-taking, and flexible strategy use are still emerging (Morris et al., 2007), children's attempts to regulate others' emotions are particularly prone to miscalibration. These developmental limitations often lead to misunderstandings, social rejection, or the escalation of emotional conflicts, which can undermine peer relationships and contribute to ongoing interpersonal difficulties (Zeman et al., 2006). Moreover, as Zaki (2020) highlights, interpersonal regulation is dynamic and bidirectional; errors

in regulating others can provoke negative emotional responses that further dysregulate the child, creating a feedback loop of mutual dysregulation. These difficulties do not develop in isolation. Instead, they are shaped by relational and environmental contexts such as parental modelling and inconsistent emotional feedback that influence opportunities for learning and practising effective interpersonal regulation strategies. For example, limited modelling of effective regulation by parents (Morris et al., 2007), emotionally dismissive parenting styles (Gottman et al., 1996), or cultural discouragement of emotional expressiveness (Butler et al., 2007) may constrain the development of extrinsic regulatory capacities. Without consistent exposure to supportive, contingent emotional exchanges, children may struggle to develop the nuanced interpersonal skills necessary to effectively modulate others' affective states, thereby increasing their risk of chronic extrinsic dysregulation.

Previous studies have established that middle childhood is when children consolidate emotional skills, develop self-awareness, and form deeper interpersonal connections that influence long-term emotional outcomes (Sharpe et al., 2016). However, existing models often prioritise self-regulation, neglecting how developmental antecedents contribute to children's abilities in modulating others' emotions. López-Pérez et al., (2016) identified age-related differences in interpersonal emotion regulation (IER) strategies, demonstrating that younger children rely more on attention-based strategies such as distraction and valuing, with 3-6-year-olds using these methods most frequently. In contrast, 7-8-year-olds showed a shift toward more affective engagement (focusing on the person or problem) and cognitive engagement (reappraising the situation from a different perspective). While these findings highlight developmental changes in ER, they remain disconnected from broader developmental antecedents, including SES, in shaping how children regulate others' emotions. Similarly, Pacella and López-Pérez (2018) found that while children tend to select adaptive strategies, emotion recognition does not reliably predict

regulatory choices, reinforcing the role of social-learning mechanisms, rather than internal capacities, in shaping children's extrinsic regulation difficulties. Zaki (2020) expands the scope of IER by arguing that empathic goals sometimes involve worsening targets' affect to support their long-term wellbeing, yet this perspective has been applied predominantly in adult relationships, leaving open questions about how children navigate these complexities in peer and family interactions. Barthel et al., (2018) highlight the social and cultural components of interpersonal regulation, but existing models have yet to fully integrate middle childhood as a critical period where developmental antecedents actively shape children's ability, or difficulty, in regulating others' emotions. These gaps highlight the need for a developmentally informed approach that situates middle childhood as a crucial period where children's regulatory challenges emerge in response to developmental antecedents including parenting and SES. By integrating family dynamics and socio-economic stressors as key developmental antecedents, future research can better account for the relational complexity of extrinsic dysregulation, moving beyond models that focus solely on individual deficits.

To address this critical gap, extrinsic dysregulation is proposed as a relational framework that foregrounds the child's emotional functioning within interpersonal exchanges, particularly those involving parents. This shift in focus allows for a more nuanced understanding of dysregulation, one that reflects the co-constructed and reciprocal nature of emotion regulation processes. While developmental antecedents shaping these dynamics are explored later (see Section 8.3), the emphasis here is on establishing extrinsic dysregulation as a concept that expands existing models of emotional functioning by centring the relational systems in which children are *active co-regulators* within emotionally charged relational systems, rather than passive recipients of parental influence.

8.3 Rationale

Key concepts

To comprehensively understand emotion regulation, it is crucial to recognise that emotional functioning occurs within both *intrapersonal* and *interpersonal* domains. Intrapersonal regulation pertains to the processes by which individuals regulate their own emotional experiences, particularly the regulation of internal emotional states such as intensity, duration, and expression (Dixon-Gordon et al., 2015; López-Pérez et al., 2017). Contemporary research favours the term intrapersonal, compared to intrinsic regulation (i.e., English & Eldesouky, 2020) as it offers greater precision in distinguishing these self-regulatory processes from interpersonal phenomena, particularly when exploring the social dimensions of emotion regulation (Niven, 2017; Niven & López-Pérez, 2025). In contrast, the interpersonal domain includes two key processes: *extrinsic interpersonal regulation* and *intrinsic interpersonal regulation*. Extrinsic interpersonal regulation occurs when a person, i.e., the regulator, initiates efforts to influence or manage another's emotional state (the target). Conversely, intrinsic interpersonal regulation describes situations in which the person experiencing the emotion (the target) seeks support from another (the regulator) to help manage their emotion (Dixon-Gordon et al., 2015; Niven & López-Pérez, 2025; Zaki & Williams, 2013). Together, these distinctions form the foundation for understanding emotion regulation as a multifaceted process, involving both self-regulation and social dynamics, and provide a clearer framework for investigating emotional functioning across different developmental contexts.

This conceptual mapping is particularly important in developmental contexts such as middle childhood, where children are expected to navigate both intrapersonal and interpersonal emotional landscapes. During this stage, children not only develop greater self-regulation abilities

but also begin to actively engage in the regulation of others' emotions, particularly in close relationships with parents. Research underscores that a child's ability to influence or assist others in managing their emotions significantly contributes to positive emotional development and fosters healthier social interactions (Niven & López-Pérez, 2025). Despite the extensive focus on intrinsic dysregulation in the literature, the concept of extrinsic dysregulation, when children struggle to regulate others' emotions, has been largely overlooked. However, this gap is critical, as failures in extrinsic regulation can profoundly impact relational dynamics and hinder emotional growth, influencing how children interact with others in their social environments.

A clear distinction between intrapersonal, intrinsic interpersonal, and extrinsic interpersonal regulation is crucial for conceptual precision, particularly in the context of extrinsic dysregulation, a construct that remains underexplored in the literature (Walker et al., 2025). By providing a structured framework that delineates these distinct forms of regulation, better insights can be gained into the dynamic interactions between internal emotional states and external regulatory influences, and their cumulative effects on children's emotional and social development. This conceptual clarity not only strengthens the theoretical foundation of extrinsic dysregulation but also facilitates the integration of key developmental antecedents, such as parenting practices and SES, into a comprehensive understanding of emotion regulation over the lifespan. The differentiation of these regulatory domains offers a critical starting point for advancing empirical research on extrinsic dysregulation, particularly in the context of middle childhood.

Links to Literature and Thesis Evidence

The introduction of extrinsic dysregulation as a distinct construct emerges in response to both theoretical limitations and empirical findings that challenge the adequacy of traditional,

internalised models of emotion dysregulation. Historically, emotion dysregulation in children has been primarily conceptualised through an intrinsic lens, centred on internal processes such as neurodevelopmental differences, temperament, and deficits in cognitive or physiological regulation (Thompson, 1990). While this perspective has contributed significantly to developmental psychopathology, it tends to isolate the child from the relational and environmental contexts that shape emotional functioning. Increasingly, research has underscored the role of developmental antecedents, particularly family dynamics and socio-economic adversity (Morris et al., 2007, 2017), not only in shaping children's capacity to regulate their own emotions, but also in influencing how they engage with, respond to, and attempt to regulate the emotional states of others. This shift calls for a reconceptualisation of dysregulation as a process that is not merely an individual difficulty, but one that emerges from complex relational and contextual interactions, highlighting the need for a broader, more holistic understanding of emotional development. Central to this framework is the recognition that children's dysregulation does not exist in isolation; rather, it reverberates throughout the child-parent relationship, influencing how parents engage in regulatory interactions.

Study 1 revealed significant gaps in existing emotion dysregulation conceptualisations, particularly in their failure to account for these relational child-parent dynamics. Prevailing frameworks often treat dysregulation as an internal trait, focusing on intrapersonal markers such as poor inhibitory control or emotional volatility (i.e., Graziano & Garcia, 2016), while neglecting the bidirectional influence between children and parents. However, this narrow perspective overlooks how children's regulatory instability actively shapes parental affective responses, constraining the parents' ability to engage in effective co-regulation. Rather than situating dysregulation within a intrapersonal framework, this dimension positions it within a dynamic relational process, recognising that a child's inability to regulate emotion can undermine the

parent's own regulatory stability, embedding cycles of mutual dysregulation within the child-parent dyad. Another overlooked factor is the role of ACEs in shaping regulatory patterns. Study 1 highlighted that existing conceptualisations rarely account for how early relational stressors condition co-regulatory exchanges, despite strong evidence linking ACEs to long-term emotion dysregulation (Cloitre et al., 2019; Feiler et al., 2023; Ye et al., 2024). Children exposed to relational stressors may develop maladaptive regulatory strategies, such as heightened reactivity, emotional withdrawal, or inconsistent affect modulation, that destabilise interactions with caregivers and elicit dysregulated responses in return. By neglecting these bidirectional processes, conventional models risk mischaracterising dysregulation as an individual pathology rather than an emergent relational phenomenon.

Study 2 extended Study 1 by exploring how parenting practices and ADHD symptoms influence children's anger and dysregulation. In z-proso, ADHD symptoms did not significantly moderate the effects of positive or negative parenting on anger, suggesting that these parenting influences were not contingent on ADHD levels. While ADHD-related anger may stem from intrinsic regulation difficulties, it can also reflect extrinsic dysregulation, where children struggle to manage emotionally charged interactions with parents, misread cues, or escalate conflict, reinforcing relational tension. In contrast, findings from MCS showed that ADHD moderated the association between withdrawn parenting and emotion dysregulation at age 7, suggesting that children with higher ADHD symptoms were more sensitive to emotionally unresponsive caregiving. Evidence suggests that parents confronted with frequent emotional volatility in their child experience heightened stress and emotional depletion, which in turn compromises their ability to provide stabilising forms of co-regulation (Lotto et al., 2024). Rather than consistently scaffolding their child's regulatory development, parents may fluctuate between hyper-control, withdrawal, or reactive soothing, unintentionally reinforcing dysregulatory cycles. Together, these

studies suggest that children's difficulties with emotion regulation, including how they attempt to influence others' emotions, are not solely intrapersonal. Instead, they emerge within relational contexts that shape the development of both intrinsic and extrinsic regulatory capacities.

Bidirectionality of Extrinsic Dysregulation

A critical aspect of extrinsic dysregulation is the bidirectional nature of child-parent interactions. As children's social networks and autonomy expand in middle childhood, the potential for conflict with parents also increases, potentially intensifying the complexity of child-parent regulatory dynamics (De Raeymaecker & Dhar, 2022). Children with pre-existing regulatory difficulties may elicit more intrusive or inconsistent responses from their parents, reinforcing the cycle of emotion dysregulation. Conversely, maladaptive parenting may exacerbate the child's emotional difficulties, leading to a reciprocal effect where emotion dysregulation and maladaptive parenting continuously reinforce each other. This bidirectional influence is crucial during middle childhood, as both child-parent interactions and the child's emerging emotional autonomy play pivotal roles in shaping long-term emotional outcomes (Fenning et al., 2018). These dynamics suggest that future research should further investigate how the interplay between parental emotion regulation and the child's developing emotional capacities unfolds over time, particularly in the context of developmental transitions, including middle childhood. Moreover, research comparing children from families with varying parenting styles has shown that children raised in households characterised by supportive and responsive parenting are better able to cope with external challenges, even within socio-economically disadvantaged contexts (Azman Ö. et al., 2021; Ginsburg & Bronstein, 1993). However, in middle childhood, children from families with over-involved or inconsistent parenting exhibit heightened emotional difficulties when faced with external stressors, highlighting how this period of emotional vulnerability magnifies the

impact of poor parenting practices (Evans et al., 2020; Fibbi & Truong, 2015). These findings emphasise the need for interventions to focus not only on the child's emotion regulation but also on supporting parents in enhancing their own emotion regulation to prevent the cycle of dysregulation.

Building on this bidirectional understanding, it becomes important to examine the specific regulatory patterns that can emerge within child-parent interactions. Table 8.1 presents a conceptual framework of extrinsic dysregulation within child-parent dynamics. This framework identifies key regulatory roles, interactional processes, and developmental outcomes, illustrating how emotion dysregulation is not solely an internal process but one that is shaped and sustained within relational contexts. In some cases, the child acts as the regulator, with their heightened emotional distress overwhelming the parent's capacity to respond with stability, resulting in failed parent co-regulation. In other situations, emotional instability is bidirectional, with both parent and child contributing to escalating reactivity. Co-regulation can deteriorate in either direction, with emotion dysregulation in the child or parent disrupting the stability of their interactions. These reciprocal disruptions often lead to reinforcing cycles of dysregulation and increased strain within the parent-child relationship. This dynamic is particularly relevant in middle childhood, when children begin to exercise greater emotional autonomy but still depend on parents for consistent emotional support and regulatory guidance. While the framework presented here centres on child-parent dynamics, the processes of extrinsic dysregulation may also operate within other emotionally significant dyads, particularly peer relationships (see Chapter 9; subsection 9.6 for further discussion).

Table 8.1. *Conceptual Framework of Extrinsic Dysregulation in Child-Parent Emotional Dynamics.*

Regulator	Target	Process Type	Description	Potential Outcomes
Child	Parent	Failed Parent Co-Regulation	The child's dysregulation reactions exceed the parent's capacity to maintain emotional stability, leading to compromised co-regulation.	Heightened parental reactivity, diminished ability to provide stabilising emotional support, reinforcing cycles of dysregulation.
Parent & Child	Each Other	Bidirectional Dysregulation	Parent and child engage in escalating emotional reactivity, where dysregulated responses, such as shouting or withdrawal, intensify rather than diffuse distress.	Cyclical emotional volatility, relationship strain, impaired co-regulation, difficulty in establishing regulatory stability.

Failed Parent Co-Regulation

Failed parent co-regulation occurs when a child's difficulties in managing their own emotions contribute to overwhelming the parent's emotional equilibrium, thereby reversing the expected regulatory balance within the dyad. Table 8.1 illustrates how the child's struggles to regulate the parent's emotional responses can lead to heightened parental reactivity, including irritability, frustration, or withdrawal. This dynamic highlights the child's active role in influencing the parent's emotional state, challenging traditional models that position parents solely as regulators. Importantly, this pattern is not indicative of parental failure alone but often reflects a complex interaction of child behaviours and broader contextual factors such as parental stress, mental health challenges, and limited emotional resources (Crandall et al., 2015; Rutherford et al., 2015).

As the child's dysregulated behaviours strain the parent's capacity for emotion regulation, the parent may respond in ways that inadvertently escalate the child's distress, creating a reciprocal cycle of dysregulation. This bidirectional interplay impedes the development of both the child's and parent's regulatory abilities and undermines the security of the attachment relationship.

Recognising the child's influence on parental emotion regulation emphasises the relational complexity underpinning co-regulation and the need to view these interactions within a systemic framework rather than attributing responsibility solely to the parent or child (Rutherford et al., 2015). Addressing this bidirectional regulatory exchange, as conceptualised in Table 8.1, is critical to breaking maladaptive cycles of dysregulation and promoting healthier relational and emotional outcomes for both members of the dyad.

Bidirectional Dysregulation

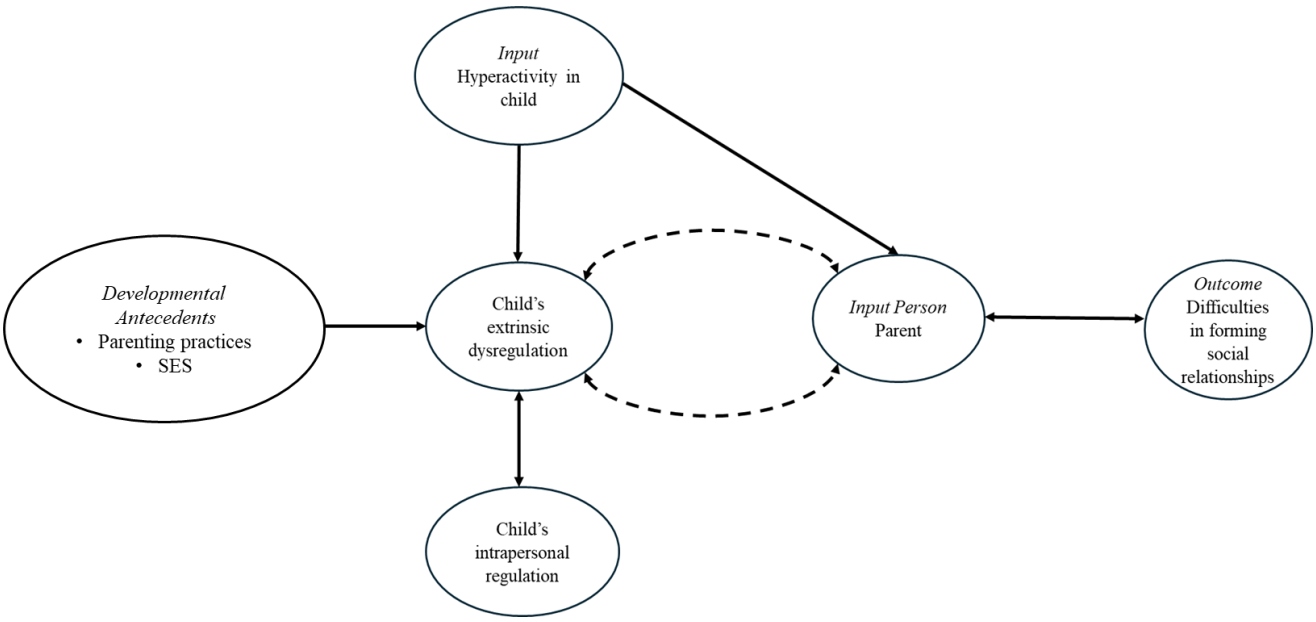
Bidirectional dysregulation involves both parent and child engaging in mutually escalating emotional reactions that fail to resolve distress, as detailed in Table 8.1. This cycle typically manifests as reciprocal negative behaviours, such as shouting, withdrawal, or emotional outbursts, that amplify rather than alleviate tension within the relationship. Rather than functioning as co-regulators, the parent and child become caught in an interactive loop of emotional reactivity, each intensifying the other's distress. This pattern reflects misattunement and poor synchrony, where emotional signals are misunderstood or met with maladaptive responses (Bell & Wolfe, 2004; Sameroff, 2009). Over time, such persistent dysregulation erodes trust and impairs the establishment of secure attachment, limiting opportunities for the development of adaptive regulation strategies.

The bidirectional model challenges assumptions that dysregulation originates solely from either the parent or the child, emphasising the transactional nature of emotional development. Both caregiver and child frequently operate from a place of limited regulatory resources, influenced by individual vulnerabilities and contextual stressors, including parental psychopathology or adverse experiences (Barroso et al., 2018). This mutual dysregulation manifests as escalating emotional responses, such as shouting, withdrawal, or emotional outbursts, which intensify rather than

alleviate distress within the dyadic relationship. The resulting cyclical volatility, as outlined in Table 8.1, creates a relational context characterised by strain, mistrust, and impaired emotional synchrony. Over time, these patterns undermine the development of secure attachment and stable co-regulation, reinforcing maladaptive regulatory strategies and increasing the difficulty of restoring emotional balance within the dyad.

Building on the recognition of reciprocal dysregulation within the child-caregiver relationship, Figure 8.1 presents a detailed model that specifically addresses how hyperactive and impulsive behaviours, characteristic of ADHD, interact dynamically with parental responses. This model situates extrinsic dysregulation within a wider developmental and contextual framework, illustrating how parenting practices and socio-economic adversity converge to shape co-regulatory processes. It emphasises the mutually reinforcing pathways between a child's hyperactivity and emerging self-regulatory capacities, demonstrating how these interactions influence the child's capacity for adaptive functioning and social integration.

Figure 8.1. *Exemplar Path Diagram of Extrinsic Dysregulation in Children with ADHD.*



Within Figure 8.1, the model delineates the complex, bidirectional interactions that underpin dysregulated exchanges between a hyperactive child and a parent. Central to the framework are developmental antecedents that shape both the child's extrinsic dysregulation and the caregiver's regulatory responses: parenting practices and SES. Parenting practices can shape the regulatory environment in which a child's hyperactivity is expressed and responded to. Patterns of inconsistent discipline, low emotional attunement, or punitive reactions are well-documented predictors of increased behavioural dysregulation in children with ADHD, as such practices heighten emotional unpredictability and diminish opportunities for co-regulatory repair (Sonuga-Barke and Halperin, 2010). In Swiss contexts, child-rearing tends to emphasise behavioural conformity, emotional restraint, and early independence, particularly within educational and institutional frameworks (Fibbi & Truong, 2015). This may lead to lower tolerance for outward displays of hyperactivity and impulsivity, which are often construed as breaches of normative behavioural expectations. Consequently, Swiss parents of hyperactive children may experience heightened social pressure to control such behaviours, potentially increasing the likelihood of harsh or distancing responses when children fail to meet these standards. In contrast, UK parenting cultures are often characterised by greater pluralism, with broader acceptance of emotional expression and behavioural variation across socio-economic and ethnic groups (Goodall & Montgomery, 2014). While this does not preclude punitive responses, it may afford a slightly more flexible framework in which parental interpretation of hyperactive behaviour is situated within developmental or neurodivergent narratives rather than moral or disciplinary failings.

SES may also shape the developmental environment in which child regulatory processes unfold. In Switzerland, policy frameworks often prioritise integration and self-sufficiency, particularly for migrant families, which can place substantial demands on caregivers already contending with structural barriers (Fibbi & Truong, 2015). By contrast, the UK, while not without

systemic limitations, has historically provided comparatively broader access to parenting support services and early intervention programmes aimed at socio-economically disadvantaged families (Russell et al., 2016). These cross-national differences reflect varying socio-cultural expectations surrounding family responsibility and state involvement in caregiving. Yet, across both settings, economic hardship has consistently been linked to increased parental stress, diminished emotional availability, and greater likelihood of reactive or inconsistent caregiving. In families with children displaying hyperactive behaviour, such dynamics are particularly consequential, as heightened behavioural sensitivity amplifies the impact of caregiving instability on emotion regulation.

An illustrative component of the model is the child's hyperactivity, conceptualised as a potential initial trigger that directly influences the parent as the input person, eliciting regulatory responses that vary depending on parental factors such as stress reactivity, attributional style, and coping strategies (Azman Ö. et al., 2021). This extrinsic dysregulation, which is manifested through impulsive outbursts and attentional difficulties, engages the parent in a dynamic reciprocal interaction wherein parental regulatory input both responds to and shapes the child's behaviour. Concurrently, the child's extrinsic dysregulation maintains a bidirectional relationship with their intrapersonal regulation, defined as the internal capacity to modulate emotions and attention. Drawing on Zaki & Williams (2013), effective development of intrapersonal regulation is contingent upon repeated contingent co-regulatory exchanges with the parent. When parental regulatory input is inconsistent or compromised, often influenced by heightened stress or negative attributions, the child's extrinsic dysregulation intensifies, reducing opportunities for the child to develop autonomous self-regulation and thereby further impairing intrapersonal regulatory capacity. This interplay establishes a complex ongoing feedback loop in which the child's hyperactivity provokes parental regulatory responses, which in turn modulate the child's external behavioural regulation, while the child's internal regulatory capacity fluctuates in tandem with

external dysregulation. Thus, child and parent exist within a continuous two-way transactional system where both extrinsic and intrapersonal regulatory processes reciprocally influence one another over time.

Finally, the model delineates a bidirectional pathway linking parent-child interactions with the child's developmental outcomes. Dysregulated exchanges between parent and child disrupt the progressive acquisition of self-regulatory skills, which are critical for navigating complex social environments and forming positive peer relationships. When early regulatory difficulties persist, the child's behavioural and emotional challenges frequently lead to social rejection and isolation, which are outcomes commonly observed in children with ADHD (Hoza et al., 2005). The social exclusion experienced by the child not only exacerbates their difficulties but also intensifies parental stress, concern and potentially maladaptive caregiving responses. This reciprocal process creates a feedback loop whereby heightened parental stress further compromises the caregiving environment, diminishing the consistency and effectiveness of parental regulatory input. Consequently, the cycle of dysregulation between parent and child is maintained and may become increasingly entrenched, impeding the child's long-term developmental trajectory across emotional, behavioural and social domains.

To illustrate, consider a seven-year-old boy diagnosed with ADHD, with a predominantly hyperactive impulsive presentation. His mother, experiencing financial strain and limited social support, responds inconsistently to his escalating behaviour, alternating between harsh reprimands and withdrawal (Russell et al., 2016; Sonuga-Barke and Halperin, 2010). Concurrently, the child's intrapersonal regulation deteriorates; he struggles to down-regulate excitement and maintain sustained attention without external cues, consistent with theoretical models emphasising the dependency of intrapersonal regulation on co-regulatory experiences (Zaki & Williams, 2013). Over time, these difficulties manifest in peer rejection on the playground, exemplifying the

model's final link between dysregulated child-parent exchanges and adverse social outcomes, which in turn can further entrench the cycle of dysregulation and hinder the child's overall developmental progress. Addressing these interconnected challenges through supportive and consistent positive parenting is therefore critical to breaking the cycle and fostering more adaptive developmental trajectories for children with ADHD. Building on this foundation, the next subsection will introduce the RQs that guide Study 3, aiming to further explore and validate key aspects of the extrinsic dysregulation framework.

8.4 Research Questions

To guide Study 3, the following RQs are proposed:

RQ8) How do children develop difficulties in extrinsic emotion regulation (i.e., struggles in influencing the emotional states of others)?

RQ9) In what ways do parents contribute to their children's difficulties in regulating the emotional states of others (extrinsic dysregulation)?

8.5 Theoretical Background

Eisenberg's Emotion Socialisation Theory

Emotion Socialisation Theory (Eisenberg et al., 1998) has long been a foundational framework for understanding how children's emotional development is shaped by their social environment, particularly by parents' emotional responses and regulation strategies. The theory delineates the processes by which children internalise emotion regulation through three primary mechanisms: parental reactions to their emotions, direct emotion-related communication, and the modelling of emotion regulation strategies. While this theory has offered valuable insights into the

intrapersonal aspects of emotion regulation, its limitations become increasingly apparent when considered in the context of extrinsic dysregulation, where children often struggle to regulate the emotions of others. During middle childhood, children develop more sophisticated socio-emotional skills that enable them to exert a more pronounced influence on the emotional climate within the family, particularly in interactions with parents and peers (Volling et al., 2002; Zeman et al., 2006). However, this emerging capacity is frequently accompanied by significant difficulties, as children may lack the necessary emotional skills to effectively regulate parental emotions, leading to increased emotional strain and challenges (Mah & Ford-Jones, 2012).

At the centre of Emotion Socialisation Theory lies an implicit assumption of unidirectional influence, wherein parents are the primary agents of socialisation, shaping children's emotional competencies through their reactions and modelling (Eisenberg et al., 1998). However, this perspective fails to adequately account for the bidirectional emotional dynamics that become more pronounced in middle childhood. By this stage, children not only internalise parental strategies but also begin to actively and sometimes unsuccessfully shape the emotional experiences of others, particularly parents (Thompson, 2014). Research indicates that children often attempt to comfort distressed parents, intervene in familial conflicts, or diffuse emotional tension, but these regulatory efforts can be challenging and may result in increased tension or emotion dysregulation for both parties (Lunkenheimer et al., 2007; Volling et al., 2002). Thus, the theory's unidirectional focus appears reductive, overlooking the complex, reciprocal nature of emotional socialisation and the difficulties children face in managing others' emotions.

Empirical studies underscore the need to conceptualise emotion socialisation as a dynamic, reciprocal process rather than a one-directional influence. For example, Hughes (2011) and Hajal and Paley (2020) highlight how children's emotional actions can elicit significant emotional responses in parents, influencing how parents subsequently regulate their own emotions. In turn,

these regulatory adjustments by parents can impact the child's emotional development, creating a feedback loop of mutual emotional influence. This reciprocal dynamic becomes particularly salient in the context of extrinsic dysregulation, where children's emotional behaviours not only reflect but also actively shape and sometimes complicate the regulatory capacities of others within the family. Although a child's efforts to soothe a distressed parent may promote emotional growth and family cohesion (Gottman et al., 1997), many children struggle to modulate parental emotions effectively. Indeed, maladaptive strategies such as escalating emotional tension, withdrawing, or deflecting distress not only fail to alleviate dysregulation but may also exacerbate emotional volatility within the family, thereby intensifying the child's regulatory burden (Hughes et al., 2007). This underscores the limitations of existing models that insufficiently account for the challenges children face in managing others' emotions and the potential negative consequences of their regulatory efforts.

Emotion Socialisation Theory in its current form remains limited in its capacity to explain the difficulties children face when their regulatory attempts impact parental emotional states and how these reciprocal emotional exchanges contribute to the family system. To advance the conceptualisation of extrinsic dysregulation, it is necessary to move beyond the unidirectional framing of emotion socialisation that has dominated existing theoretical frameworks. By integrating a bidirectional perspective, a more comprehensive understanding of emotion regulation can be developed, one that recognises children as active agents whose regulatory struggles and efforts contribute to both their own emotional development and the broader emotional systems within the family. This sets the stage for the application of Family Systems Theory, which further emphasises the interdependent nature of emotion regulation across family members, positioning the family as a dynamic emotional system in which each member's regulatory difficulties and efforts impact the collective emotional climate.

Prest & Protinsky's Family Systems Theory

Family Systems Theory (Prest & Protinsky, 1993) provides valuable insights into how family dynamics shape children's emotion regulation, especially during middle childhood when children's cognitive and emotional abilities undergo significant development. The theory suggests that the emotional experiences of children are intertwined with the functioning and interactions within their family unit. Specifically, the emotional responses of parents and the relational patterns among family members play a critical role in either fostering or hindering the development of adaptive emotion regulation skills in children. Parental emotion dysregulation, such as difficulty managing frustration, anger, or anxiety, can be particularly harmful, often leading to the intergenerational transmission of maladaptive regulation strategies (Lotto et al., 2024). Research has shown that children raised in emotionally supportive family environments tend to develop more effective regulation skills, whereas those in households marked by conflict, inconsistent parenting, or emotional unavailability are more likely to experience emotion dysregulation (Azman Ö. et al., 2021; Fibbi & Truong, 2015). For example, children in emotionally stable homes, where parents are responsive and emotionally available, tend to develop secure emotional foundations, enabling them to regulate their emotions effectively. In contrast, external stressors such as parental separation, substance abuse, or financial hardship disrupt these emotional processes, contributing to heightened emotional reactivity and difficulties in regulating not only their own but also others' emotions.

One of the strengths of Family Systems Theory lies in its emphasis on the interconnectedness of family relationships. It underscores the importance of both parental emotional involvement and the quality of family interactions in shaping emotion regulation. However, this framework's focus on intra-familial dynamics has been critiqued for overlooking broader socio-cultural and environmental influences that interact with family systems to shape

children's emotional development (Bristow, 2023; Connell & Stambler, 2021). These external stressors can significantly influence the regulatory abilities of children, particularly in the context of middle childhood when peer interactions and broader social contexts become increasingly important in the development of both intrinsic and extrinsic regulation. Notably, while Family Systems Theory has been instrumental in explaining the role of parental emotional availability in children's ER, it is limited in exploring how socio-economic adversity or community dislocation, influence emotion regulation practices within families. For instance, socio-economic hardship can exacerbate parental stress, decreasing emotional availability and, by extension, the child's capacity for managing both their own and others' emotions, often resulting in increased difficulties in extrinsic regulation.

Moreover, while Family Systems Theory offers a foundational understanding of the role of family dynamics in shaping children's emotion regulation, it remains insufficient in addressing the challenges children face when attempting to regulate others' emotions. Children whose parents exhibit high emotional volatility, such as frequent displays of anger, frustration, or anxiety, often struggle to manage these emotional states effectively. They may attempt to soothe or influence parental emotions but frequently encounter difficulties, resulting in maladaptive regulatory behaviours that can heighten family tension (Lotto et al., 2024). Nevertheless, Family Systems Theory tends to overlook how external factors, such as the school environment, peer relationships, or community support, can either buffer or exacerbate the emotional challenges children face when regulating others (Vélez-Agosto et al., 2017). Studies have increasingly illuminated the role of these external pressures in shaping extrinsic emotion regulation. For example, research by Duran et al., (2020) underscores that children in families experiencing chronic stress or conflict struggle not only with self-regulation but also with regulating others' emotions. These children often engage in dysfunctional social interactions characterised by misinterpreting emotional cues or

responding ineffectively to others' emotional needs, which further intensifies relational difficulties and complicates their regulatory efforts.

However, a critical gap remains in research that specifically examines middle childhood in the context of extrinsic emotion regulation. Much of the existing literature either concentrates on younger children (Nimmapirat et al., 2022) or focuses on adolescence (Arbel, 2024), leaving a significant void in our understanding of emotion regulation during this crucial developmental window. While studies such as Cheng et al., (2024) and Lin et al., (2024) have started to address how external stressors, particularly family conflict and economic hardship, compound children's emotional difficulties, the specific impact of these stressors on children's extrinsic regulation remains underexplored. These studies reveal how external factors interact with the child's immediate family environment, reinforcing the need to adopt a broader perspective in examining extrinsic emotion regulation. For example, Cheng et al., (2024) highlight that children from socio-economically disadvantaged families often exhibit heightened emotional reactivity and difficulty regulating their responses to others' emotions, which is exacerbated by inconsistent or volatile parental emotional availability.

Given these limitations in Family Systems Theory, integrating it with Eisenberg et al.'s (1998) Emotion Socialisation Theory provides a more comprehensive framework. Eisenberg and colleagues (1998) emphasise the dual role of parents as both regulators of their own emotions and as emotional guides for their children, helping them navigate the social world and regulate their interactions with others. By blending Family Systems Theory with Emotion Socialisation Theory, a better understanding of how both intrinsic and extrinsic factors influence children's emotional development can be grasped. Inconsistent or overly controlling parenting, as Azman Ö. et al., (2021) and Fibbi & Truong (2015) suggest, can significantly disrupt the development of effective emotion regulation strategies, particularly in children with ADHD. These findings highlight the

importance of considering how poor parental emotion regulation and inconsistent parenting practices contribute to both the internal emotional struggles children face and their difficulties in effectively regulating the emotions of others in social settings.

In sum, while Family Systems Theory provides valuable insight into the role of family dynamics in emotion regulation, its application to middle childhood would be enhanced by incorporating broader socio-cultural perspectives, such as Emotion Socialisation Theory. By integrating these perspectives with Sullivan's Interpersonal Theory (1953), researchers can build a more holistic understanding of the familial and social factors that influence children's emotional development.

Sullivan's Interpersonal Theory

Sullivan's Interpersonal Theory underscores the pivotal role of social interactions in shaping emotional experiences, positing that emotional development is fundamentally relational (Sullivan, 1953). This perspective is particularly salient during middle childhood, a developmental stage characterised by increasingly complex social networks and peer dynamics. Despite its relevance, the application of Sullivan's framework to emotion regulation and emotion dysregulation in middle childhood remains underexplored, with existing research disproportionately focused on early childhood and adolescence (i.e., see Cooley & Fite, 2016; Peisch et al., 2020). Consequently, important nuances of how relational processes influence emotional competence and dysregulation during this critical period remain insufficiently understood, highlighting a clear need for further empirical investigation.

Recent empirical studies have begun to elucidate the interplay between interpersonal relationships and ER during middle childhood, yet significant gaps remain. For instance, Peisch et al., (2020) examined the longitudinal impact of parental socialisation of coping strategies on

children's emotion regulation abilities using a sample of 256 parents of children aged 5 to 12 years. The results from the longitudinal SEM analyses revealed that parental engagement coping predicted greater adaptive emotion regulation in children, while disengagement coping strategies were associated with maladaptive emotion regulation outcomes. However, the study's emphasis on parental strategies neglects the bidirectional nature of emotional exchanges within the family context, disregarding how children's emotional responses may, in turn, influence parental behaviour. This oversight limits the applicability of these findings to understanding extrinsic dysregulation, particularly how children attempt to regulate others' emotions within complex family dynamics. Similarly, Cooley & Fite (2016) investigated how emotion regulation moderates the relationship between peer victimisation and internalising symptoms in middle childhood, finding that effective regulation of sadness and worry mitigated the impact of peer victimisation. However, the study's intrapersonal focus fails to capture the broader interpersonal context, especially how children's emotion regulation strategies may inadvertently exacerbate peer conflict or foster relational discord. By neglecting how children's regulatory attempts impact others, these studies overlook the complex feedback loops inherent in Sullivan's framework, wherein interpersonal dynamics perpetuate cycles of dysregulation.

Further complicating the picture, Hubbard et al., (2010) demonstrate that children's emotional expressions can evoke corresponding emotional responses in peers, indicating that emotion regulation in middle childhood is not merely an intrapersonal skill but a relational process. This relational aspect aligns with Sullivan's emphasis on interpersonal dynamics but raises critical questions about how children navigate the dual challenges of regulating both their own and others' emotions. This dynamic, however, remains underexplored, particularly in the context of middle childhood. Moreover, Lin et al., (2024) underscore the mediating role of emotion regulation in the association between family conflict and internalising symptoms, emphasising that family conflict

and socio-economic stress can undermine children's regulatory capacities. However, their focus on family-level dynamics overlooks broader socio-cultural and contextual influences, such as school or peer group settings, that may either exacerbate or mitigate extrinsic dysregulation. Integrating these external factors with Sullivan's interpersonal framework could provide a more comprehensive understanding of how children's emotional experiences are shaped by multi-layered social contexts.

Taken together, these three theoretical frameworks, Emotion Socialisation Theory (1998), Family Systems Theory (1993) and Sullivan's Interpersonal Theory (1953), each offer critical but distinct insights into the development of emotion regulation and dysregulation in middle childhood. While Interpersonal Theory emphasises the reciprocal nature of social interactions, Family Systems Theory foregrounds intra-familial dynamics and their role in shaping ER. In contrast, Emotion Socialisation Theory highlights how parental guidance and modelling of emotion regulation strategies shape children's regulatory capacities. However, these frameworks remain largely disconnected, with limited empirical integration to account for how intrinsic and extrinsic regulation processes intersect in middle childhood. As children navigate increasingly complex social contexts, understanding how these theoretical perspectives converge to influence both intrinsic and extrinsic ER is crucial for developing comprehensive, multi-dimensional approaches to intervention. The following subsection will consider key methodological challenges in researching extrinsic dysregulation, including research design, measurement approaches, and ethical considerations.

8.6 Methodological Considerations

Challenges in Research Design

Longitudinal designs are essential for understanding the dynamic relationship between a child's intrinsic regulatory capacities and the evolving external emotional demands they face, particularly their difficulties in regulating the emotions of others. While cross-sectional studies are carefully designed to provide valuable snapshots of emotion regulation at specific developmental stages, they are inherently limited in capturing how these processes unfold over time. In contrast, longitudinal research enables the tracking of developmental trajectories and offers insight into how children's regulatory efforts directed toward others evolve across different contexts and life stages (Echegaray et al., 2024). These designs are especially valuable when studying extrinsic dysregulation, as they reveal how ongoing environmental and relational factors shape a child's ability to manage not only their own emotions but also the emotions of those around them (Lotto et al., 2024). By capturing temporal patterns and cumulative influences, such as socio-economic hardship and inconsistent parenting, longitudinal approaches provide a more comprehensive understanding of the transactional nature of emotion regulation. Using repeated measures, particularly naturalistic observation or EMA, researchers can document real-time fluctuations in children's attempts to regulate the emotions of others. This provides a richer and more nuanced understanding of how environmental stressors accumulate and influence children's emotional functioning over time (Souza et al., 2019). Continuous data collection also facilitates the identification of patterns of resilience or vulnerability in children's extrinsic regulation efforts, which is critical for developing more effective and tailored interventions.

Despite their clear advantages, longitudinal studies face significant challenges, especially when involving families experiencing socio-economic adversity. Attrition presents a major

obstacle, as unstable living conditions and financial difficulties often hinder sustained participation. This selective dropout tends to result in samples composed predominantly of more stable and better-resourced families, thereby limiting the generalisability of findings (Nimmapirat et al., 2022). To address this, robust retention strategies are necessary to reduce participant burden and enhance engagement. Employing mobile-based assessments and community-focused recruitment methods may improve retention and increase the inclusivity and representativeness of study samples, particularly among vulnerable populations. Furthermore, repeated measures introduce challenges related to participant compliance. The demands of ongoing data collection can place considerable strain on participants, particularly those from vulnerable groups, potentially reducing engagement or causing non-compliance (Stone & Shiffman, 2002). Another substantial challenge lies in capturing the complex and reciprocal nature of emotion regulation between children and their social environment. Traditional models often conceptualise the influence of external factors on children's regulation as unidirectional, with children's difficulties seen solely as outcomes of environmental stress. However, research highlights that children's struggles to regulate others' emotions can also evoke responses from caregivers or peers that further influence the child's regulatory development (Teague et al., 2018). This reciprocal dynamic creates feedback loops that perpetuate challenges in managing external emotional demands, underscoring the need for research designs that capture these interactions.

Advanced analytical methods such as CLPMs and multilevel modelling are often employed in traditional large-scale long-term longitudinal panel studies, where data is collected at widely spaced intervals (Lincoln et al., 2022). These approaches help investigate reciprocal relationships over time, for example, between child emotion dysregulation and parenting behaviours. However, CLPMs often conflate between-person and within-person processes and may overlook dyadic or partner effects, which are crucial in modelling interpersonal dynamics such as extrinsic

dysregulation (Lüdtke & Robitzsch, 2022). To address these limitations, researchers are increasingly turning to methods better suited for intensive longitudinal designs , such as experience sampling, daily diaries, or measurement burst designs, where data is collected at a higher temporal resolution. In these contexts, dynamic SEM allows for modelling within-person, bidirectional processes over time, capturing the nuanced and transactional nature of emotional exchanges more effectively (Blanke et al., 2022; Hamaker et al., 2021). Such methods are particularly well-suited to studying extrinsic dysregulation, which unfolds in real-time, interactive contexts between children and parents. Despite their potential, these advanced approaches remain underutilised in developmental research. Therefore, applying them across both short and long-term longitudinal frameworks could yield richer insights into how early struggles in regulating others' emotions impact later outcomes, such as peer functioning, school engagement, and mental health.

In sum, longitudinal research offers a promising approach to elucidate the complexities of children's difficulties in regulating others' emotions, yet it is accompanied by significant challenges related to participant retention, compliance, and capturing the nuanced reciprocal influences within social contexts. Additionally, improving sample diversity and representativeness is vital to enhance ecological validity and ensure findings are relevant across varied socio-cultural settings. Without addressing these issues, there is a risk that interventions may remain limited in their effectiveness and applicability across different socio-cultural contexts.

Measuring Extrinsic Dysregulation

A key methodological challenge in studying extrinsic dysregulation lies in developing reliable and valid measures that adequately capture the complex ways external influences shape children's difficulties in regulating the emotions of others. Traditional self-report tools and observational protocols, while effective in assessing children's internal regulation, often fall short

when it comes to differentiating intrinsic regulatory challenges from dysregulation that arises in response to environmental stressors such as inconsistent caregiving or family conflict (Fenning et al., 2018; Lotto et al., 2024). Current assessment methods frequently do not distinguish between children's own regulatory capacities and the impact of external developmental antecedents on their struggles to modulate others' emotions. Given the reciprocal and contextual nature of these interactions, refining measurement approaches that capture the dynamic interplay between children's emotional difficulties, and their social environment is essential.

Increasingly, researchers have advocated for integrating EMA with qualitative interviews to better explore these complexities (Schatten et al., 2020). Mixed methods designs enable a deeper understanding of how environmental disruptions such as family conflict, socio-economic adversity, or caregiver stress interact with children's efforts to regulate others' emotions. Continuous monitoring of emotional responses allows researchers to identify patterns of vulnerability and resilience over time (Colombo et al., 2020). Complementary qualitative interviews may further illuminate the emotional experiences of both children and caregivers, offering insights into how environmental disruptions shape the child-parent dynamic and the child's capacity to manage others' emotions. For example, Mamontov (2023) employed interpretative phenomenological analysis to explore how adolescents with ADHD and their families make sense of regulatory challenges, highlighting the co-constructed nature of emotional experiences. Participatory research approaches also emphasise how emotional expression and family dynamics influence children's accounts of their emotional worlds (Kina, 2012). Such qualitative insights are critical for designing context-sensitive interventions that acknowledge the complexity of emotion regulation within family systems.

The advancement of sophisticated measurement tools, such as the Unpleasant and Pleasant Emotion Regulation Assessment (Echegaray et al., 2024), represents a promising step forward in

capturing the complex, real-time interaction between children's internal processes and external environmental influences. However, further validation is necessary to ensure these tools accurately detect culturally specific regulatory patterns and reflect the nuanced ways in which environmental factors impact children's ability to regulate the emotions of others. Chronic stressors such as socio-economic adversity and family instability may amplify children's vulnerability to extrinsic dysregulation by disrupting the stability and predictability of their social environment (Maynard & Harding, 2010). As these tools evolve, they will enable more precise identification of how specific environmental dynamics, particularly those within close relationships, influence children's regulatory development. Overall, the development of refined measures for extrinsic dysregulation represents significant progress, yet the field must remain attentive to the methodological challenges involved in assessing emotion regulation within real-world contexts and to the cultural validity of these tools.

Ethical Considerations

Ethical considerations are particularly complex and central when researching extrinsic dysregulation, especially with vulnerable children and families facing multiple layers of adversity. These families often experience developmental antecedents, such as socio-economic hardship, family conflict, and other stressors that profoundly shape children's emotional experiences. As research increasingly focuses on how these external influences affect children's difficulties in regulating the emotions of others, the ethical implications become more pressing (Eriksson et al., 2018). Researchers must carefully engage with the potential risks of exploring such sensitive topics, which may inadvertently heighten distress or retraumatise participants. As Olson (2023) observes, studies often fail to account for how children's emotional challenges are shaped by interrelated systemic factors rather than isolated deficits. This raises difficult ethical questions

about researchers' responsibilities when patterns of distress emerge. For example, if a child exhibits worsening challenges in regulating others' emotions, researchers must consider appropriate courses of action, balancing the duty to protect participants with the need to maintain scientific integrity. Emphasising individual or familial shortcomings without acknowledging broader socio-economic and environmental contexts risks oversimplifying complex emotional processes and reinforcing stigma.

Furthermore, research must remain attuned to the power dynamics inherent in studies involving children from socio-economically marginalised backgrounds. Families experiencing financial hardship frequently occupy vulnerable social positions, and inquiries into their emotional development risk unintentionally reinforcing deficit-based narratives or contributing to the stigmatisation of their lived experiences. Pearlman (2023) argues that emotional expressions should not be reduced to decontextualised data points but understood within the broader socio-cultural, economic, and relational contexts in which they occur. Ethical research practice demands the recognition of children as active participants in their emotional development, rather than passive subjects of observation. This requires moving beyond linear, reductive models towards conceptual frameworks that accommodate the multifaceted nature of emotional exchanges across ecological systems. Importantly, the influence of structural inequities, such as poverty, systemic discrimination, and disparities in access to mental health services, must be explicitly integrated into research design and interpretation. Maintaining conceptual precision and ethical integrity is essential to prevent the perpetuation of culturally reductive assumptions regarding emotional competence and familial functioning, thereby fostering more contextually grounded and socially responsible interpretations of emotion regulation.

In summary, researchers must engage sensitively with participants lived experiences, continuously reflecting on potential harms and actively mitigating risks. This involves ensuring

that the voices of children and families are respected and represented with dignity, recognising the relational, socio-cultural, and economic contexts shaping their emotional lives. Through such ethical rigor and reflexivity, research can advance a more accurate, responsible, and compassionate understanding of children's difficulties in regulating the emotions of others, thus improving emotional wellbeing without exacerbating vulnerabilities.

8.7 Summary and Concluding Thoughts

This chapter has advanced a critical reconceptualisation of emotion regulation in childhood by introducing and elaborating upon the novel framework of extrinsic dysregulation. Central to this framework is the recognition of a phenomenon that has been largely overlooked within the field: children's difficulties in regulating the emotions of others, particularly within child-parent dyads. This perspective marks a substantial theoretical and empirical departure from traditional emotion regulation models, which have predominantly focused on intrapersonal processes, that is, how children manage and modulate their own emotional states. To articulate this conceptual shift, the chapter distinguished among three regulatory domains: intrapersonal regulation (self-focused emotion regulation), intrinsic interpersonal regulation (seeking others' support to manage one's own emotions), and extrinsic interpersonal regulation (efforts to regulate the emotions of others), with emphasis placed on the third domain, which remains critically under-theorised in developmental research. In operational terms, this conceptual innovation is captured through an integrative framework presented in Table 8.1, alongside a corresponding path diagram in Figure 8.1. These schematic representations synthesise the key developmental processes underlying extrinsic dysregulation, highlighting the reciprocal regulatory interactions within child-parent dyads as central to understanding the emergence and persistence of difficulties children experience in regulating others' emotions. In addition to its theoretical contributions, the chapter highlighted

key methodological considerations necessary for advancing research on extrinsic dysregulation. These include the application of advanced longitudinal designs, such as CLPMS and dynamic SEM, to capture the transactional and temporally embedded nature of these processes. Without such methodological rigour, research risks oversimplifying complex relational phenomena or misattributing dysregulation to child-level deficits.

In sum, this chapter offers a theoretical advancement by repositioning children's difficulties in regulating the emotions of others, particularly those of parents, as a central, developmentally meaningful construct. It delineates how these difficulties are shaped by specific developmental antecedents, parenting practices and SES, that collectively constitute the relational and environmental milieu of emotional development. The forthcoming chapter will constitute the final section of this thesis, revisiting the three studies conducted and synthesising key findings.

Chapter Nine

Discussion and Conclusion

9.1 Introduction

"When little people are overwhelmed by big emotions, it's our job to share our calm, not join their chaos". - L.R. Knost (2013)

Knost (2013) succinctly captures the essence of emotion dysregulation in childhood, suggesting that the way adults, caregivers, and societal structures respond to children's emotional distress plays a pivotal role in shaping their regulatory capacities. Children do not learn to manage emotions in isolation; their ability to regulate is profoundly influenced by external factors, including parenting styles, social interactions, educational environments, and cultural contexts. When these external supports are inconsistent, inadequate, or even disruptive, children may struggle to develop effective regulatory mechanisms, leading to what this thesis conceptualises as extrinsic dysregulation, a form of dysregulation that arises not merely from internal deficits, but from the external environment's failure to provide adequate regulatory scaffolding.

This thesis places emotion dysregulation in middle childhood at its core, with a particular focus on the role of extrinsic factors in shaping its trajectory. Through three interrelated studies, this research has explored the complexities of emotion dysregulation, drawing on existing literature, large-scale longitudinal data, and theoretical innovation to deepen our understanding of how children's regulatory capacities develop, are influenced, and can be better supported. Study 1, the scoping review, mapped the existing body of research on emotion dysregulation, highlighting key gaps, most notably, the underrepresentation of extrinsic influences in dominant theoretical models. Study 2, the analysis of longitudinal data from the MCS and z-proso, provided

empirical insights into the cross-national associations between parenting practices, ADHD symptoms and anger/emotion dysregulation, demonstrating that such relationships are shaped by socio-environmental conditions. Study 3 culminated in the development of a novel theoretical framework, introducing the concept of extrinsic dysregulation to capture and conceptualise children's difficulties in regulating the emotions of parents, and how developmental antecedents, including parenting practices and SES, may shape such challenges. This chapter serves as the integrative discussion of these findings, synthesising their contributions to theory, empirical knowledge, and practical application. It begins by summarising the key insights from each study, revisiting the RQs that guided this thesis. Following this, the strengths and limitations of this doctoral research are acknowledged, reflecting on methodological challenges, theoretical constraints, and areas that warrant further exploration. Finally, this chapter reflects on the thesis, adopting a reflective inquiry approach to consider both the intellectual and personal journey undertaken in this research.

9.2 Summary of Main Findings: Revisiting the Research Questions

Study 1 Findings

Study 1 **(RQ1)** addressed the following: *how is emotion dysregulation conceptualised in the context of middle childhood?* The scoping review revealed factors that prompt a revaluation of the definitions and frameworks used to understand emotion dysregulation during middle childhood. Historically, emotion dysregulation in middle childhood has been framed as a deficit in internal control, predominantly characterised by an inability to effectively manage emotional responses, impulsivity, and over reactivity (Cole & Hall, 2008; Nock et al., 2008). However, the review suggested that such a unidimensional perspective is too reductive. A recurrent theme in the

literature is the underdeveloped capacity for emotional recognition and labelling during middle childhood. While previous models have primarily emphasised heightened reactivity, **Study 1** argued that difficulties in emotional awareness may be equally, if not more, critical. For instance, Wilson-Mendenhall & Dunne (2021) highlight that a lack of emotional granularity, the nuanced understanding and articulation of emotional experiences, can significantly exacerbate dysregulation, suggesting that the problem lies not merely in emotional intensity, but in the very comprehension of emotions. This re-evaluation challenges researchers to rethink emotion dysregulation as a developmental mismatch. Rather than solely an internal deficit, it is increasingly evident that the emerging cognitive capabilities of children must be seen in relation to their evolving understanding of emotional experiences.

A second core finding of the review pertained to the coping strategies that children employ in response to emotional distress. Research has categorised avoidance, suppression, and withdrawal as inherently maladaptive (Skinner & Zimmer-Gembeck, 2007). However, the critical evaluation presented herein suggests that these behaviours may be contextually adaptive responses in environments that do not provide sufficient emotional support or stability. Research by Bender et al., (2012) illustrates that, under high-stress conditions or in the presence of chronic familial instability, such strategies might serve as immediate protective mechanisms, even though their prolonged use may lead to deeper issues later in life. This reconceptualisation compels researchers to question the labelling of these coping strategies as 'failures' in emotion regulation. Instead, such strategies might be better understood as context-specific adaptations that temporarily mitigate emotional overwhelm.

Additionally, an underexplored aspect of the review was the role of development antecedents in shaping emotion dysregulation. Earlier models predominantly focused on individual factors, such as temperament and cognitive deficits (Cole & Hall, 2008). However, the evidence

now points to a complex interplay between internal processes and external systems. Barnes et al., (2013) and Oloye & Flouri (2021) provide empirical support for the claim that the environments in which children grow up, from familial structures to educational settings, affect their emotion regulatory abilities. Study 1 critically highlighted how adverse conditions such as inconsistent caregiving, familial conflict, or negative school environments (Findlay et al., 2009; Goodman et al., 2011) can amplify the difficulties associated with emotion dysregulation. Moreover, broader societal contexts further modulate how children perceive and express their emotions. This perspective exposes a significant gap in earlier research, as the tendency to isolate the child as the sole locus of emotional malfunction often neglects the external circumstances that contribute to these issues. It thus calls for a reorientation toward holistic, context-sensitive models that integrate both psychological processes and environmental determinants.

In reassessing **RQ1**, the findings from Study 1 compel researchers to adopt a more critical and dynamic understanding of emotion dysregulation. This reconceptualisation challenges established models by highlighting gaps in the current literature, specifically, the need to integrate cognitive, emotional, and environmental factors into a unified framework. There is also a pressing need for studies that acknowledge diversity in emotional expression and regulation across different social settings. In sum, the scoping review lays the foundation for rethinking emotion dysregulation in middle childhood as a dynamic, integrative construct, one that is as much about the child's internal emotional world, as it is about the social and environmental contexts that shape it.

Study 2 Findings

MCS Findings

RQ2) What key demographic factors contribute to the development and persistence of emotion dysregulation symptoms in children aged 5 and 7?

Study 2A revealed important demographic predictors of emotion dysregulation in children. At age 5, gender and maternal education were significant contributors to emotion dysregulation, while income and ethnicity showed no significant effect. By age 7, only maternal education remained a significant factor, suggesting that the influence of demographic factors may evolve as children age. This aligns with findings by Biederman & Faraone (2006) and Hinshaw & Scheffler (2014), who noted that early environmental factors, including maternal education, have a lasting influence on ADHD-related symptoms and emotional outcomes.

The results of **Study 2** challenge the neurobiological focus traditionally emphasised in ADHD research (e.g., Averill, 1998). Instead, they highlight the importance of developmental antecedents, particularly family dynamics, in shaping emotion regulation in children with ADHD. This is consistent with Gross's (1998) model of emotion regulation, which emphasises the dynamic interplay between internal vulnerabilities and external stressors. The findings also resonate with those of McLaughlin et al., (2015), who argue that emotion dysregulation is not simply a static trait, but a developmental process shaped by both biological and environmental influences.

Study 2A's longitudinal design was particularly valuable, as it provided evidence of developmental continuity in emotion dysregulation across early childhood. This stands in contrast to cross-sectional studies such as Bunford et al., (2018), which often conceptualise emotion dysregulation as a fixed trait. **Study 2A** underscored the need for early interventions that target both ADHD symptoms and maladaptive family factors, such as withdrawn/harsh parenting practices, to mitigate long-term emotional difficulties.

RQ3) What moderating role do ADHD symptoms have in the relationship between parenting practices and emotion dysregulation symptoms in children aged 5 and 7, cross-sectionally?

Study 2A also illustrated the moderating role of ADHD symptoms in the relationship between parenting practices and emotion dysregulation. Specifically, children with more severe ADHD symptoms were found to be more vulnerable to emotion dysregulation when exposed to withdrawn parenting practices. Similarly, Gross (1998) argued that children with ADHD are at a heightened risk for emotion dysregulation, particularly when exposed to negative family environments. The current study aligns with these theories, suggesting that negative parenting amplifies the challenges these children face in regulating their emotions. This relationship supports the notion that ADHD, as an intrinsic vulnerability, interacts with external stressors like parenting practices to exacerbate emotion dysregulation.

However, what distinguishes this study from prior research is its developmental focus. Previous studies have frequently combined children from different age groups, which may obscure the nuances in how ADHD symptoms moderate emotion regulation at various stages of development (e.g., Jensen and Rosén, 2004; Paulus et al., 2021). By examining children at ages 5, 7, and 11, this study sheds new light on the developmental trajectory of emotion dysregulation. The results indicate that the moderating effect of ADHD on emotion dysregulation grows stronger with age, especially from 5 to 11 years. This progressive effect aligns with the work of Barrett (2012), who suggested that as children mature, emotion regulation becomes more sophisticated, and children with ADHD become more vulnerable to the impact of negative parenting. This developmental lens is essential, as it highlights that earlier interventions targeting both ADHD and parenting may be more effective in mitigating the long-term effects of emotion dysregulation. Cicchetti & Rogosch (2002) have shown that negative parenting in early childhood sets the stage for persistent emotional difficulties, and the current study builds on this by demonstrating that the

relationship between ADHD and emotion dysregulation is not static, instead it intensifies as children grow.

The novelty of this study lies in its emphasis on the cumulative effect of parenting practices on emotion regulation over time. While earlier studies have acknowledged the impact of parenting on children with ADHD, few have explored how this interaction evolves across developmental stages. The current research highlights that the effects of harsh parenting are not merely immediate but accumulate over time, intensifying as children approach adolescence. This aligns with Beedie et al., (2005), who stressed the importance of addressing both ADHD symptoms and family dynamics simultaneously. The findings suggest that children with ADHD may be at risk for more pronounced emotion dysregulation, if negative parenting practices are not addressed early in their development. The novel contribution of this research lies in its developmental focus, highlighting the cumulative nature of withdrawn parenting and its impact on emotion regulation.

RQ4) What moderating role do ADHD symptoms have in the relationship between parenting practices and peer relationship problems in children aged 5, 7, and 11, longitudinally?

Study 2A further demonstrated that ADHD symptoms moderate the relationship between parenting practices and peer relationship problems, with this effect becoming more pronounced as children grow older. Specifically, children with higher levels of ADHD symptoms exhibited greater difficulties in forming and maintaining peer relationships, when exposed to harsh parenting. This finding aligns with Braet et al., (2014), who highlighted that children with ADHD often struggle with peer relationships, and these difficulties are exacerbated when they experience harsh parenting or negative family dynamics. Children with ADHD tend to have difficulties with impulse control, emotion regulation, and interpreting social cues, which already impair their social functioning. When these children are raised in environments characterised by harsh or inconsistent

parenting, these deficits in social skills are further magnified, leading to greater peer rejection and social isolation. The current study thus reinforces Patterson's (1982) model of coercive family processes, which suggests that negative parenting styles contribute to the development of antisocial or aggressive behaviours in children, further hindering their peer interactions.

By examining children at ages 5, 7, and 11, this study offers insights into how the moderating effect of ADHD on peer relationships intensifies, as children grow older. The results suggest that the relationship between ADHD symptoms and peer problems is evident even at age 5, but it becomes significantly stronger by age 11. This aligns with Bukowski et al., (2018), who noted that social difficulties for children with ADHD tend to worsen with age, particularly as they face increased social demands in school and peer interactions. Moreover, the findings indicate that such negative parenting practices have a cumulative effect, worsening peer relationship problems as children grow older. This is consistent with Beedie et al., (2005), who argued that ADHD symptoms alone are insufficient to explain peer relationship difficulties; rather, it is the combination of ADHD symptoms and adverse family dynamics that drives these difficulties. The current study, by demonstrating how these factors interact and evolve across different ages, contributes new insights into how parenting practices can shape the social trajectories of children with ADHD. In sum, **Study 2A** provides a comprehensive and nuanced understanding of the complex interactions between ADHD symptoms, parenting practices, emotion dysregulation, and peer relationship problems in children. The findings from **RQ2**-**RQ4** offer important contributions to the field of youth psychopathology by highlighting the developmental progression of emotion dysregulation and peer difficulties in children with ADHD.

z-proso Findings

RQ5) What key demographic factors influence the presentation of anger symptoms in children aged 7 and 9?

For **Study 2B**, across both age groups (7 and 9 years), gender emerged as a consistent and significant predictor of anger symptoms, with males exhibiting higher levels of anger, compared to females. This finding is congruent with previous studies that have shown males tend to display more externalising behaviours, such as aggression, impulsivity, and anger, while females often internalise emotions (Barkley, 2014; Shaw et al., 2014). Moreover, gender differences in anger expression may also be linked to neurological and biological factors that differ between males and females. Emotion dysregulation is often more easily identified in males because of their more overt behavioural manifestations (Graziano & Garcia, 2016). This greater visibility of anger symptoms in males might further reinforce the gender gap observed in emotional expression. These findings suggest that males may be more vulnerable to certain forms of emotion dysregulation, including anger, which may contribute to their increased susceptibility to behavioural disorders.

Moreover, at age 7, children from higher SES backgrounds exhibited higher levels of anger symptoms. This is a somewhat unexpected finding, as much of the existing research links lower SES with increased emotional difficulties, including anger, due to factors such as higher levels of stress, fewer emotional resources, and more challenging family environments (Hire et al., 2018). One possible explanation for this is that children from higher SES backgrounds may experience unique psychosocial pressures that contribute to emotion dysregulation (Luthar & Latendresse, 2005). In these families, there may be higher expectations for academic and behavioural success, which could lead to frustration, anxiety, and increased emotional reactivity. Conversely, at age 9, lower SES was associated with significantly higher anger symptoms, which aligns more closely with the existing literature linking economic hardship to emotional and behavioural problems.

Children from lower SES backgrounds often have fewer emotional coping resources, both at home and in school settings, which can exacerbate feelings of frustration and lead to more outward expressions of anger (Hire et al., 2018). This developmental shift in the relationship between SES and anger symptoms, i.e., higher SES predicting anger at age 7, and lower SES predicting anger at age 9, suggests that the influence of SES on emotion regulation may change as children mature. For younger children, the pressures of academic achievement or familial expectations in higher SES households might be more salient, whereas older children might experience the cumulative effects of stress and disadvantage in lower SES households more acutely.

Interestingly, parental migration background did not statistically predict anger symptoms at either age group. This result diverges from some previous studies that have highlighted the potential for migrant children to experience unique challenges related to acculturation, discrimination, and the underdiagnosis of mental health problems, which could affect emotional and behavioural expression (Zysset et al., 2023). However, the absence of a significant relationship between migration background and anger symptoms in this study suggests that migration status alone may not be a direct risk factor for anger during middle childhood, in the Swiss context. It is important to consider, however, that migration background could influence emotional expression indirectly through other factors, such as cultural stigma surrounding mental health or barriers to accessing mental health care (Knaak et al., 2017). Studies have shown that migrant families may face challenges in recognising or seeking help for emotional and behavioural difficulties due to cultural attitudes toward mental health, language barriers, or lack of access to health services (Place et al., 2021). As such, studies could explore the intersection of migration status and mental health through a more complex lens, considering the role of acculturation, language proficiency, and familial support networks.

In summary, **RQ5** provides important insights into the role of gender and SES in predicting anger symptoms in children aged 7 and 9. Gender differences in anger expression were pronounced, with males displaying more anger symptoms than females, which is consistent with existing research on externalising behaviours. The relationship between SES and anger symptoms was more complex, with higher SES predicting more anger at age 7 and lower SES predicting more anger at age 9. Parental migration background, however, did not significantly predict anger symptoms in either age group, suggesting that migration status alone may not be a direct risk factor for anger in this context. These findings point towards the need for a more nuanced understanding of how these factors interact with other psychological, familial, and environmental influences on emotional development.

RQ6) What moderating role do ADHD symptoms have in explaining the associations between parenting practices and anger in children aged 9, cross-sectionally?

RQ6 aimed to investigate whether ADHD symptomatology at age 9 moderated the relationship between parenting practices, both positive (e.g., warmth, support) and negative (e.g., harshness, inconsistency), and anger at age 9. The underlying hypothesis was informed by prior literature suggesting that negative parenting behaviours may exert a stronger influence on anger in children with higher levels of ADHD symptoms, due to these children's heightened susceptibility to anger, compared to those adopting positive parenting practices (Breaux et al., 2018; Bunford et al., 2015). The results revealed that ADHD symptoms at age 9 did not significantly moderate the relationship between either positive or negative parenting and anger at age 9. This contrasts with existing literature suggesting that parenting practices, especially those involving discipline or warmth, can play a significant role in shaping emotional reactivity in children with ADHD (Evans et al., 2014; Graziano & Garcia, 2016). Prior research has indicated that inconsistent discipline or

high conflict can exacerbate emotional difficulties, including anger, in children with ADHD (Barkley, 2006). Conversely emotional warmth and supportive guidance have been proposed to buffer against the heightened emotional volatility that is often seen in children with ADHD (Breaux et al., 2018; Evans et al., 2014). Moreover, ADHD-related emotional reactivity, particularly in terms of anger, may not be fully amenable to changes in the parenting environment, especially in cases of more severe ADHD (Sonuga-Barke, 2003). Children with ADHD often face difficulties in emotional self-regulation, including low frustration tolerance, impulsivity, and difficulty in modulating emotions (Bunford et al., 2015). These core difficulties may make them less responsive to parenting practices that would otherwise help children without ADHD to regulate their emotions.

The lack of a moderation effect found in **Study 2B** further contrasts with the findings of Breaux et al., (2018), who proposed that emotion socialisation efforts by parents could help reduce emotion dysregulation in children with ADHD. Their study suggested that warm, responsive parenting could buffer the emotional volatility frequently associated with ADHD, leading to improved emotion regulation. However, the current study's findings suggest that for children with more severe ADHD symptoms, this emotional volatility may be rooted in the child's neurodevelopmental profile that it cannot be effectively countered by parenting. This view is supported by the work of Evans et al., (2020), who emphasised the primacy of intrinsic factors, such as neurobiological dysregulation, in the development of emotional disorders in children with ADHD. In such cases, environmental factors like parenting may be less influential, particularly if the child's neurodevelopmental trajectory has already set the stage for heightened emotional reactivity. While parenting practices remain important in shaping children's emotional development, their influence on anger propensity appears to be less significant for children with

more severe ADHD symptoms. These findings highlight the need for a deeper understanding of the intrinsic emotion dysregulation in ADHD.

RQ7) What mediating role does anger have in explaining the associations between ADHD symptoms and conflict coping strategies?

In **RQ7**, there was a focus on whether anger at age 9 mediated the longitudinal relationship between ADHD symptoms at age 7 and two forms of conflict coping at age 11: aggressive and competent strategies. Drawing on the dual pathway model of ADHD (Sonuga-Barke, 2003), which highlights both executive dysfunction and emotion dysregulation as central to ADHD-related outcomes, the findings from **Study 2B** provided support for the hypothesis that anger serves as a mediating factor for both maladaptive and adaptive conflict coping strategies. This model not only advances our understanding of how ADHD symptoms impact later social-emotional functioning, but also sheds light on the nuanced role of anger as both a risk and potential protective factor, depending on how it is expressed and regulated.

In relation to aggressive conflict coping, the results revealed that ADHD symptoms at age 7 were significantly associated with higher levels of anger at age 9, which in turn predicted greater reliance on aggressive coping strategies at age 11. This indirect pathway suggests that children exhibiting elevated ADHD symptoms may struggle with emotion regulation, particularly in managing frustration and anger, leading to maladaptive behaviours in conflict situations. These findings align with previous research emphasising the role of negative emotionality and poor self-regulatory capacities in mediating externalising outcomes in children with ADHD (Bunford et al., 2015; Seymour et al., 2014). Although ADHD symptoms had a direct effect on aggressive coping, the stronger contribution came through the pathway involving anger, reinforcing the notion that

emotion dysregulation may serve as a more proximal mechanism underlying the link between early ADHD symptoms and later aggression.

Interestingly, the findings also demonstrated that anger partially mediated the relationship between ADHD symptoms and competent conflict coping strategies. This suggests that while anger is often associated with externalising problems, it may also play a constructive role when effectively regulated. In this model, children with higher ADHD symptoms experienced greater anger, but this emotional arousal was linked to more competent coping when appropriately managed. Such a result supports evidence that not all anger is inherently maladaptive; rather, it can motivate assertive, solution-focused behaviours, when accompanied by sufficient emotion regulation skills (Eisenberg et al., 2010). The positive associations between anger and competent coping challenge simplistic conceptualisations of anger as solely detrimental and underscore the dual nature of this emotion in developmental psychopathology.

Together, these findings highlight anger as a developmentally pivotal mechanism linking ADHD symptoms with divergent conflict coping outcomes. On one hand, when dysregulated, anger contributes to reactive, aggressive behaviours that undermine peer relationships and social competence. On the other hand, when managed effectively, anger appears to motivate more assertive, problem-solving strategies, promoting healthier interpersonal outcomes. This dual role of anger aligns with theories of emotion socialisation and the functionalist view of emotions, which suggest that emotions serve adaptive purposes when appropriately regulated (Campos et al., 2004). In sum, the findings from **RQ7** affirm that anger plays a key mediating role in the developmental pathway from early ADHD symptoms to later conflict coping behaviours. Anger serves as both a risk factor for aggression and a potential resource for competent coping, depending on the child's regulatory capacity. These results extend the dual pathway model of ADHD by illustrating how

emotion dysregulation, in this case, anger, acts as a crucial link between neurodevelopmental vulnerability and real-world social functioning.

Study 3 Findings

RQ8) How do children develop difficulties in extrinsic emotion regulation (i.e., struggles in influencing the emotional states of others)?

Extrinsic emotion regulation, or the ability to manage and influence the emotional states of others, is a skill that develops gradually, rooted in a child's relational experiences, and is especially prominent during middle childhood (Uhl et al., 2019). In this stage, children engage in more complex social interactions, which require advanced regulatory strategies to navigate peer relationships, group dynamics, and social conflicts (Carr, 2017). Difficulties in extrinsic regulation, often referred to as extrinsic dysregulation, arise when children struggle to appropriately modulate the emotions of others. These challenges are primarily shaped by disruptions in relational and emotional learning during earlier developmental stages and are exacerbated by the emerging cognitive demands of middle childhood. The foundation for regulating others' emotions is established through early relational experiences with caregivers, in which children first learn emotional responses through co-regulation. By observing caregivers' responses to emotional situations, such as soothing or validating emotions, children internalise these strategies to later use in their social world (Burkitt, 2017). However, extrinsic dysregulation often arises when there are disruptions in these early relational exchanges. Inconsistent caregiving, neglectful environments, or emotionally misattuned relationships prevent children from acquiring a robust set of emotion regulatory strategies, which are crucial for managing others' emotions (Zeman et al., 2006). For instance, when a parent is frequently unresponsive or emotionally unpredictable, the child may be unable to develop the necessary emotions to regulate others'

distress effectively. This sets the stage for difficulties in middle childhood, when children are expected to manage more nuanced emotional interactions with peers.

In middle childhood, cognitive and social skills such as perspective-taking, empathy, and emotional intelligence become crucial for regulating others' emotions (Zaki & Williams, 2013). Children who struggle with these skills may misinterpret emotional cues, leading to inappropriate responses that exacerbate social tension. For instance, a child unable to recognise a peer's distress may offer the wrong type of support, which may in turn, lead to social exclusion or conflict (Carr, 2017). Children who lack effective strategies may resort to maladaptive behaviours, like withdrawal or aggression, which disrupt social bonds and are reinforced by peer reactions, perpetuating a cycle of dysregulation. The development of extrinsic regulation is therefore a dynamic process shaped by the child's ability to navigate both their internal emotional world and their external social environment. Burkitt (2017) highlights that emotion regulation is inherently relational, involving continuous interaction with others. Thus, when children are deprived of sufficient emotional scaffolding or relational stability, they face considerable challenges in regulating the emotions of others. In such cases, extrinsic dysregulation becomes a reflection of the child's difficulty in attuning to, understanding, and responding to the emotional needs of others, which in turn impedes their social and emotional competence.

RQ9) In what ways do parents contribute to their children's difficulties in regulating the emotional states of others (extrinsic dysregulation)?

In **Study 3**, **Figure 8.1** illustrates how extrinsic dysregulation manifests in children with ADHD (see Chapter 8; subsection 8.3). The path diagram shows that developmental antecedents, including parenting practices and SES, affect the child's capacity to regulate not only their own emotions (intrapersonal regulation), but also the emotions of others (extrinsic dysregulation). In

children with ADHD, hyperactivity acts as an input factor that disrupts their ability to regulate emotions, both internally and externally. This disruption impacts the child-parent dynamics (input person), where difficulties in regulating the emotions of others, particularly the parents, can lead to challenges in social relationships. As these emotional difficulties escalate, the parent's ability to maintain emotional stability is also affected. This creates a bidirectional cycle in which both the child's and the parent's emotion regulation are compromised, influencing the child's social interactions and emotional development.

In **Table 8.1** (see Chapter 8; subsection 8.3), child-parent dynamics are explored in extrinsic dysregulation, focusing on how failed co-regulation occurs when the child's dysregulated emotional responses exceed the parent's capacity to provide stabilising emotional support. In such cases, parental responses become increasingly reactive, diminishing their ability to offer the necessary support for emotion regulation. This feedback loop often leads to compromised co-regulation, reinforcing cycles of dysregulation and further hindering the child's ability to manage the emotional states of others. Moreover, the bidirectional nature of this relationship has been reported in literature, which highlights how emotional reactivity in children and their parents can mutually exacerbate difficulties in extrinsic emotion regulation (Sonuga-Barke & Halperin, 2010). As the child's dysregulated behaviour affects both the child's emotional growth and the parent's response, this contributes to failed co-regulation, which can result in social difficulties for the child (Hoza et al., 2005; Zaki & Williams, 2013). Over time, these challenges may hinder the child's ability to form stable social connections, further reinforcing cycles of emotion dysregulation and isolation.

This bidirectionality is further complicated when parental emotional modelling is taken into account. As noted by Collins and Madsen (2019), children are highly sensitive to how their parents manage emotions within the household. When parents model adaptive strategies such as

reflective listening and emotional containment, they implicitly teach their children how to regulate others' emotions. Conversely, when parents themselves display dysregulated behaviours, such as emotional withdrawal or frequent outbursts, they may normalise these maladaptive patterns for their children (Dermott & Pomati, 2016). These dysfunctional modelling processes can have profound effects on children's extrinsic emotion regulation, reinforcing maladaptive emotional responses in social settings. Moreover, the individual child characteristics also influence the nature of these bidirectional dynamics. Children with temperamental tendencies towards impulsivity or emotional intensity, for example, may prompt more frequent parental intervention, which can contribute to the reinforcement of external dependency on the parent (Rapee et al., 2019). As reflected in **Table 8.1**, this can lead to failed parent co-regulation, where the child's emotional responses exceed the parent's ability to provide the necessary emotional support, further hindering the development of extrinsic emotion regulation. In sum, the development of extrinsic dysregulation in children is a complex, relational process shaped by both parenting practices and child characteristics, with bidirectional dynamics. The findings underscore the importance of fostering independent emotion regulation in children, providing them with opportunities to practice managing the emotional states of others while ensuring that parental support is both responsive and appropriately limited. Next, the strengths and limitations of this thesis will be critically examined, with attention to the broader conceptual contributions of the research, as well as methodological considerations.

9.3 Strengths of the Thesis

This thesis offers a range of contributions that strengthen the conceptual and empirical understanding of emotion dysregulation, most notably through the introduction of the extrinsic

dysregulation framework. This framework challenges prevailing models of emotion dysregulation that centre almost exclusively on internal, individualised mechanisms, such as cognitive control or emotional reactivity (Gross, 2014). Instead, it draws attention to developmental antecedents, such as parenting practices and SES, as additional factors that may shape emotional development. This shift reflects a broader turn in developmental psychology towards more relational and systemic perspectives.

This thesis is methodologically ambitious, using cross-sectional and longitudinal data from two cohorts, the MCS and z-proso, allowing for a nuanced comparison of how national contexts, social policies, and parenting norms affect emotion regulation. Studies 2A and 2B utilise population-based data to explore ADHD symptoms alongside emotion regulation, parenting, and peer relationships, reflecting the dimensional understanding of ADHD (Belsky et al., 2007; Thapar et al., 2013). This enriches the extrinsic dysregulation framework by showing how ADHD traits interact with developmental antecedents, challenging traditional views of dysregulation as purely neurological and emphasising social and contextual influences on emotional development.

A key strength of this thesis lies in its introduction and exploration of the concept of extrinsic dysregulation, a novel framework for understanding how children manage the emotional states of others. By expanding the scope of emotion regulation beyond individual self-regulation, this work offers a more nuanced perspective on emotional development, particularly in social contexts. It challenges traditional models that focus primarily on intrapersonal regulation, providing fresh insights into how relational dynamics and external influences shape children's emotional competencies. This approach not only contributes to theoretical advancements in the field, but also has practical implications for interventions that address social and emotional difficulties in children.

Collectively, the strengths of this thesis lie not only in its empirical breadth and methodological rigour, but in its conceptual ambition. By advancing the extrinsic dysregulation framework, the thesis reframes emotion regulation as a product of intersecting individual, relational, and structural influences, challenging dominant paradigms that locate dysregulation solely within the child. Its use of diverse, large-scale cohort data enables a more inclusive understanding of emotional development, while its cross-national comparative approach highlights the contextual variability of these processes. Moreover, by situating ADHD within population-level developmental pathways, the research contributes to an evolving discourse that questions medicalised and deficit-based models of neurodivergence. Taken together, these strengths support a more contextually sensitive approach to emotion dysregulation that may inform future research and practice.

9.4 Limitations of the Thesis

While this thesis contributes meaningfully to emotion regulation research by introducing the extrinsic dysregulation framework and drawing attention to socio-cultural influences, several limitations warrant critical reflection. A limitation of Study 1 is the scoping review methodology. While useful for mapping the field, the broad inclusion criteria risked synthesising heterogeneous studies without adequately addressing quality, theoretical frameworks, or measurement tools (Liberati et al., 2009). Additionally, the review insufficiently interrogates Western, individualist assumptions dominating the literature, risking the reproduction of normative biases. There is therefore a need to critically engage with non-Western and psychological perspectives to ensure a more reflexive theoretical foundation.

Study 2 faces limitations in representation, notably the absence of data on LGBTQ+ children and not focusing on non-traditional family structures such as single-parent, blended, or same-gender households. This narrows applicability and reinforces normative family models, overlooking unique challenges, such as stigma and marginalisation (Patterson et al., 1982, 1998; Knaak et al., 2017). This reflects a broader bias in developmental research privileging heteronormative, middle-class Western families and raises ethical concerns about whose emotional lives are studied. Furthermore, the exclusive use of secondary quantitative data limits interpretive richness. Standardised instruments, while statistically powerful, often fail to capture the complexity of ADHD symptoms and emotional experiences, across socio-economic contexts, as suggested by Rudin (2020). Parent and child-reported data are prone to bias; parents may underreport difficulties due to social desirability, and children with ADHD may struggle with self-report accuracy (Hoza, 2007). Therefore, embedding a qualitative standpoint in future studies will be critical to address lived experiences, agency, and meaning making.

A key limitation of Study 3 is that the extrinsic dysregulation framework remains untested empirically. As it has not undergone prototyping or trial phases, it leaves questions about its predictive validity and comparative advantage unanswered. Additionally, without empirical validation, it is unclear how the framework compares to existing models of emotion dysregulation in terms of its ability to account for real-world outcomes. Future research should focus on testing the framework in diverse populations and contexts to establish its robustness and practical utility.

Taken together, these limitations reflect key tensions in the field, namely between scale and depth, between representation and generalisability, and between conceptual innovation and empirical testing. While the thesis makes a strong case for expanding the scope of emotion regulation research, it also demonstrates the challenges of doing so within existing data constraints

and disciplinary norms. The next subsection will explore the implications of this thesis, both theoretically and practically for educators and clinicians.

9.5 Implications

Theoretical Implications

Theoretical frameworks provide valuable insights into the mechanisms of emotion dysregulation in children with ADHD, particularly in relation to parenting practices. Gross's Process Model of Emotion Regulation (1998) outlines key stages where regulation may falter, including situation selection, modification, attentional deployment, cognitive change, and response modulation. While the model effectively categorises these regulatory processes, it does not fully account for the neurobiological deficits central to ADHD, such as impairments in attention and impulse control (Gross, 2002; Kress & Elias, 2006). Recent research underscores the validity of self-report measures over implicit assessments (Corneille & Gawronski, 2024), suggesting that integrating parental input and neurodevelopmental insights could refine intervention strategies. Consequently, while Gross's model remains a robust foundation, it would benefit from expansion through empirical evidence and a broader developmental framework tailored to ADHD.

According to Erikson's Psychosocial Development Theory (1963), these emotional difficulties can undermine a child's developing sense of self, particularly during the critical 'industry vs. inferiority' stage, where children begin to form their identity through academic and social competencies. Contemporary research in online parenting forums further underscores this notion, revealing widespread parental concerns about the negative impact of academic struggles and peer relationship issues on children's self-esteem and social competence (Feldman, 2021; McSorley et al., 2022). These discussions align with Erikson's view, suggesting that unresolved

emotional challenges not only hinder children's academic achievement but also compromise their social interactions and sense of self-worth.

Thompson's Model of Emotion Regulation (1994) underscores the critical role of early caregiving in the development of emotion regulation skills, particularly for children with ADHD, who benefit from responsive and consistent parenting (Feldman, 2021). However, this model may not fully capture the broader environmental influences, such as peer interactions and educational contexts, that significantly impact children with ADHD (Morris et al., 2007). Insights from online parenting forums highlight how parenting practices can vary considerably based on socio-economic status and family dynamics, suggesting that external factors also shape emotion regulation (Pedersen, 2016; Wang, 2003). Consequently, while Thompson's focus on caregiving is vital, it is important to expand this framework to incorporate these wider contextual influences that contribute to emotion regulation challenges in children with ADHD.

Bowlby's Attachment Theory (1979) offers a foundational framework for understanding how early secure attachment fosters emotional resilience, a critical factor for children with ADHD who may struggle with emotional instability in the presence of insecure attachments (Cicchetti et al., 1995; Schore, 2001). However, Bowlby's emphasis on early attachment overlooks the influence of ongoing caregiving and relational dynamics as children mature. Neurobiological research has expanded our understanding of attachment by highlighting its impact on brain regions such as the amygdala and prefrontal cortex, suggesting that Bowlby's model should be updated to integrate these findings, particularly in the context of ADHD's neurodevelopmental trajectory (Schore, 2001). Thus, while Attachment Theory remains a cornerstone of developmental psychology, it should be broadened to account for the continuous influence of caregiving and the neurobiological processes at play in ADHD.

These theoretical frameworks collectively advance the understanding of emotion dysregulation in children with ADHD and the critical role of parenting. Gross's (1998) model provides a detailed process-based perspective, but requires adaptation to account for neurodevelopmental factors specific to ADHD. Erikson's (1963) theory highlights the profound social and emotional impacts of development, yet it would benefit from incorporating ADHD-related cognitive challenges. Thompson's (1994) model underscores the importance of responsive caregiving, but needs to integrate a broader range of external influences on the child's emotional development. Bowlby's (1979) Attachment Theory is foundational for understanding early attachment, but it should expand to encompass the ongoing nature of caregiving in the context of ADHD. By combining these perspectives with current research, including parental self-reports and insights from online sources, a more holistic approach can be developed to support children's emotion regulation.

Practical Implications

Implications for Education

The findings of this thesis suggest that some understanding of children's emotion regulation and dysregulation could be of value to educators. Considering both individual emotional responses and the broader family and socio-environmental context may help teachers better support children's wellbeing. Evidence indicates that strong school-parent partnerships can contribute to more consistent emotional environments for children (Mendelson et al., 2018), though many existing interventions primarily focus on the child in isolation (El Zaatari & Maalouf, 2022). Current teacher training programmes have increasingly emphasised mental health literacy, equipping educators to identify indicators of emotional distress, behavioural difficulties, and potential mental health disorders (Department for Education, 2025). Extending this focus,

programmes may benefit from incorporating content on children's emotion regulation and dysregulation, alongside strategies for effective collaboration with parents. For instance, training could address supporting co-regulatory interactions, recognising the influence of family and socio-environmental factors on behaviour, and facilitating constructive school-home communication. Developing educators' competence in these areas may contribute to a more contextually informed and coordinated approach to promoting children's emotional wellbeing.

Implications for Psychologists and Clinicians

Psychologists and clinicians may benefit from paying closer attention to the interpersonal and relational aspects of children's emotional experiences, including the challenges some children face when responding to or managing the emotions of others. Difficulties with affective attunement, emotional boundary-setting, and co-regulation can influence children's wellbeing, and attending to these processes within clinical work may help build a more comprehensive understanding of their emotional needs. Existing developmental theories highlight the usefulness of considering systemic and dyadic dynamics in such cases (Gross, 2002; Thompson, 1990), and approaches that incorporate elements of family support or co-regulatory strategies may be valuable, particularly in contexts of heightened stress. For children with ADHD, it may also be valuable to integrate therapeutic components that target difficulties in perceiving and modulating the emotional responses of others (Fenning et al., 2018). Incorporating these relational dimensions may help alleviate the emotional demands placed on children as they respond to others' dysregulated affect, thereby enhancing the potential effectiveness of interventions. Conversely, insufficient consideration of children's extrinsic emotion regulation difficulties may limit the capacity of interventions to address the relational factors that contribute to their emotional

challenges. The next section will discuss promising avenues for future research on ADHD symptoms, emotion dysregulation, and parenting practices.

9.6 Future Directions

Study 1

In the context of **Study 1**, future studies should expand the conceptualisation of emotion dysregulation to include emotional valence - the degree to which an emotion is positive or negative. While numerous studies have primarily examined emotion dysregulation in the context of negative emotions, such as fear or sadness, there is a notable gap in understanding how dysregulation might also occur in the regulation of positive emotions (Vogel et al., 2023). This oversight limits researchers' understanding of how children or individuals might struggle to regulate experiences of joy, excitement, or other positive feelings, which could also lead to maladaptive outcomes when left unchecked.

Moreover, emotional granularity, the ability to make nuanced distinctions between different emotions, should also be considered in future conceptualisations of emotion dysregulation. Research by Wilson-Mendenhall and Dunne (2021) has shown that individuals with higher emotional granularity are better able to differentiate between emotions including anger, sadness, or loneliness, leading to more adaptive emotion regulation. In contrast, those with lower emotional granularity may struggle to navigate these emotions effectively, contributing to greater emotion dysregulation. Additionally, emotion controllability beliefs are an important consideration, as demonstrated by Somerville et al., (2023), who found that individuals who perceive emotions as controllable are more likely to engage in regulatory efforts. For those who believe their emotions are beyond their control, there is often a lack of motivation or effort to

regulate emotions, which can further exacerbate dysregulation. Combining these perspectives, emotional granularity and emotion controllability beliefs, could provide valuable insights into the multifaceted nature of emotion dysregulation and should be explored further in future research.

Study 2

Polyregulation, the ability to manage multiple emotions simultaneously, offers a promising framework for understanding emotion dysregulation, particularly in children with ADHD. Ford et al., (2019) suggests that polyregulation helps balance conflicting emotions, but research on its application in childhood remains sparse. Ladis et al., (2023) explored polyregulation in daily life, finding that individuals are more likely to use multiple emotion regulation strategies when experiencing intense negative emotions and when motivated to change their emotional state. While their study provides an important foundation, further research is needed to investigate how polyregulation can be effectively integrated into interventions for children with ADHD, which could improve the management of emotional outbursts and support the development of adaptive coping strategies.

The digital era has significantly reshaped parenting during middle childhood. As children become increasingly immersed in digital media, understanding how online environments and digital tools influence children's emotion regulation is essential. Jäggi et al., (2025) underscore the potential of digital parenting interventions, particularly in low and middle-income countries, where access to resources may be more limited. Online forums provide a platform for parents to share emotional challenges and coping strategies, yet they also expose a significant gap in knowledge regarding the impact of digital media on emotional wellbeing (McSorley et al., 2022). Future research should focus on exploring how parents navigate the complexities of digital engagement, examining the effects of screen time and content, and investigating how technology can be

leveraged to enhance positive parenting practices and foster healthy emotional development in children.

Moreover, the integration of AI in supporting children with ADHD represents an emerging area of significant potential. AI technologies in educational and therapeutic contexts can provide personalised, real-time interventions to enhance emotion regulation. Murray et al., (2025) demonstrate AI's capacity to monitor emotional and behavioural patterns, as well as improving ADHD symptom assessments, by offering context-sensitive data, thereby addressing the limitations of current diagnostic tools. However, despite its promise, the deployment of AI raises ethical concerns, particularly regarding data privacy, as well as questions about its practical efficacy in real-world settings. Future research should focus on exploring how AI can effectively support emotion regulation while helping children develop crucial skills in attention and impulse control.

Study 3

While the framework presented in Table 8.1 (see Chapter 8; subsection 8.3) prioritises child-parent dyads due to their consistent and foundational role in shaping extrinsic dysregulation, peer relationships introduce additional layers of complexity that merit focused scholarly attention. Failures in dyadic emotion regulation within peer contexts arise when a child's dysregulated emotional responses overwhelm a peer's capacity to respond adaptively, thereby disrupting the social exchange and frequently resulting in peer withdrawal, avoidance, or rejection (Kim & Cicchetti, 2010). Given the multifaceted and reciprocal nature of these regulatory processes, it is necessary to elucidate how children's struggles to regulate others' emotions manifest in peer contexts and how these interactions interface with broader relational and developmental systems.

Social network analysis offers a valuable methodological approach for examining how children regulate not only their own emotions, but also the emotions of others within peer networks. This approach is particularly effective in identifying which children serve as emotional anchors, effectively managing both their own and their peers' emotional states (Zhang et al., 2024). Children who consistently demonstrate adaptive strategies in managing peers' emotions may occupy central roles within networks, modelling effective interpersonal regulation and providing emotional support (Veenstra et al., 2024). In contrast, children who struggle to regulate others' emotions may find themselves on the periphery, lacking access to supportive relationships or positive regulatory examples. Zhang et al., (2024) further highlight the interconnectedness of peer attachment and family functioning within these networks, suggesting that challenges in one domain can cascade to the other, intensifying difficulties in regulating others' emotions. Thus, understanding children's interactions within peer networks can uncover critical external influences on extrinsic dysregulation, extending beyond parental and teacher roles to offer a richer socio-ecological perspective on these complex emotional processes. In summary, future research should explore the influence of the digital era on parenting, the potential of polyregulation for emotion dysregulation, and the application of AI in ADHD management. Given the rising prevalence of ADHD and the growing role of digital technologies, addressing these intersections is essential for advancing emotional and behavioural health in children. The following section will reflect on the doctoral journey and insights gained throughout this research.

9.7 Reflective Inquiry

Reflective inquiry is essential in educational and psychological research, especially when exploring complex constructs like emotion dysregulation. In this thesis, it has been a vital tool for

challenging assumptions and navigating the evolving nature of the study. By interrogating how knowledge is produced, assessed, and applied, reflective inquiry ensures a deeper, ongoing critical examination of dynamic concepts such as emotion dysregulation in children. Maxwell (2013) emphasises that the process of reflection should allow for deep self-examination of the researcher's positionality, the assumptions underlying their work, and the implications of their findings for both theory and practice. Here, I critically reflect on the conceptualisation of emotion dysregulation throughout this research journey, discussing the shifts in understanding that occurred, the tensions encountered, and the implications of these changes for the broader educational and psychological landscape.

The study began with a focus on emotion dysregulation, especially in children with ADHD. While ADHD remains a central concern, it became apparent that emotion dysregulation is a much broader issue, affecting children across various developmental contexts. Initially, the literature framed emotion dysregulation primarily as a disorder or deficit, often connected with clinical diagnoses (Barkley, 2015). However, this pathologising tendency, while prevalent in much of the existing research, was increasingly challenged throughout the thesis. The investigation into emotion dysregulation highlighted the importance of reframing it as a dynamic, developmental process that cannot be solely understood in medicalised terms (Sameroff, 2010). A key shift in this research involved expanding the understanding of emotion dysregulation beyond individual deficits to recognise the substantial role of developmental antecedents, particularly parenting, peer dynamics, and socio-cultural contexts (Eisenberg & Spinrad, 2004; Morris et al., 2007). Importantly, this shift challenges the prevailing medicalised views that often treat emotion dysregulation as an isolated issue within the child, instead proposing that emotion regulation is influenced by relational and environmental factors.

Throughout the research process, there were significant tensions between empirical evidence and theoretical models. The research consistently demonstrated the importance of developmental antecedents, such as parenting practices, in shaping children's emotion dysregulation. However, many established theoretical frameworks, particularly in the context of ADHD, focused predominantly on internal emotional processes, often ignoring or underestimating the role of relational dynamics (Sameroff, 2010). This tension revealed the limitations of traditional psychological models and pointed to the need for more nuanced, interdisciplinary approaches that consider the interplay between internal and external influences on emotion regulation.

Reflecting critically on the methodological approach also underscored several challenges in measuring emotion dysregulation. The decision to use secondary data analysis in Study 2 enabled an examination of the impact of parenting and peer relationships across cross-national contexts. However, it also exposed the limitations of large-scale datasets in capturing the nuanced, lived experiences of children. As Morris et al., (2007) noted, quantitative methods often fail to reflect the complexities of relational and emotional dynamics, raising important questions about how educational and psychological research can better account for these subtleties. This tension between the quantitative approach and the desire for a richer, more qualitative understanding of emotion dysregulation reflects broader challenges in balancing theory and practice within educational research.

In sum, reflective inquiry has been fundamental in challenging the initial assumptions of this research and refining its theoretical and methodological foundations. It has allowed for the development of a more nuanced understanding of emotion dysregulation that moves away from pathologising tendencies and embraces a broader view of developmental influences. Reflective inquiry not only shaped the trajectory of this thesis, but also reinforced the need for ongoing critical

engagement with the complexities of emotion regulation, ensuring that future research continues to explore these issues in a meaningful and impactful way. The next subsection will present the concluding thoughts of the thesis, synthesising the key insights from the discussion chapter and reflecting on their broader implications, while drawing the thesis to a close by consolidating its contributions to the field.

9.8 Concluding Thoughts

This thesis has offered a comprehensive exploration of emotion dysregulation in middle childhood, with a focus on its intersection with ADHD, parenting, and socio-economic contexts. However, the strength of this work lies not merely in its findings, but in its ability to provoke deeper reflection on often overlooked questions in developmental science. The journey undertaken throughout this thesis has highlighted the importance of questioning who and what are included in developmental narratives, particularly when these frameworks have historically centred on narrow, individualised perspectives. By examining emotion dysregulation as a dynamic and context-dependent condition, this thesis underscores the need for developmental science to account for the complexity of real-world influences, such as family dynamics, socio-economic factors, and broader societal inequalities.

A critical takeaway from the discussion chapter is the shift in understanding emotion dysregulation as not simply an individual deficit, but as a phenomenon shaped by developmental antecedents. The exploration of co-regulation, parent-child relationships, and peer interactions has revealed the nuanced ways in which emotional development cannot be separated from the social and relational environment. In this sense, the research pushes the boundaries of traditional psychological models that have long prioritised internal, individual factors, urging a move towards

a relational framework. This thesis invites researchers to reconsider what constitutes ‘regulation’ in a world marked by profound inequalities. It pushes us to question the assumptions embedded within existing models and to think more expansively about how emotional development is influenced by both individual and contextual factors. As research moves forward, the development of emotion dysregulation cannot be disconnected from the larger socio-cultural forces that shape children's lives.

As the renowned psychologist Urie Bronfenbrenner (1979) once said:

“Human development is shaped by the interaction of individual characteristics and the environment, both physical and social.”

This assertion underscores the reality that emotional development is a complex and relational process, shaped by a range of developmental antecedents. The challenge lies not only in understanding these intricate dynamics, but in translating this understanding into intervention strategies that are both comprehensive and flexible, capable of addressing the diverse needs of children. This thesis, therefore, advocates for an integrated framework that recognises the interaction between internal and external factors in emotional development and offers the potential for more nuanced approaches to emotion dysregulation, with the capacity to enhance developmental outcomes in a meaningful and lasting manner, thereby contributing to the cultivation of emotionally resilient future generations.

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Appendices

Appendix A: Ethical Approval for PhD Project

School of Education, Durham University

Ethical Approval: EDU-2023-09-21T12:44:50-fcpk48

E **Ethics <no-reply@sharepointonline.com>**
22/09/2023 15:22

To: ANTONY, EVELYN M.J.

> You don't often get email from no-reply@sharepointonline.com. Learn why this is important

Please do not reply to this email.

Dear Evelyn,

Your supervisor has approved your ethical review form for the following project:

Title: 'Reconceptualising Emotional Dysregulation': A Multidimensional Approach for Youth Psychopathology

;
Supervisor: BECKMANN, NADIN;
Expected Start Date: 02 October 2023;
Application Reference: EDU-2023-09-21T12:44:50-fcpk48.

Based on your responses your project has been categorised as (ethically) low risk and no further review is required before you start work.

Please be aware that if you make any significant changes to your project which mean that ethical approval may be required, you should complete and submit a revised ethical review form.

Ethical Approval: EDU-2024-05-10T12_49_41-fcpk48

Please do not reply to this email.

Dear Evelyn,

The following project has received ethical approval:

Project Title: *'Reconceptualising Emotional Dysregulation': A Multidimensional Approach for Youth Psychopathology*

;
Start Date: *02 October 2023*;
End Date: *30 September 2025;*
Reference: *EDU-2024-05-10T12_49_41-fcpk48*
Date of ethical approval: *07 June 2024*.

Please be aware that if you make any significant changes to the design, duration or delivery of your project, you should contact your department ethics representative for advice, as further consideration and approval may then be required.

If you have any queries regarding this approval or need anything further, please contact ed.ethics@durham.ac.uk

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If you have any queries relating to the ethical review process, please contact your supervisor (where applicable) or departmental ethics representative in the first instance. If you have any queries relating to the online system, please contact research.policy@durham.ac.uk.

Appendix B: Ethical Approval for Study 2A (MCS)

UK Data Service: Agreement to a Special Condition of access

H help@ukdataservice.ac.uk

To: ANTONY, EVELYN M.J.

Sun 25/02/2024 22:23

Flagged

> You don't often get email from help@ukdataservice.ac.uk. Learn why this is important

[EXTERNAL EMAIL]

Dear Evelyn Antony,

This is an automated email confirming you have agreed to Additional conditions of use on 25/02/2024 22:23:24 in order to use "*Millennium Cohort Study: Age 7, Sweep 4, 2008*" for Project 257618.

The special conditions of the agreement are as follows:

> *I agree not to use nor attempt to use the Data Collections to identify the individuals from which the study sample was selected, nor to claim to have done so; and*
>
> *I agree not to link between the research identifiers supplied by the UK Data Service [MCSID] and any other identifiers previously issued.*

UK Data Service: Agreement to a Special Condition of access

H

help@ukdataservice.ac.uk

To: ANTONY, EVELYN M.J.

Sun 25/02/2024 22:42

You don't often get email from help@ukdataservice.ac.uk. Learn why this is important

[EXTERNAL EMAIL]

Dear Evelyn Antony,

This is an automated email confirming you have agreed to Additional conditions of use on 25/02/2024 22:42:32 in order to use "*Millennium Cohort Study, Sweeps 1-6, 2001-2015: Banded Distances of Home Moves between Sweeps*" for Project 257618.

The special conditions of the agreement are as follows:

> *I agree not to use nor attempt to use the Data Collections to identify the individuals from which the study sample was selected, nor to claim to have done so; and*
>
> *I agree not to link between the research identifiers supplied by the UK Data Service [MCSID] and any other identifiers previously issued.*

UK Data Service: Agreement to a Special Condition of access

H

help@ukdataservice.ac.uk

To: ANTONY, EVELYN M.J.

Sun 25/02/2024 22:42

> You don't often get email from help@ukdataservice.ac.uk. Learn why this is important

[EXTERNAL EMAIL]

Dear Evelyn Antony,

This is an automated email confirming you have agreed to Additional conditions of use apply: Confidentiality on 25/02/2024 22:42:56 in order to use "*Millennium Cohort Study, Sweeps 1-7, 2001-2019: Self-Reported Health, Behaviour and Fertility: Secure Access*" for Project 257618.

The special conditions of the agreement are as follows:

> *I agree not to use nor attempt to use the Data Collections to identify the individuals from which the study sample was selected, nor to claim to have done so and;*
> *I agree not to link between the research identifiers supplied by the UK Data Service [MCSID] and any other identifiers previously issued.*

UK Data Service: Agreement to a Special Condition of access

H

help@ukdataservice.ac.uk

To: ANTONY, EVELYN M.J.

Sun 25/02/2024 22:43

> You don't often get email from help@ukdataservice.ac.uk. Learn why this is important

[EXTERNAL EMAIL]

Dear Evelyn Antony,

This is an automated email confirming you have agreed to Additional Condition on 25/02/2024 22:43:30 in order to use "*Millennium Cohort Study: Linkage with the Point of Interest Data*" for Project 257618.

The special conditions of the agreement are as follows:

> *I have read, understood and will comply with the following additional condition of use:*
>
> *I agree not to use nor attempt to use the Data Collections to identify the individuals from which the study sample was selected, nor to claim to have done so.*
>
> *I agree not to link between the research identifiers supplied by the UK Data Service [MCSID] and any other identifiers previously issued*

UK Data Service: Agreement to a Special Condition of access

H

help@ukdataservice.ac.uk

To: ANTONY, EVELYN M.J.

Sun 25/02/2024 22:46

[EXTERNAL EMAIL]

Dear Evelyn Antony,

This is an automated email confirming you have agreed to Additional conditions of use on 25/02/2024 22:46:11 in order to use "*Millennium Cohort Study: Age 5, Sweep 3, 2006*" for Project 257618.

The special conditions of the agreement are as follows:

> *I agree not to use nor attempt to use the Data Collections to identify the individuals from which the study sample was selected, nor to claim to have done so; and*
>
> *I agree not to link between the research identifiers supplied by the UK Data Service [MCSID] and any other identifiers previously issued.*

UK Data Service: Agreement to a Special Condition of access

H

help@ukdataservice.ac.uk

To: ANTONY, EVELYN M.J.

Sun 25/02/2024 22:46

You don't often get email from help@ukdataservice.ac.uk. Learn why this is important

[EXTERNAL EMAIL]

Dear Evelyn Antony,

This is an automated email confirming you have agreed to Additional conditions of use on 25/02/2024 22:46:25 in order to use "*Millennium Cohort Study: Age 11, Sweep 5, 2012*" for Project 257618.

The special conditions of the agreement are as follows:

> *I agree not to use nor attempt to use the Data Collections to identify the individuals from which the study sample was selected, nor to claim to have done so; and*
>
> *I agree not to link between the research identifiers supplied by the UK Data Service [MCSID] and any other identifiers previously issued.*

UK Data Service: Agreement to a Special Condition of access

H

help@ukdataservice.ac.uk

To: ANTONY, EVELYN M.J.

Sun 25/02/2024 22:47

You don't often get email from help@ukdataservice.ac.uk. Learn why this is important

[EXTERNAL EMAIL]

Dear Evelyn Antony,

This is an automated email confirming you have agreed to Additional conditions of use on 25/02/2024 22:46:57 in order to use "*Millennium Cohort Study: Sweeps 1-7, 2001-2018: Longitudinal Family File*" for Project 257618.

The special conditions of the agreement are as follows:

> *I agree not to use nor attempt to use the Data Collections to identify the individuals from which the study sample was selected, nor to claim to have done so; and*
>
> *I agree not to link between the research identifiers supplied by the UK Data Service [MCSID] and any other identifiers previously issued.*

Appendix C: Ethical Approval for Study 2B (z-proso)

University of Zurich[UZH]

Legal Services and Data protection
Version July 2023

Declaration of confidentiality

Legal basis / data protection

The Act on Information and Data Protection (IDG) requires the University of Zurich (UZH) to take appropriate organisational and technical measures to protect personal data against accidental, unauthorised or unlawful access, alteration or disclosure and against loss or destruction. In order to ensure this, the University of Zurich must bind commissioned third parties to keep said information confidential. This declaration of confidentiality serves this purpose.

Target group

This declaration of confidentiality must be signed by all persons who, in the course of their work or collaboration with the UZH, have access to UZH information that must be kept confidential due to data protection obligations. Employees of the UZH do not have to sign this confidentiality declaration. The information they receive is already protected by official secrecy.

Confidentiality obligations

1. The signatory pledges to maintain the confidentiality of information of which he/she becomes aware in the course of his/her assignment or collaboration with the UZH and which is neither public knowledge nor generally accessible.
2. The signatory acknowledges that he/she is obliged to comply with the provisions of the Act on Information and Data Protection (IDG) during the course of his/her assignment or collaboration with the UZH.
3. The signatory pledges to process data and information exclusively for the purposes stipulated in the assignment or the cooperation agreement and to only pass them on to third parties with the express consent of the UZH. Upon termination of the assignment or the cooperation, the signatory is also obliged to return all documents, data carriers, backup copies or other documents upon request of the UZH or to destroy them in accordance with data protection regulations. This is subject to any statutory retention obligations or contractual provisions to the contrary.
4. The signatory pledges to take the necessary measures to prevent unauthorised persons from gaining access to the data or data being lost. In the event of loss of data or data carriers or possible unauthorised access by third parties, the UZH must be informed immediately.
5. The signatory acknowledges that the violation of his or her duties may lead to criminal consequences under Art. 320 Swiss Criminal Code (SCC, official secrecy), Art. 40 IDG (processing of personal data in breach of contract) and, if applicable, the provisions on special confidentiality obligations such as professional confidentiality (Art. 321 and 321bis SCC) or manufacturing and trade secrecy (Art. 162 SCC).

I hereby confirm that I have taken note of the above provisions and obligations and pledge to comply with them.

Description of the assignment / collaboration: PhD research

UK, 22nd January 2024	Evelyn Mary-Ann Antony	
Place, Date	First Name / Last Name	Signature

Zurich Project of Social Development: Ethical Approval Documents

Universität Zürich[UZH]

Faculty of Philosophy
Ethics Committee

Binzmühlestrasse 14, Box 22
CH-8050 Zurich
http://www.phil.uzh.ch/forschung/ethik.html#20

UZH, Faculty of Arts, Ethics Committee,
Binzmühlestrasse 14, Box 22, CH-8050 Zurich

Dr. Denis Ribeaud
Head of Department, University of Zurich Jacobs
Center for Productive Youth Development z-proso,

Andreasstrasse 15
8050 Zurich

Prof. Dr. Klaus Oberauer
President of the Ethics Committee
k.oberauer@psychologie.uzh.ch

Zurich, 12.03.2018

Approval of your ethics application "z-proso"

Dear Dr. Ribeaud,
The ethics committee has examined all non-physiological aspects of your project "Zurich Project on Social Development from Childhood to Adulthood (z-proso)". I am pleased to inform you that these aspects of the study are ethically unobjectionable and are therefore approved without conditions (approval no. 2018.2.12). As you told us, the physiological measurements were previously approved by the Cantonal Ethics Committee (KEK). Therefore, as far as we understand, ethical approval is now available for every aspect of the study. I wish you every success in conducting the study.

Best regards

Klaus Oberauer
President of the Ethics Committee

Universität Zürich[UZH]

Faculty of Philosophy
Ethics Committee

Andreasstrasse 15, PO Box 12
CH-8050 Zurich
http://www.phil.uzh.ch/forschung/ethik.html#20

UZH, Faculty of Arts, Ethics Committee,
Andreasstrasse 15, PO Box 12, CH-8050 Zurich

Ethics Committee of the PhF
chair.ethics.committee@phil.uzh.ch

Dr. Denis Ribeaud
Jacobs Center for Productive Youth Development
Andreasstrasse 15, PO Box 12
CH-8050 Zurich, Switzerland

Zurich, 20.01.2022

Ethics approval no. 21.12.13
"Zurich Project on Social Development from Childhood to Adulthood, Phase VI"

Dear Dr. Ribeaud

The Ethics Committee has approved your project "Zurich Project on Social Development from Childhood to Adulthood, Phase VI" (approval no.**21.12.13**).

Best regards,

Prof. Dr. Peter Schaber
On behalf of the PhF EK

Appendix D

z-proso - Social-Problem Solving Questionnaire Situational Vignettes

Vignette 1 - Swing

Pretend that this is you and that this is another child. The other child has been on the swing for a long, long time and doesn't seem to want to share the swing with you. You would really like to play on the swing.

• Feeling: How would you feel if this would happen to you? Would you rather feel happy, scared, angry, or sad?

• Behavioural response question 1: What could you say or do so that you could play on the swing?

Other behavioural questions:

2. This is an idea, You could (repeat the answer briefly). Do you know anything else you could do or say?

3. Do you know anything else that you could do if she/he doesn't answer to you?

4. And do you have any other idea on what you could say or do?

Vignette 2 - Ball

Now look at this picture. Imagine, that this is YOU [show] and this is a group of other children, who are playing ball together. YOU would love to play with the other kids, but they didn't ask you to join in. How do you feel when something like this happens? You can show how you feel here on the faces.

Behaviour responses:

1. *What could you say or do if she/he doesn't answer to you?*
2. *This is an idea, You could (repeat the answer briefly). Do you know anything else you could do or say?*
3. *Do you know anything else that you could do if she/he doesn't answer to you?*
4. *And do you have any other idea on what you could say or do?*[7]

[7]These behavioural questions are repeated across all vignettes listed after Vignette 2

Vignette 3 - Playground

Imagine in this picture that this is YOU and this is another girl/boy. You and the other girl/boy are on the playground and suddenly the girl/boy starts saying mean things to you and laughs at you. How do you feel when something like this happens? You can show how you feel here on the faces.

Vignette 4 - Painting pictures and water spilling

Imagine you are painting pictures with another child. This is you and this is the other child. You spilled the water glass by accident. The other child screams, "You ruined my beautiful picture, you are stupid." How do you feel when something like this happens? You can show how you feel here on the faces.

Vignette 5 - Birthday ball

Now imagine YOU are going to the playground with a new ball that you received for your birthday. There are some other kids waiting who want to play with the ball. A kid the same size as you comes and takes the ball away. How do you feel when something like this happens? You can show how you feel here on the faces.

Vignette 6 - New friend

Imagine that YOU are here and this is another girl/boy from your class. Imagine also that today is your first day of school. You would like to have the girl/boy as a friend, but the girl/boy doesn't talk to you. You can show how you feel here on the faces.

Appendix E

z-proso - Alabama Parenting Questionnaire Items List (Parent Version)

1. You have a friendly talk with your child.
2. You let your child know when he/she is doing a good job with something.
3. You threatened to punish your child and then do not actually punish him/her.
4. You volunteer to help with special activities that your child is involved in (e.g., sports, Boy/Girl Scouts, church youth groups).
5. You reward or give something extra to your child for obeying you or behaving well.
6. Your child fails to leave a note or to let you know where he/she is going.
7. You play games or do other fun things with your child.
8. Your child talks you out of being punished after he/she has done something wrong.
9. You ask your child about his/her day in school.
10. Your child stays out in the evening past the time he/she is supposed to be home.
11. You help your child with his/her homework.
12. You feel that getting your child to obey you is more trouble than it's worth.
13. You compliment your child when he/she does something well.
14. You ask your child what his/her plans are for the coming day.
15. You drive your child to a special activity.
16. You praise your child if he/she behaves well.
17. Your child is out with friends you do not know.
18. You hug or kiss your child when he/she has done something well.
19. Your child goes out without a set time to be home.
20. You talk to your child about his/her friends.
21. Your child is out after dark without an adult with him/her.
22. You let your child out of a punishment early (e.g., lift restrictions earlier than you originally said).
23. Your child helps plan family activities.
24. You get so busy that you forget where your child is and what he/she is doing.

25. Your child is not punished when he/she has done something wrong.

26. You attend PTA meetings, parent/teacher conferences, or other meetings at your child's school.

27. You tell your child that you like it when he/she helps around the house.

28. You don't check that your child comes home from school when he/she is supposed to.

29. You don't tell your child where you are going.

30. Your child comes home from school more than an hour past the time you expect him/her.

31. The punishment you give your child depends on your mood.

32. Your child is at home without adult supervision.

33. You spank your child with your hand when he/she has done something wrong.

34. You ignore your child when he/she is misbehaving.

35. You slap your child when he/she has done something wrong.

36. You take away privileges or money from your child as punishment.

37. You send your child to his/her room as punishment.

38. You hit your child with a belt, switch, or other object when he/she has done something wrong.

39. You yell or scream at your child when he/she has done something wrong.

40. You calmly explain to your child why his/her behaviour was wrong when he/she misbehaves.

41. You use time out (make him/her sit or stand in corner) as a punishment.

42. You give your child extra chores as a punishment.

Appendix F

Standardised Estimates (MCS and z-proso)

Table 7.5. Multiple Linear Regression Results for ED and Peer Relationship Problems (MCS).

Outcome Variable	Predictor	β	*p*
Age 5 Emotion Dysregulation Symptoms	Gender	.067	< .001
	Income	-.003	.883
	Maternal Education	.002	< .001
	Child Ethnicity	-.005	.260
Age 7 Emotion Dysregulation Symptoms	Gender	-.010	.642
	Income	-.010	.190
	Maternal Education	.002	< .001
	Child Ethnicity	-.007	.491
Age 11 Peer Relationship Problems	Gender	-.042	.259
	Income	-.003	.822
	Maternal Education	.006	<.001
	Child Ethnicity	-.049	.004

Table 7.6. Multiple Linear Regression Results for Anger (z-proso).

Predictor	B	*p*
Gender	-1.065	< .001
ISEI 24	4.113	.054
ISEI 39	1.261	.041
ISEI 46	3.114	.041
Migration Status (Parent Born in Switzerland)	0.001	.999
Migration Status (Migrant Parents)	-0.466	.208

Table 7.7. Moderation Model Results: Negative and Positive Parenting (z-proso).

Parenting Style and Interaction	β	*p*
Negative Parenting × ADHD Symptoms × Emotion Dysregulation Symptoms (Age 9)	-.024	.354
Positive Parenting × ADHD Symptoms × Emotion Dysregulation Symptoms (Age 9)	-.011	.742

Table 7.8. Mediation Model Results: ADHD, Anger, and Conflict Coping (z-proso).

Path	β	*p*
ADHD (Age 7) → Anger (Age 9)	.003	< .001
Anger (Age 9) → Aggressive Coping (Age 11)	1.953	< .001
Indirect Effect (ADHD → Anger → Aggressive Coping)	.005	< .001
ADHD (Age 7) → Anger (Age 9)	.003	< .001
Anger (Age 9) → Competent Coping (Age 11)	4.928	< .001
Indirect Effect (ADHD → Anger → Competent Coping)	.013	< .001