Attachment, Emotion Regulation, and ADHD: The Role of the *Khadama* (Foreign Domestic Worker) in Qatar

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Abstract

Foreign domestic workers (FDWs) may be a source of instrumental support to the children they care for, but we know very little of the effects of their presence on their charges' emotional and behavioral well-being. This doctoral dissertation focuses on attachment security to the primary (mother and father) and secondary proxy (FDW) parental figures in Qatar's children, adolescents, and young people. Investigating its effects on emotion regulation (ER), hyperactivity, and attention problems may provide insight into the role of adolescents' attachment security as related to such secondary attachment figures. To achieve this objective, three empirical studies were designed. Study 1 is a meta-analytic investigation that examines the relationship between attention-deficit/hyperactivity disorder (ADHD) forms and emotion (dys)regulation strategies, considering a broad spectrum of possible manifestations across samples and exploring the effects of different moderators. Study 2 covers the validation in Modern Standard Arabic of an instrument to assess attachment to parents and to a commonplace secondary figure in Qatar: the FDW, also known as *Khadama*. Finally, Study 3 utilizes a mediation analysis to investigate if ER mediates the relationship between attachment security to both primary (mother and father) and secondary parental figures and ADHD symptoms (hyperactivity and attention problems). Based on 172 selected studies, Study 1 demonstrated the positive association between ADHD and emotion dysregulation, forming the base to investigate other external, but proxy, factors like attachment security that may account for the development of adolescents' ER strategies. In Study 2, the Arabic Inventory of Parent and Domestic Worker Attachment was administered to a sample of 387 adolescents living in Qatar and proved a valid and reliable option to investigate the attachment security adolescents acquire in their interaction with primary parental figures and FDWs. Study 3 was tested in a sample of 286 Arabic-speaking

adolescents. It demonstrated that attachment security to parents had an association with ADHD symptoms (negative) and ER strategies (negative for cognitive reappraisal and positive for expressive suppression). However, ER strategies did not mediate the relationship between attachment security and ADHD symptoms. Intriguing gender effects were revealed, the most pressing of which is that attachment security to the FDW predicted hyperactivity among girls, as it has been discussed that girls spend more time with FDWs owing to gendered activity organization. Practical recommendations and future research scope are discussed.

Table of contents

CHAPTER 1:

GENERAL INTRODUCTION

The family is a bridge to understanding the world, providing a safe avenue for exploration and equipping the individual with self-confidence. The connections with one's mother and father may vary from child to child. Children who come from a nurturing home environment built on understanding and communication tend to have a sense of autonomy throughout their lives (Allen et al., 2003; Bosmans et al., 2020). In contrast, those who have been left in barren environments may develop a precarious sense of safety, finding it difficult to form the basic relationships needed to thrive (Genc & Arslan, 2022; Quiñones-Camacho et al., 2022; Stancu et al., 2020). Ultimately, studying the potential effects of parental behavior and understanding the importance of the relationships that underpin children's personalities and sense of safe haven can provide insight into adolescents' well-being.

However, parents are not the only significant adults in children's lives; grandparents, family friends, and domestic workers also contribute to their healthy development (Bowlby, 2007; Hawkins et al., 2015; Howes & Spieker, 2016; Imran et al., 2021). The present doctoral thesis will focus on foreign domestic workers (FDWs) as a proxy parenting figure.

Attention-Deficit/Hyperactivity Disorder Symptoms and Environmental Correlates

Attention-deficit/hyperactivity disorder (ADHD) is a chronic neurodevelopmental disorder with a complex gene-related etiology that involves changes in the brain as well as environmental influences (Friedman & Rapoport, 2015; Nigg, 2012; Rovira et al., 2020; Shaw et al., 2012). Globally, approximately 129 million individuals under the age of 18 have ADHD (Thomas et al., 2015). According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision criteria (American Psychiatric Association, 2022), individuals with ADHD symptoms

have trouble with problem solving and emotion regulation (ER), and tend to display a range of externalizing behaviors (McRae et al., 2020).

Aside from the biological aspect, external factors—such as the quality of parenting, home environment, and community—can influence hyperactivity and attention problems (for a review, see Einziger & Berger, 2022). The severity and expression of ADHD symptoms can be influenced by many variables, including contextual factors such as parental attachment quality and parenting style (Bowlby, 1969; Gross, 2015; McRae et al., 2020). Early detection in the home environment, which includes attachment relationships to parents, can be vital for excluding hyperactivity and attention problems from the child's developmental pathway; this is because attachment bonds have an impact on behavior and ER ability (Nikolas et al., 2015).

Understanding the environmental factors that can help identify early development of hyperactivity and attention problems in non-clinical samples can facilitate timely detection and intervention. Therefore, the analysis in this doctoral thesis is focused on symptoms of hyperactivity and attention problems reported by children in the general population, rather than those with a clinical ADHD diagnosis. Those in the sub-clinical realm may not be within the threshold of ADHD and are left under the radar, developing further psychological and social problems; thus, taking the environmental approach helps gauge ER and may help better identify or even prevent oncoming problems (McQuade, 2022; McQuade et al., 2021). In this thesis, this will be done by investigating non-clinical samples' attachment security to parental (and proxy) figures and how such attachment security relates to hyperactivity and attention problems, as attachment to parental figures helps shape externalizing problems in children and adolescents (Gross, 2015; McRae et al., 2020).

Attachment Security and Parental Figures

Attachment security, which has long been studied (Ainsworth et al., 1978; Bowlby, 1969, 1982), has important implications for emotional and behavioral development. According to Bowlby (1969), early affective experience with a primary caregiver leads to the formation of an internal working model. This model determines the characteristics of the individual's attachment to caregivers' expectations, as well as the development of self-perception. Once formed, this model tends to be stable and has an important impact on most subsequent aspects of development. Different types of attachment reflect different types of internal working models and may result in varied developmental outcomes in children (Bowlby, 2007; Hawkins et al., 2015).

Furthermore, studies of parents who struggle to establish a secure attachment with their children have reported clinical-level problems among the latter (e.g., Cassidy & Shaver, 2016; Genc & Arslan, 2022; Stancu et al., 2020). Considering the development of children into adolescence, caregivers are responsible for guiding them toward autonomy by developing their behavioral and emotional control abilities (Allen et al., 1994; Hoeve et al., 2012; Marsh et al., 2003). On a clinical level, studies have linked insecurity to increased patterns of problems (Allen, 2008; Allen et al., 2007). Parental figures creating a dysfunctional family environment are related to internalizing (e.g., Brenning et al., 2012; Quiñones-Camacho et al., 2022; Yang et al., 2022) and externalizing behaviors (e.g., Cavendish et al., 2012; Eisenberg et al., 2005; Fosco et al., 2012; Gallarin & Alonso-Arbiol, 2013; Hoeve et al., 2012; Kordahji et al., 2021; Muarifah et al., 2022). Children and adolescents with insecure attachment have a higher chance of developing internalizing and externalizing problems, as they may not be able to use their parents as a support system to obtain encouragement to develop their problem-solving and emotion control skills when they venture into their social surroundings

(Dubois-Comtois et al., 2013). If the parental figures—the caregivers—are no longer a protective factor, they may have an adverse impact on adolescents' sense of autonomy. These adolescents may express behavioral and emotional distress. Such a link has been observed specifically in adolescents with attention and hyperactivity problems, including studies with longitudinal designs (e.g., Thorell et al., 2012), indicating a higher prevalence of hyperactivity and attention problems among adolescents with insecure attachment to their parents.

Furthermore, additional attachment figures could contribute to attention and hyperactivity or other externalizing problems. Links between attachment security and externalizing problems have been documented, where lower attachment security or insecure parenting styles would account for such problems (Eisenberg et al., 2005; McRae et al., 2020; Quiñones-Camacho et al., 2022). Although these links have been shown with primary parental figures, they may extend to other relationships found in the same household or where there is consistent exposure, such as with siblings or FDWs. Despite the potential impact of secondary attachment figures on emotional and behavioral development in children and adolescents, this theme has frequently been dismissed in studies of family environments (Al-Matary & Ali, 2013; Al-Matary & AIjohani, 2021; Khalifa & Nasser, 2015; Ma et al., 2020; Roumani, 2005). Thus, the role of other (secondary), that is, proxy attachment figures within the household has been largely understudied.

Role of Secondary Parental Figures

Several individuals may serve as secondary parental figures, including grandparents, older siblings, nursery/daycare teachers, or secondary school advisors (e.g., Howes & Hamilton, 1992; Howes & Spieker, 2016; Imran et al., 2021; Stewart & Marvin, 1984). In this thesis, the secondary proxy parental figures of interest are family

employees, such as nannies or caregivers in the home, who take care of children and adolescents.

In some geographic contexts, proxy parental figures are ubiquitous, although their effect on children's and adolescents' well-being has been understudied (e.g., Al-Matary & Ali, 2013; Al-Matary & AIjohani, 2021; Roumani, 2005). Currently, joint parental care efforts for children may not be the same as before, as modern living requires more attention when both parents are in the workforce. In some regions, parents can afford to pass the stress of caregiving responsibilities on to domestic help (Khalifa & Nasser, 2015). However, the inclusion of this external caregiving figure in the household may change family dynamics (Andrevski & Lyneham, 2014; McGuinness, 2021).

In the Gulf and Middle East and North Africa region, FDWs, called *Khadama*, are nannies and housekeepers employed to manage the household (Al-Ghanim, 2013; Ridge et al., 2017, 2020). Despite how common they are, there is very little research on such secondary parental figures, rendering families largely unaware of the positive or negative effects on their children's development while becoming increasingly dependent on these individuals (Deneault et al., 2021; Khalifa, 2009; Khalifa & Nasser, 2015; Malit et al., 2018).

Likewise, despite Arabic being one of the most spoken languages across 25 countries, there is no Arabic instrument to measure attachment security. Validating an Arabic measure of attachment security that includes secondary parental figures can provide further insight into the factors that contribute to children's and adolescents' well-being and (mal)adjustment. Tools developed in the West or in the so-called WEIRD (i.e., Western, Educated, Industrialized, Rich, and Democratic) countries may not accommodate the specificities of the Middle East and Global South, where there are multiple secondary parental figures within the same household. Khalifa and Nasser

(2015) presented the baseline to approach this topic of secondary parental figures as they indicated which effects of FDWs need addressing. The purpose of this study is to understand the effects of having an additional adult living in the household and investigate the relationship quality between children, the FDW, and the parents.

ER and Dysregulation in Childhood

Difficulty in modulating emotions in childhood can be expressed through an array of negative affective states, including anger, distress, and frustration, associated with an increased risk of developing future behavioral problems such as aggression and antisocial tendencies (Eisenberg et al., 2001; McCoy & Raver, 2011). As such, adequate ER constitutes one of the pillars of socialization (Schäfer et al., 2017). On the contrary, poor regulation can lead to alterations in immediate and long-term social functioning (England-Manson, 2020; Keenan, 2000).

The construct of ER was developed from different theoretical approaches (Gross, 2015; Prizmic-Larsen et al., 2014). Thompson's (1994) definition focuses on the concept of psychological adjustment; regulation is viewed as a set of intrinsic and extrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions (McCoy & Raver, 2011; Thompson, 1994). Regulation involves control of emotions including their recurrence and intensity; maintaining, promoting, inhibiting, or attenuating emotional activation; and expressing an emotion different from the one provoked (McCoy & Raver, 2011). ER has a transdiagnostic feature, as those with mental disorders are typically dysregulated (Schäfer et al., 2017). Failing to maintain emotional control also increases the chances of developing neurodevelopmental disorders (England-Manson, 2020).

Adolescents' emotional adjustment and ability to regulate emotions play a determining role in the acquisition of social competencies (for reviews, see Bariola et al.,

2011; Morris, 2007). In a review, Morris (2007) analyzed the family context variables associated with ER in children and adolescents, finding that regulation is explained by means of a tripartite model. According to this model, regulation is directly influenced by the family climate. In turn, the family climate is composed of the parenting style, the type of attachment, and the emotional expressiveness of the family (Morris et al., 2007). In Bariola et al.'s (2011) review of studies of parental emotion socialization factors contributing to children and adolescents' ER (both with clinical and non-clinical samples), several elements of parental emotional expression in the family context (i.e., frequency, intensity, and valence) appeared related to aspects of children and adolescents' social and emotional development.

Finally, the poor management of emotions leads to unfavorable consequences, such as internalizing and externalizing behaviors, but functional or adaptive strategies may help counteract such problems (Gruhn & Compas, 2020). Research illustrates that parents can teach children to regulate their emotions when faced with various dilemmas (Gruhn & Compas, 2020; Modecki et al., 2017). External factors, such as traumatic experiences, can affect the skills of self-regulation and ER (e.g., Brumariu et al., 2020; Garnefski et al., 2001; Fox & Calkins, 2003). The home environment and relationships with parental figures enable the gauging of external factors, as they contribute to the development and growth of ER (for a review, see Obeldobel et al., 2023).

Specific strategies have been observed to promote well-being (e.g., Hill et al., 2006; Gratz et al., 2009), while other strategies relate to less adaptive or dysfunctional outcomes (e.g., Dekkers et al., 2021; Rogier et al., 2017). Being unable to differentiate between adaptive and maladaptive strategies may result in difficulties in managing one's emotions, leading to mental and social problems.

Relevance of the Study

The aim of this study is to address the gap in the literature on attachment evaluation instruments and further understand the effects of FDWs on adolescents' ER and behavior (externalizing). Although the employment of and dependence on FDWs are commonplace in Qatar's daily life, there is very little research regarding the effects FDWs have within the household. By understanding this aspect, we can reassess the developmental home environment to allow children to grow with fewer obstacles. Thus, to fully understand the effects of both primary and secondary parental figures on adolescents, it is important to examine the quality of their relationships, ER, and behavior.

Objectives

This research project focuses on attachment security to primary (mother and father) and proxy (FDW) parental figures among Qatar's adolescents and young people. Understanding the connection between ER and ADHD symptoms can help determine if ER can mediate environmental factors, such as attachment security. Investigating the effects of attachment security on ER and ADHD types may provide insight into the dynamics of adolescents' attachment with parental figures.

1. **Disentangling the association of ER with ADHD symptoms**

   ER is an important skill to control our emotions and behaviors better. Those experiencing symptoms of ADHD, such as attention problems and hyperactivity, can have trouble regulating their emotions. Through a systematic meta-analytic review of potentially helpful strategies, we can better understand this crucial skill that may benefit those with emotional and behavioral control problems similar to forms of ADHD.

2. **Validation of an attachment security tool in Arabic**

   The purpose of the second part of this work is to validate an attachment security questionnaire in Arabic, as there is no specialized tool that clarifies attachment security quality in Modern Standard Arabic. This will allow future researchers to use a valid and reliable instrument to make cross-cultural comparisons. Thus, a further understanding of the attachment of adolescents to FDWs in the Arab world can be possible.

3. **Links between attachment security and ER strategies, and their effects on hyperactivity and inattention symptoms**

   The third objective of this study is to investigate parental attachment and how it affects adolescents' ER. Although attachment security has been widely studied, there is a surprising lack of research on the quality of the relationship with secondary parental figures, which might be vital in adolescents' everyday lives. In Qatar, FDWs live in employers' homes and manage household chores. Besides their scope of employment, they care for their employers' children and supervise their activities. Studying the effect of attachment security on ADHD forms, alongside ER strategies that may influence this relationship, can further our understanding of how maladaptive behavior is expressed (specifically, hyperactivity and inattention symptoms). Incorporating the secondary parental figure, such as the FDW, may provide further insight into home and family environments, which previous research in the region has neglected.

Three empirical studies were designed to achieve the proposed objectives. As a result, this doctoral dissertation is structured into five chapters, three of which are briefly presented below (the other two include this chapter and Chapter 5, which summarizes the results and provides the general conclusions).

Chapter 2. Attention-Deficit/Hyperactivity Disorder's Associations with ER and Dysregulation Strategies: A Meta-Analysis

This meta-analysis covers a selection of studies based on the relationship between ADHD and ER across multiple languages and databases. The methodology is based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses standards, with statistical procedures conducted using RStudio software. The primary objective is to examine the associations of ADHD symptoms with functional and dysfunctional ER, considering a broad spectrum of possible manifestations in children, adolescents, and youth samples. The second aim is to explore how different moderators (i.e., sample types, assessment measures, study types, ER strategy, and ER measurements) affect the abovementioned associations.

From the evidence reviewed here and from previous meta-analytical integrations (i.e., Graziano & García, 2016; Beheshti et al., 2020), investigating the associations of ADHD symptoms with functional ER, as well as direct and indirect forms of ER, in a wider range of children and adults is proposed. Additionally, moderators that may influence the relationship between ADHD and ER are explored.

Chapter 3: **Development of the Arabic Inventory of Parent and Domestic Worker Attachment**

This study concentrates on developing an adolescent attachment measurement tool for use in the Arabic population in the Middle East and North Africa (MENA). It will stem from the Inventory of Parent and Peer Attachment–Short (Gallarin & Alonso-Arbiol, 2013), but will also include a relevant context-specific secondary figure—the FDW or *Khadama*—as in many cases, the primary parental figures delegate parental roles to the FDW, increasing dependence on the latter (Malit et al., 2018). The study's methodology comprises confirmatory factor analysis and the calculation of Tucker's phi to derive the factor validity and compare the translated Arabic version developed in this thesis with an English version also tested in Qatar. Concurrent validity will be tested with subscales of the Relationship dimension of the Family Environment Scale (Moos & Moos, 1994). Reliability will be examined by analyzing internal consistencies, which will be compared across linguistic versions.

The purpose of this study is to contribute to the development of an Arabic tool for the assessment of attachment in a sample of adolescents (aged 12 to 17 years) living in Qatar. While some students will complete the version in modern Arabic, others attending international schools will fill in the English version for comparison purposes. From methodological and applied viewpoints in the adolescent developmental phase, both can show that there is an undeniable need for valid and reliable measures to enable the study of both primary (parental) and secondary attachment figures, in this case, FDWs. As they typically live in the same household, the examination of their possible effects on adolescents' socioemotional development using methodologically sound and useful assessment tools is important. This adapted tool was named the Arabic Inventory of Parent and Domestic Worker Attachment and will be used in the following study.

From the evidence reviewed in Chapter 3, Gallarin and Alonso-Arbiol's (2013) study demonstrated a unidimensional form of attachment. Therefore, an Arabic version of attachment security suited to the Qatari home environment was developed, validated, and tested for consistency, incorporating the secondary parental figure, namely the FDW. Confirmatory factor analysis and Tucker's phi demonstrated that the Inventory of Parent and Domestic Worker Attachment is a valid and reliable assessment tool.

Chapter 4. Parental Attachment Security and Hyperactivity and Attention Problems in Adolescents: Mediating Role of ER

Recent studies (e.g., Bunford et al., 2015; McRae et al., 2020; Mikulincer & Shaver, 2007; Perlman et al., 2016) suggest that when parents fail to establish secure emotional bonding with their children, the latter can engage in maladaptive behaviors, leading to long-term psychological disorders. In this study, an Arabic sample's attachment security to their primary parental figures (mother and father) and the FDW against ER and internalizing and externalizing problems are investigated. The study's methodology consists of a mediation analysis to investigate if ER mediates the relationship between attachment security and ADHD symptoms. We propose investigating the relationship of attachment security to the primary (mother and father) and secondary parental figure (FDWs) with ER strategies and ADHD symptoms (hyperactivity and attention problems) in adolescents in Qatar. Likewise, we intend to test whether ER mediates the relationship between attachment security and ADHD symptoms. Correlation and regression analyses will be used to investigate these interactions.

Finally, Chapter 5 concludes the thesis. Results from all three empirical studies will be summarized and discussed in light of the existing literature. Some recommendations for future research, along with implications for practitioners, educators, and families, will be presented.

CHAPTER 2:

Attention-Deficit/Hyperactivity Disorder's Associations with Emotion Regulation and Dysregulation Strategies: A Meta-Analysis

This chapter is based on the following work:

Mohammed, A., Alonso-Arbiol, I., Pizarro, J. J., Páez, D., da Costa, S., Mendia, J. (under review). ADHD associations with Emotion Regulation and Dysregulation Strategies: A Meta-Analysis. *Manuscript submitted for publication*.

Abstract

Using Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines, we conducted a systematic meta-analysis on the relationship between emotion regulation (ER)/dysregulation strategies and symptoms of attention-deficit/hyperactivity disorder (ADHD). We explored effect sizes in both direct and indirect forms of ER and how different moderators (i.e., clinical and non-clinical samples; gender and age; assessment measures; study type) affect the relationship between ADHD's symptoms and ER strategies. Based on 172 studies that fit the search criteria, with a total of 206 samples (N = 78,045; M_{age} = 14.58 and SD_{age} = 3.31), the random-effects model of meta-analysis revealed that the main effect of ADHD symptoms had a substantial negative effect size (pooled r mean = -.34) with functional ER and a positive association with dysregulation (pooled r mean = .40). ADHD was related to high rumination and low positive reappraisal and, weakly, to high suppression. Concerning moderation analyses, only ER strategy and ER measurements showed significant differences between groups; moderating effects of gender and age were not observed. The implications of the results for therapy and improving patients' quality of life, as well as for future research, are discussed.

Keywords: attention problems, emotion regulation strategies, dysregulation, hyperactivity problems, meta-analysis.

Introduction

Worldwide, attention-deficit/hyperactivity disorder (ADHD) is the most common neurodevelopmental disorder. It has a prevalence of 5–8% in children, and up to 65% continue to experience impairing symptoms into adulthood (Asherson et al., 2016; Faraone et al., 2021; Thomas et al., 2015; Song et al., 2021). Although hyperactivity may gradually diminish with age, it is replaced by inattention and emotional issues as the core manifesting problem (Chang et al., 2013; Larsson et al., 2011). The core symptoms of ADHD continue from youth to adulthood and are associated with behavioral, cognitive, academic, social, and familial functioning impairments. Additionally, the condition affects not only the patient but everyone surrounding them (Asherson et al., 2016; Loe & Feldman, 2007; Mash & Barkley, 2003; Paidipati et al., 2017; Thompson, 2019).

While many researchers have emphasized that emotion dysregulation is a core feature of and a significant contributor to the functional impairment in youth and adults with ADHD (e.g., Barkley & Fischer, 2010; Beheshti et al., 2020; Bunford et al., 2015; Graziano & Garcia, 2016; Hirsch et al. 2018; Retz et al., 2012; Nigg et al., 2004; Shaw et al., 2014), there is still a need for a greater understanding of the framework of ADHD and the relationship of these symptoms with ER. A systematic overview of results pertaining to the links between ADHD and ER and dysregulation strategies, as well as factors that help explain such associations, would undoubtedly be instrumental for both clinicians and researchers. To fill this gap, the purpose of this study was to conduct a meta-analytical review of the existing literature on this theme.

ADHD

The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (American Psychiatric Association, 2022) and International Classification of

Diseases-11th Revision (World Health Organization, 2019) agree regarding attention problems and hyperactivity/impulsivity being the two main distinct forms or presentations (apart from the combined one) of ADHD. Studies have highlighted that people with ADHD generally have difficulties regulating their emotions (Van Stralen, 2016). A behavioral expression of ADHD is hyperactivity, which may overlap with similar features, such as disruptive behavior (Brocki et al., 2019). Keeping in mind that those with ADHD display behavioral problems, such as hyperactivity and impulsivity, emotion dysregulation may contribute to the exacerbation of such problems. Both the clinical and non-clinical populations can display ADHD symptoms; non-clinical hyperactivity and attention problems, if not detected or diagnosed, can have serious repercussions (Muris et al., 2008). By examining these two main forms, we may be able to gain a deeper understanding of the environmental factors to consider in psychological intervention (as compared to the biological factors known to be responsible for this neurodevelopmental disorder).

Emotion Dysregulation and Regulation

As stated previously, emotion dysregulation seems to be a core element of ADHD. Emotion dysregulation refers to a poor ability to manage emotional responses or to keep them within an acceptable range (Gross, 2015). It includes the following aspects: (a) lack of awareness, understanding, and acceptance of emotions; (b) lack of adaptive strategies for regulating emotions (i.e., intensity and/or duration); (c) inability to tolerate distress to achieve goals; and (d) inability to perform goal-directed behaviors when experiencing distress. It involves experiencing emotions that are too intense for the situation that triggered them and consequently behaving impulsively (Gratz & Roemer, 2004; Thompson, 2019). Graziano and Garcia (2016) considered four dimensions of emotion dysregulation: emotion recognition/understanding, emotion reactivity/negativity/lability,

ER, and empathy/callous-unemotional traits. Beheshti et al. (2020) considered the following facets of emotion dysregulation: low frustration tolerance, irritability, ease of negative emotional experience, and emotional lability. Overall, dysfunctional ER is an important facet of this construct. Relatedly, D'Agostino et al. (2017) suggested that maladaptive ER strategies such as avoidance, rumination, denial, emotion suppression, aggression, and venting are instances of emotion dysregulation. These cognitive and behavioral strategies ultimately make emotional expressions less functional.

Moving beyond dysfunctional ways of self-regulating emotions, it is important to gain a deeper understanding of the adaptive mechanisms of ER (Brady et al., 2018). ER can be considered a group of conscious and unconscious strategies meant to increase, maintain, or decrease an emotional response. Usually, ER seeks to decrease negative emotional responses and to increase positive emotional responses (Gross, 2015). Shaw et al. (2014) defined ER as an individual's ability to modify an emotional state to promote adaptive, goal-oriented behaviors (Thompson, 1994). ER has many synonyms, such as self-regulation and mood affect regulation, but ultimately it is a learned skill we come to adopt through our caregivers and experiences (Forslund et al., 2016; Stepp et al., 2012). Adaptive ER, related to emotional intelligence, includes direct coping, searching for social support, distraction, positive reappraisal, regulated emotional expression, and self-control (Peña-Sarrionandia et al., 2015). Failure to use adaptive ER is related to ADHD (Livingstone et al. 2009). ER requires a sense of control over our emotions, which may not be possible for those with neurodevelopmental disorders such as ADHD, who have a history of impulsive behavior denoting a failure in self-control.

In the understanding of ER and dysregulation strategies, other non-conceptual elements should be addressed. In fact, potential emotion dysregulation or regulation strategies may not be immediately evident. For example, aggressive behavior may be

considered an indirect measurement of emotion dysregulation if used as a coping mechanism, as a way of discharging or venting the emotion to cope with it (Hentges et al., 2018). All in all, it is relevant to consider indirect forms of emotion dysregulation and regulation strategies demonstrating a dysregulated or regulated state.

Previous Meta-Analyses: Association of ADHD and Emotion Dysregulation

Two previous meta-analyses (Beheshti et al., 2020; Graziano & Garcia, 2016) have examined the link between ADHD and emotion dysregulation. Beheshti et al. (2020) investigated the standardized mean difference in emotion dysregulation—both as a general factor and with its specific facets (i.e., emotional lability, negative emotional responses, and emotion recognition)—between adults with ADHD and healthy controls. Adults with ADHD revealed significantly higher levels of general emotion dysregulation. In addition, symptom severity and general emotion dysregulation were significantly correlated. This led Beheshti et al. (2020) and Graziano and Garcia (2016) to support the claim that emotion dysregulation is a core feature of ADHD's psychopathology. Concerning the dimensions of emotion dysregulation as defined by Beheshti et al. (2020), emotional lability and negative emotional responses play a definitive role in the psychopathology of adults with ADHD (Beheshti et al., 2020). They found a pooled significant correlation of r = .54 between ADHD symptoms and general dysregulation. However, as the authors' conceptualization of emotion dysregulation overlapped with the severity of the symptomatology of ADHD, particular attention should be paid to specific strategies of functional and dysfunctional ER that are not direct expressions of ADHD symptoms.

Graziano and Garcia (2016), conversely, analyzed these variables among children and adolescents and found a pooled significant correlation of r = .37 (d = .80) between ADHD symptoms and general emotion dysregulation; specifically, they found the same

effect size between ADHD symptoms and dysfunctional ER. In addition, they found no moderating effect of age and gender and stated that emotion dysregulation is persistent in those with ADHD across developmental stages.

These combined findings indicate that emotion dysregulation is a core component of the disorder or a significant feature among those with ADHD (Hirsch et al., 2018; Retz et al., 2012). Overall, both meta-analytic studies suggest clinical professionals to improve the diagnosis and treatment of ADHD by targeting and addressing ER. However, these two meta-analyses (Beheshti et al., 2020; Graziano & Garcia, 2016) did not indicate the specific functional and dysfunctional ER strategies used by people with ADHD symptoms. For a more fine-grained analysis, it is important to consider specific ER strategies associated with ADHD symptoms. Identifying the relevant ER strategies may facilitate an understanding of what does not work with ADHD symptoms. Furthermore, it is of great value to consider direct ER strategies as proactive, conscious intended actions or thoughts to regulate negative emotions (Prizmic-Larsen et al., 2014). These strategies can be methodologically and directly evaluated in a questionnaire about ER.

Possible Moderators of the Relationship Between ADHD and ER

The literature suggests that some variables may account for changes in the relationship between ADHD and ER; *individual dispositions* are an example. Demographic variables may include country of residence (see Alkhateeb & Alhadidi, 2019; Bergey & Filipe, 2018), while gener and age have already been proven not to moderate this relationship (Beheshti et al., 2020; Graziano & Garcia, 2016) in children and adults. In this meta-analysis, individuals up to the age of 30 will be considered so as to understand the adult perspective without tapping into any middle-age issues.

Concerning *gender differences*, data show a higher prevalence of ADHD and greater symptom severity among males than females (ratio 10:1 among children, 2.73:1

among adults) (Williamson & Johnston, 2015). However, in Graziano and Garcia's (2016) meta-analysis, it was found that the link between ADHD and emotion dysregulation is similar in strength among boys and girls. With respect to age, on the contrary, it is possible to find more ADHD symptoms—specifically, hyperactivity and attention problems—in children and adolescents compared to adults. In addition, because children have less developed cognitive abilities and emotional skills, age could moderate the36ssociateon between ADHD symptoms and emotion dysregulation and regulation (Houdé & Borst, 2022; Loyer-Carbonneau et al., 2021). While the previously discussed meta-analyses did not find a moderating role of age, examining a wider scope of developmental ages, that is, from childhood to young adulthood, may yield novel results in this regard.

Apart from demographic variables, *sample type* may be considered. For instance, an analysis based on clinical samples may demonstrate different findings from that based on non-clinical samples, as the former may very likely have higher levels of symptoms than the latter (Lin & Gau, 2019; White et al., 2017); therefore, the relationships with ER and emotion dysregulation may be stronger or weaker, as compared to other cognitive factors (i.e., deficits in executive functioning). This differential association has been observed in meta-analytic studies focusing on other problems (e.g., Prefit et al., 2019; disordered eating and ER strategies more strongly linked in clinical samples as compared to non-clinical samples).

Furthermore, the *research methodology* may moderate the relationship between ADHD and emotion (dys)regulation, where longitudinal studies may yield different outcomes than cross-sectional studies. Longitudinal research has an additional temporal aspect that can explain symptoms over time. Nevertheless, previous meta-analyses have found that cross-sectional studies are more commonly used, giving insight into the

comparison of two groups that may not be possible in longitudinal studies (e.g., Bean et al., 2022; Chodura et al., 2021; Compas et al., 2017). However, examining or reporting ADHD and emotion (dys)regulation concurrently may more easily lead to the observation of a strong association between them. In this study, we will also include longitudinal studies, considering the baseline to avoid treatment effects, that may skew the relationship between ADHD and emotion (dys)regulation.

The *type of measurement* may influence the relationship between ADHD and ER. The use of different types of assessments can improve accuracy, but this is not always the case across all variables (Dang et al., 2020). Whether with regard to ADHD or emotion (dys)regulation, different types of assessments might address symptoms that can yield a range on a rating scale or a more binary finding similar to diagnostic assessments. For example, diagnosis (in most cases, just by providing the positive vs. negative dichotomous outcome) will not tell us about the severity level as much as a rating scale might. Likewise, the stimulus type (i.e., objective measurement, such as behavioral outcomes and computer tasks, or more subjective reports) have also been observed to be relevant in examining ER across studies (e.g., Brady et al., 2018).

Other than assessment, another potential moderator may be *rater or informant bias*. Previous research (e.g., Aldridge et al., 2017; Fletcher, 2021; Myford & Wolfe, 2003) shows that there are quality differences between different raters, which impacts measurements. Whether it is rater bias, effects, or errors, they have yielded varied results in different fields, such as medicine and education. Sometimes, questionnaires or scales try to accommodate the rater bias. ADHD diagnosis made by clinicians or informed by education professionals (sometimes complemented by parental reports) accurately account for behavioral signs and symptoms (Colomer et al., 2020; Varma & Wiener, 2020). Still, there is a barrier to what we perceive of another individual's internal

cognitive and emotional processes, such as ER (Frick et al., 2020; MacCormack et al., 2020). Therefore, as self-reporting involves better access to internal states that are not easily perceived from the exterior, present in some specific ER strategies (e.g., reappraisal, rumination), a stronger association between ER and ADHD symptoms would be expected when the informant is the self as compared to another person (e.g., parents, teachers, and clinicians).

Present Meta-Analysis: Objectives and Hypotheses

While the link between ADHD and emotion dysregulation has been examined (e.g., Graziano & Garcia, 2016), further exploration including ER is required. This would undoubtedly provide clinicians and future researchers with tools to better identify ER and dysregulation strategies for classification and treatment.

The primary objective of this meta-analysis is to examine the associations of ADHD symptoms with emotion (dys)regulation manifestations in children, adolescents, and adults. The secondary aim is to explore how different moderators (i.e., sample types, assessment measures, and study types) affect their relationship.

From the evidence reviewed here and particularly previous meta-analytical integrations (i.e., Beheshti et al., 2020; Graziano & García, 2016), we propose:

- Hypothesis 1: ADHD symptoms are negatively correlated with functional ER strategies (e.g., reappraisal) and positively correlated with emotion dysregulation (e.g., rumination, suppression).
- Hypothesis 2: Direct and indirect forms of ER are negatively associated with ADHD forms, with stronger effect sizes observed among direct forms.
- Hypothesis 3: The associations between ADHD forms and emotion dysregulation and regulation do not vary considerably across sex and age.

- Hypothesis 4: There are differences in the magnitude of the associations across sample types (clinical vs. non-clinical), with ADHD symptoms more strongly linked to emotion dysregulation in clinical samples.
- Hypothesis 5: Effect sizes are weaker when the evaluators are the parents or caregivers (other-report) compared to self-evaluation.

Method

Procedure

Following the Meta-Analysis Reporting Standards (American Psychological Association, 2008) and Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (Moher et al., 2015), we conducted a systematic internet-based search using six electronic databases (PsycINFO, ScienceDirect, PsycArticles, ProQuest Central, PubMed, and Web of Science). The literature search was terminated in December 2019. The Boolean expression used for the search was: [ADHD OR Hyperactivity OR Inattentiveness OR Externalized behavior OR BASC OR Child Behavior Checklist (CBCL) OR hyperactivity/inattention subscale (HI) OR Strengths and Difficulties Questionnaire (SDQ) OR ADHD questionnaire (SNAP-IV) OR SCL-90 OR Conners Rating Scale)] AND [(Emotion Regulation OR Emotion Regulation Strategies OR Emotion Dysregulation OR Self-regulation OR Adaptive strategies OR less Adaptive Strategies OR Maladaptive Strategies OR reappraisal OR distraction OR rumination OR suppression OR venting OR discharge OR ERQ OR MARS OR DERS OR WOC OR PSQ OR COPE)].

Inclusion and exclusion criteria, and final sample

Studies were eligible for inclusion when they fulfilled all the following criteria: (a) empirical studies providing at least one correlation or beta coefficient (or other statistics that allow for effect size calculation or conversion) between ADHD and a form

of emotion (dys)regulation; (b) inclusion of either a direct measure of ADHD and direct emotion (dys)regulation strategies (i.e., methodological and quantitative measures related to ER and ADHD), or indirect measures of ADHD and emotion (dys)regulation strategies (i.e., not specifically asking about ADHD or ER, but being a quantitative measure); (c) samples including children, adolescents, and youth, specifically covering those aged up to 30 years; and (d) written in English, German, French, Dutch, Spanish, Italian, or Arabic.

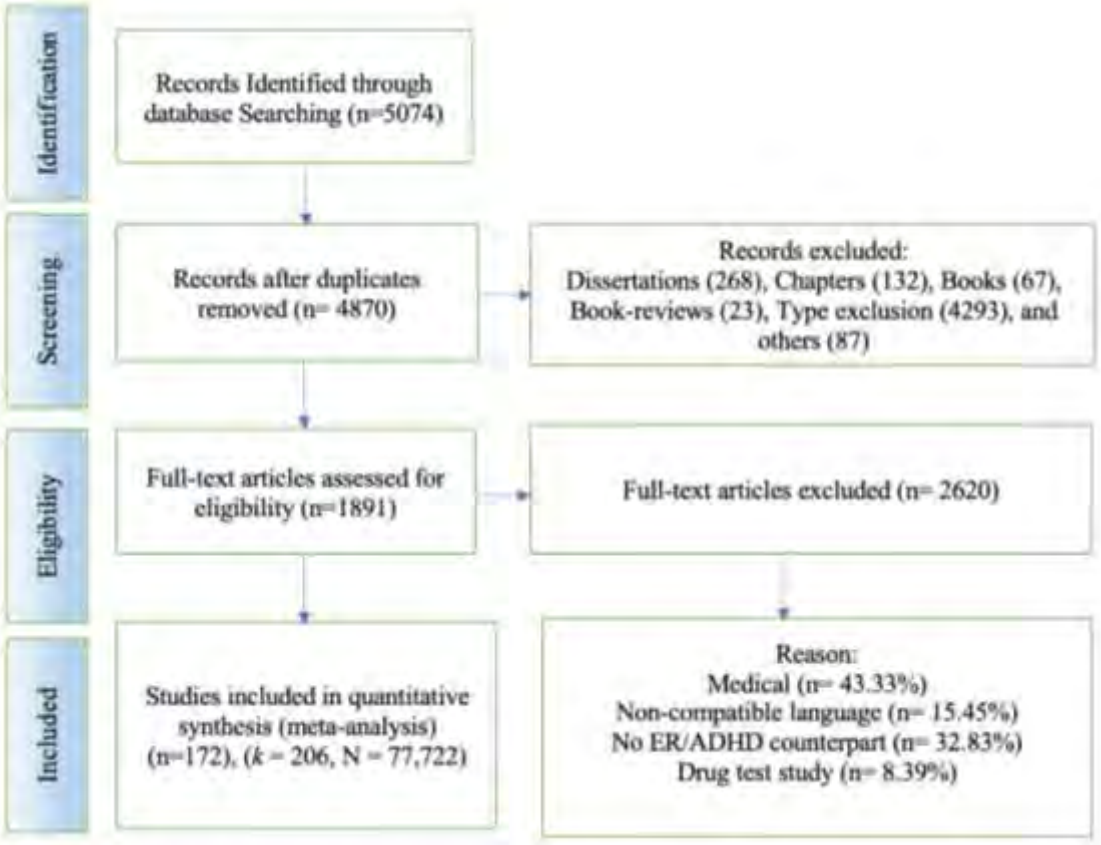
The exclusion criteria targeted studies that only included participants above 18 years old, and those that did not use questionnaires or assessment batteries addressing the use of ER strategies and ADHD characteristics. Book chapters, theoretical articles, genetic studies, and studies with samples from uncontrollable environments, for instance, inmate studies, were excluded. In addition, interview-based, neuroimaging, and biofeedback studies were excluded unless they used quantitative assessment tools specific to ER strategies and ADHD-related behavior. Sample type was not an exclusion criterion (i.e., studies with both clinically diagnosed and normative samples were included), but rather a target moderator variable.

The original number of records identified through the literature search was 5,074 (Figure 1). After removing duplicates, 4,870 records remained. The following records were excluded based on the document type criterion: dissertations (268), chapters (132), books (67), book reviews (23), and others (87, such as comments or replies, corrections, and column opinions). The remaining 4,293 records were analyzed (for type exclusion) by four independent coders. For this purpose, an iterative process was carried out in an initial stage to set up the criteria and reach agreement in the decisions. Of the records, 2,402 were excluded owing to misclassification (e.g., being a review or theoretical study), experimental manipulation (therapy, drugs, etc.), or not being related to the topic; 2,620

were eliminated because they were medical studies (43.33%; studies centered on neuroimaging, genetics, and medical procedures), did not have a sample whose outcomes could be easily generalized (32.83%; individuals with a chronic physical or mental condition, admitted to hospitals or other health institutions, incarcerated, etc.), were conducted in a language other than Arabic, English, Spanish, or German (15.45%), or because they were centered around testing a particular drug or medication (8.39%).

Figure 1

Flowchart of the studies identified and selected, following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines.



The final selection included 172 independent studies (k = 206) gathering a total sample of N = 78,045 (with study N-weighted mean age and standard deviation, M = 14.58 and SD = 3.31). The samples were from 25 countries and 10 world regions, including North America, Europe, Asia, and Oceania. The studies utilized cross-sectional,

experimental, and longitudinal designs and different forms of ADHD assessments (e.g., inattentiveness and hyperactivity). Descriptive characteristics of all studies can be found in the supplementary materials at the end of this chapter (Table S1).

Study Codification

We developed a coding scheme based on Lipsey and Wilson's (2001) guide. It was used to record authors' names, year of publication, sample size, study design, measurement of ADHD, type of ER, measures of dependent variables, and effect sizes. For the moderation analyses, we considered the type of ADHD measures (direct/indirect), type of dysregulation (direct/indirect), and dysregulation versus regulation. The team of independent coders held several meetings to classify the variables for the description and moderation of each study. A previous stage involved the discussion of any study that could potentially be coded into two different categories for any variable.

Associated Variables

The variables included in this meta-analysis stem from ADHD symptoms, inattention, and hyperactivity. Having attention problems, hyperactivity, or the combined manifestation of attention problems and hyperactivity were taken as variables related to ER and emotion dysregulation. These variables, distinguishing between direct and indirect symptoms and emotion (dys)regulation strategies, are as follows.

***ADHD and its measures*.** Usual measures of symptoms included the self-rated Barkley Adult ADHD Rating Scale (Barkley, 1998), and for children, the Behavior Assessment System for Children, Second Revision (Reynolds & Kamphaus, 2004), ADD-H Comprehensive Teacher Rating Scale (Ullman et al., 1991), and the German Kiddie Schedule for Affective Disorders and Schizophrenia (Kaufman et al., 1997). Additionally, the structured computer-based Diagnostic Interview Schedule for Children-IV was frequently used. Indirect ADHD variables were taken from studies that did not

focus specifically on ADHD but on similar symptoms related to hyperactivity and inattentiveness, for example, concentration and forgetfulness (Clinical Interview Schedule-Revised) (Lewis et al., 1992).

***ER and its measures*.** Measures of ER were the Ways of Coping Checklist (Lazarus & Folkman, 1984), which measures different strategies, and the ER Questionnaire (Gross & John, 2003), measuring reappraisal and suppression. An observational measure was the ER Checklist (Shields & Cicchetti, 1997). Measures of emotion dysregulation usually included the Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004) and the Behavior Rating Inventory of Executive Function (Gioia et al., 2002). Direct ER strategies were taken from studies that directly investigated the strategies or addressed the use of a regulatory strategy for emotional expression. The indirect form is a variable that can indirectly represent a way to regulate an expression of emotion. For example, an observed variable can be taken from disruptive behavior as a form of being dysregulated. Another indirect form is a questionnaire measuring, for instance, social skills (e.g., Social Skills Rating Scale; Bunte et al., 2013) or observed self-regulatory tasks in early childhood (Meeuwsen et al., 2019).

Moderators

The demographic moderators were gender, age, and country. The associations between ER strategies and ADHD may differ according to sex and age.

The assessment type moderator refers to behavioral assessments and ER strategy assessments. Some types of assessment, such as interviews, may not be relevant to our search as they may not demonstrate the scope of understanding the scaling of levels of severity of ADHD and quantifiable levels of ER strategies. On the contrary, questionnaire and assessment batteries may have clearly quantifiable data that can help assess the associations between ADHD severity and ER strategies. Thus, we did not use qualitative

modes of assessing ADHD. In some cases, a compounded variable was derived from assessment batteries that included several variables, for example, the ADHD index that takes inattentiveness and hyperactivity as a single value.

The sample type moderator was set to be clinical ADHD samples; non-clinical (e.g., control normative groups) samples; and clinical and comorbid samples. Different sample types may relate differently to ADHD and ER strategies; for example, in samples that have been pre-diagnosed with ADHD in inpatient care, there may be a stronger relationship with ADHD symptoms and maladaptive ER strategies. Different types of samples may demonstrate interesting relationships; for example, a sample that has been recently discharged from the inpatient ward or from a substance dependency recovery program.

Methodology moderators considered the type of design, such as cross-sectional, longitudinal, and experimental. This is because different designs may demonstrate different relationships among the variables of interest.

Depending on the rater, included categories were as follows: self-report or other-report (i.e., parent-reported, teacher-reported or clinician-reported).

Culture moderators took into consideration the differences between conservative and individualistic cultures. This moderator helped determine if more individualistic cultures are more strongly related to ADHD and emotion dysregulation strategies. Variations in cultures across regions may lead to differences in the levels of expressiveness that are considered socially acceptable, leading to differences in what behavior is considered “dysregulated.”

Publication moderators included publication bias, where some articles could not be included owing to null effects. Published results may increase the likelihood of being identified and included in the meta-analysis compared to unpublished articles.

Self-report and other-report have been found to have differences; generally, self-report is more reliable when it comes to studies on personality (Olino & Klein, 2015). A meta-analysis (Kim et al., 2019) investigated the concern that self-report may entail protective motives and response bias, distorting personality assessments. Their moderator analyses demonstrated moderate discrepancies between self-report and other-report. Self-report was considered more accurate than other-report, especially with strangers as compared to with acquaintances; this is because strangers are likely to be more critical. In this meta-analysis, other-report encompasses assessments by parents/teachers and clinicians.

Statistical Analyses

We used Person's *r* as a measure of effect size owing to its simplicity and calculated it whenever possible, such as from intergroup comparisons (i.e., *F*, Student's *t*, eta squared, odds ratios, and regression betas). The transformations were conducted with several resources freely available online (e.g., DeCoster, 2012; Lenhard & Lenhard, 2016). Subsequently, we aggregated effect sizes and conducted all the analyses with the *metafor* package (Viechtbauer, 2015) for R (R Core Team, 2014) with RStudio (RStudioTeam, 2015), following the guidelines proposed by Rosenthal (1979), Hunter and Schmidt (2004), and Cumming (2013). Some studies reported more than one effect size. In such cases, we selected a maximum of two per study, and that was only if there was a separate manifestation of emotion dysregulation and regulation. This selection was conducted because otherwise, independent assumptions of observations could not be met (Lypsey & Wilson, 2001).

Publication bias and robustness

To evaluate indications of publication bias, we conducted Egger's regression tests (Egger et al., 1997) and fail-safe *N* tests (Rosenthal, 1979) (see Rubio-Aparicio et al.,

2018). Egger's regression is a statistical test determining whether there is an asymmetrical relationship between effect sizes and standard errors. Significant values for this test (i.e., asymmetry in the funnel plot) indicate possible publication bias.

Regarding fail-safe *N* tests, they represent how many new—or missing—studies with a zero effect size would be needed to transform a significant *p*-value into a non-significant one (see Borenstein et al., 2009). As an overall rule, Rosenthal (1979) suggested a fail-safe *N* value above 5 k + 10, which would reflect results that are tolerant to contradictory studies, where k is the number of studies included in the meta-analysis.

Data analysis included

All analyses concerning random-effects meta-analyses of the correlations between collective effervescence and the criterion variables, as well as moderation analyses and Egger's regression tests, were conducted with RStudio. The 95% confidence interval and mean rho effect size are indicators of the validity of the magnitude of the effect.

Homogeneity among studies was assessed using various indicators such as the *Q*-test (Cochran, 1954), I^2 statistic (Higgins & Thompson, 2002), and τ^2 as they provide a comprehensible assessment of the possibility of identifying heterogeneity and its implications. The *Q*-test assesses whether the distribution of effect sizes around the mean is wider than predicted based on sampling error alone; therefore, it provides evidence to employ a random-effects model. The I^2 statistic describes the percentage of variation between studies due to heterogeneity and not chance (i.e., the percentage of true variability). Finally, the τ^2, together with its standard error, indicates the absolute value of the true variance (i.e., heterogeneity). For this reason, this last analysis can be considered the real significance of the variability, as it presents the value in terms of the effect size scale.

To compare the reported effects, we adopted the following criteria: effects of up to $r < .18$ were considered small, effects of $r = .18$ to .32 were considered medium, and $r > .32$ was considered indicative of a large effect. These criteria were adopted because they avoid the limitations faced by Cohen's (1977) qualitative guidelines (see Gignac & Szodorai, 2016; Correll et al., 2020; Funder & Ozer, 2019; Hunter & Schmidt, 2004), according to which a low or lower-quartile effect is $< r = 0.11$, between .12 and 0.19 is a lower-middle quartile, between .20 and .29 is an upper-middle quartile, and > .29 is high. The equivalents for the correlation corrected for attenuation or measurement error were respectively rho = <.16, .17 to .25, .26 to .37, and ≥ .38 (Gignac & Szodorai, 2016; Lipsey & Wilson, 2001). They are considered more realistic according to meta-analytical reviews.

Results

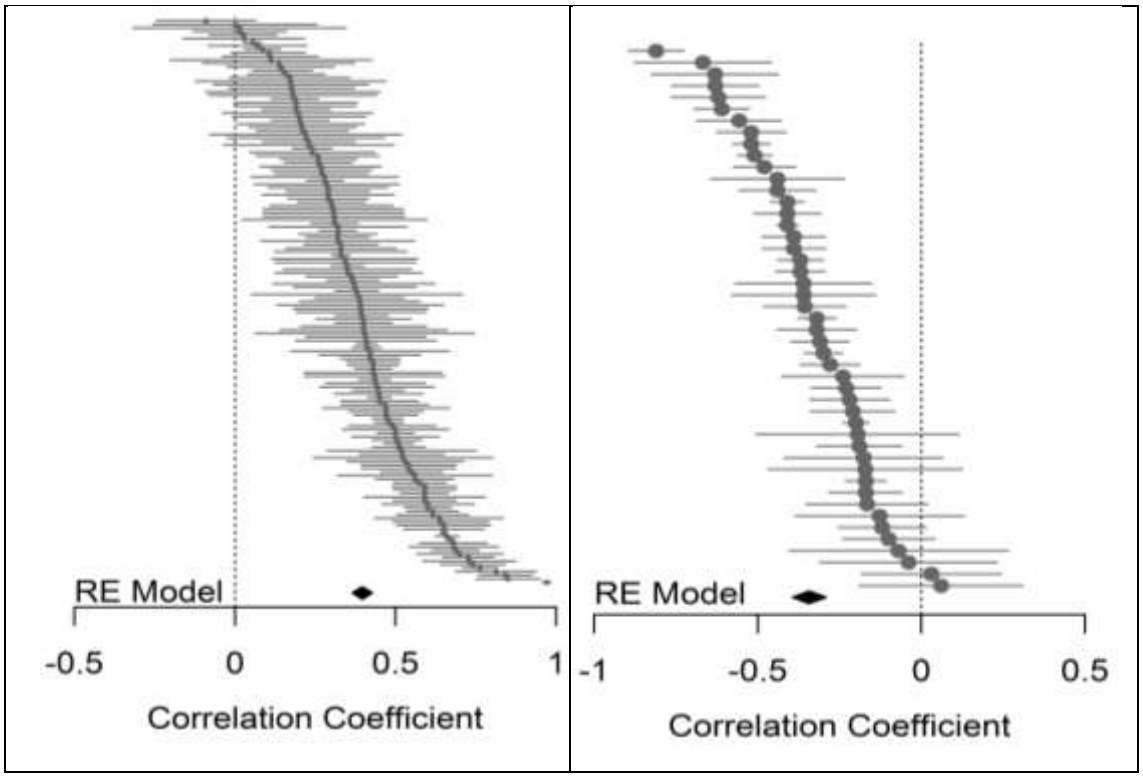
From a total sample of 172 studies ($k = 206$, $N = 77{,}722$; average age of $M = 14.30$, $SD = 2.08$; average male proportion of 34.69%; and a total of 206 effect sizes), we will report the results of the effects of ADHD on emotion dysregulation and regulation separately. In addition to the main effects on ER, we will report the pooled effect sizes using deductive approaches from greater to more specific, according to relevant information from the included studies. First, we organized a classification of the data consisting of a 2 (ER valence: dysregulation vs. regulation) x 2 (type of ER: direct vs. indirect) model.

Main Effects

The main effects showed that ADHD was significantly correlated with greater emotion dysregulation: r_{pooled} = 0.397 [0.366, 0.427]; $Q_{(158)}$ = 7600.50, p < .001; I^2 = 96.15% (k = 159, N = 61140), as well as to lower functional ER[1]: r_{pooled} = -0.343 [-0.395, -0.291]; $Q_{(46)}$ = 500.86, p < .001; I^2 = 92.87% (k = 47, N = 16582)[2] (Figure 2).

Figure 2

Caterpillar Plots for the Effects of ADHD on Emotion Dysregulation (left) and Regulation (right).



Note. Bars represent 95% CI of correlations. Effects on Emotion Dysregulation (r_{pooled} = .397) involved k = 159 and N = 61,140. Effects on Emotion Regulation (r_{pooled} = -.343), k = 47 and N = 16582.

[1]Dysfunctional forms of ER were inverted. A higher score indicates higher functional ER.
[2]The τ^2 and their standard errors were 0.032 (0.004) and 0.027 (0.006) for the association with emotion dysregulation and regulation, respectively. In both cases, there was indication of asymmetry in the funnel plot (test for funnel plot asymmetry: z = -4.490, p < .001, and z = 2.598, p = 0.009, respectively) and both analyses were very robust; fail-safe Ns were 738901 and 37305 for the association with emotion dysregulation and regulation, respectively.

Direct and Indirect ER Forms

Considering the manifestations of ER forms (i.e., direct and indirect), further analyses indicated that this overall tendency held. In detail, when only analyzing direct methods (e.g., specific ER questionnaires) to evaluate ER forms, ADHD was significantly correlated with dysregulation (r_{pooled} = 0.414 [0.373, 0.456]; $Q_{(85)}$ = 4759.63, p < .001; I^2 = 95.99%; k = 86, N = 30309)[3] and regulation forms (r_{pooled} = -0.318 [-0.396, -0.239]; $Q_{(25)}$ = 277.33, p < .001; I^2 = 91.81%; k = 26, N = 7094).[4] In the case of emotion dysregulation, the association was stronger for direct forms (total dysregulation effects were .42 and .39 for direct and indirect forms, respectively). This was not the case for ER (total regulation effects were -.33 and -.38 for direct and indirect forms, respectively).

We examined the specific association of ADHD with regulation strategies. In nine studies (N = 5,709), rumination and ADHD showed a significant random correlation coefficient (r_{pooled} = 0.313 [0.187, 0.439].) In 14 studies (N = 1,939), there was a significant negative correlation coefficient between ADHD and positive reappraisal (r_{pooled} = -0.267 [-0.359, -0.174]). In four studies, there was a significant association between suppression and ADHD (r_{pooled} = 0.076 [0.003, 0.049]), but the random coefficient was not significant.

[3] τ^2 (standard error) = 0.032 (0.005). There is indication of asymmetry of the funnel plot (z = -2.802, p = 0.005) and a very robust result (fail-safe N = 262192).
[4] τ^2 (standard error) = 0.034 (0.011). There is no indication of asymmetry of the funnel plot (z = 1.214, p = 0.225) and a very robust result (fail-safe N = 6789).

Table 1

Emotion Dysregulation and Regulation, Direct and Indirect ER, and Sample

ER Valence	Type of ER	Sample	*k*	*N*	Pooled Effects	Heterogeneity			Bias and Robustness	
					r_{pooled} [95% CI]	$Q_{(df)}$	I^2	τ^2 (*SE*)	Egger test	Fail-safe *N*
Dysregulation	Direct	Only ADHD	18	3178	0.369 [0.284, 0.454]	$Q_{(17)} = 113.36^{***}$	85.07	.026 (.011)	z = 0.057	3065
		Non-clinical	60	25952	0.426 [0.380, 0.471]	$Q_{(59)} = 1413.63^{***}$	95.05	.027 (.006)	z = 2.194*	126786
	Indirect	Only ADHD	7	1455	0.304 [0.168, 0.440]	$Q_{(6)} = 44.16^{***}$	85.27	.026 (.018)	z = -1.808	465
		Non-clinical	51	28205	0.395 [0.341, 0.450]	$Q_{(50)} = 2316.25^{***}$	96.33	.034 (.008)	z = -1.865	83540
Regulation	Direct	Only ADHD	2	120	-	-	-	-	-	-
		Non-clinical	16	25952	-0.330 [-0.418, -0.241]	$Q_{(15)} = 111.55^{***}$	91.05	.027 (.011)	z = -0.447	2928
	Indirect	Only ADHD	0	0	-	-	-	-	-	-
		Non-clinical	20	9431	-0.383 [-0.446, -0.320]	$Q_{(15)} = 178.96^{***}$	91.73	.017 (.007)	z = 2.005*	12108

Note. The symbol '-' indicates the lack of minimal criteria to perform the analyses (i.e., $k = 3$) and therefore, the analyses are not conducted.
$^{*}p = .05$, $^{**}p = .01$, $^{***}p = .001$.

Moderation Analyses

First, we sought to compare the effect sizes between ADHD-only and non-clinical samples. The frequency analysis showed that the only possible comparison was between ADHD-only and non-clinical samples, including clustering those using a dysregulation strategy of "response" in a 2 (type of ER: direct vs indirect) x 2 (sample: only ADHD vs non-clinical) model. All pooled effects (along with assessments of biases and robustness) are displayed in Tables 1 and 2.

Additionally, we conducted the main association analyses (i.e., ADHD and dysregulation and regulation separately) to analyze how the main effect varied across a variety of characteristics: sample type, study design, ADHD measurement, ER measurement, and rater (all in Table 2).[5]

The results revealed that only in a couple of cases (i.e., ER strategy and measurement) were there significant differences between the levels of the moderators. Regarding Gross' (2015) model, when ER was measured globally (i.e., including situation modification, attentional and cognitive change, and response modulation), the effect size was higher, as compared to specific measures considered separately. Concerning ER measurement, effect sizes were lower for observational and performance-related measures and stronger for disruptive behaviors and emotional lability.

[5]All *QE* tests had significant values, indicating that while the analyses indeed decreased levels of heterogeneity, after the moderation, there were still significant levels of heterogeneity. In addition, by analyzing the pooled effects of each level from each moderator, it could be seen that they a) were all in the same direction of the main analyses and b) were all significant at $p < .05$.

Table 2

Moderation Analyses for the Association of ADHD and Emotion Dysregulation and Regulation.

	Emotion Dysregulation					Emotion Regulation				
Moderator and levels	*k*	*N*	r_{pooled} [95%CI]	*QE* (*df*)	*QM* (*df*)	*k*	*N*	r_{pooled} [95%CI]	*QE* (*df*)	*QM* (*df*)
Type of sample				648.43(2)***	2.350 (2)				181.52(2)***	0.111(1)
Clinic and comorbid	23	2350	0.372 [0.289, 0.454]			9	1369	-0.336 [-0.455, -0.216]		
Non-clinical	111	54157	0.411 [0.375, 0.448]			36	15093	-0.358 [-0.415, -0.301]		
Only ADHD	25	4633	0.350 [0.271, 0.429]			-	-	-		
Study design				647.08(4)***	1.965(3)				162.78(3)***	0.570(2)
Cross-sectional	67	30528	0.418 [0.372, 0.464]			32	14171	-0.342 [-0.405, -0.280]		
Cross-section between groups	31	10559	0.367 [0.296, 0.437]			7	894	-0.384 [-0.527, -0.241]		
Experimental	37	2899	0.398 [0.331, 0.465]			-	-	-		
Longitudinal[1]	24	17154	0.371 [0.294, 0.448]			7	1456	-0.308 [-0.444, -0.172]		
ADHD measurement				618.30(3)***	2.08(2)	-	-	-	162.54(3)***	3.32(2)
Attention	5	1766	0.274 [0.102, 0.447]			-	-	-		
Diagnostic	41	4484	0.384 [0.324, 0.445]			6	928	-0.222 [-0.376, -0.069]		
Externalizing	-	-				4	2564	-0.284 [-0.463, -0.105]		
Rating scale	82	29989	0.401 [0.364, 0.438]			28	10570	-0.365 [-0.425, -0.306]		
ER strategy				671.56(2)***	8.35(2)*				181.09(2)***	1.34(1)
General	73	21331	0.445 [0.401, 0.489]			36	12536	-0.370 [-0.428, -0.313]		
Attention deployment and cognitive change	15	6327	0.357 [0.256, 0.459]			-	-	-		
Response modulation	69	33321	0.355 [0.309, 0.401]			8	3537	-0.292 [-0.411, -0.173]		
ER measurement				723.59(5)***	19.92(5)***				207.05(1)***	3.69(1)
Behavior coded	8	2767	0.265 [0.138, 0.392]			-	-	-		
Computer task	26	2306	0.296 [0.218, 0.373]			-	-	-		
Disruptive behaviors	35	25124	0.441 [0.380, 0.502]			-	-	-		
Emotional Self-control	66	22399	0.415 [0.371, 0.460]			25	7032	-0.332 [-0.399, -0.265]		
Emotional lability	12	1433	0.517 [0.411, 0.623]			-	-	-		
Socioemotional skills	-	-	-			15	8747	-0.434 [-0.514, -0.354]		
ER rater				641.15(1)	1.02(1)				165.75(2)	0.073(1)
Self	93	36566	0.383 [0.342, 0.424]			29	10663	-0.349 [-0.416, -0.281]		
Other	66	24574	0.415 [0.368, 0.462]			18	5919	-0.334 [-0.417, -0.252]		

Note. QE(df) indicates the *Q* test of the residual heterogeneity test (i.e., after the moderation) and its degrees of freedom; *QM*(*df*) indicate the Q test of comparison between the effect sizes between the levels of the moderator and its degrees of freedom. Cells with a "-" represent levels of the moderator with less than 4 studies and excluded from the analyses. [1], In longitudinal studies, data was included from the first time in measurement, usually, before the application of a treatment. $^{*}p = .05$, $^{**}p = .01$, and $^{***}p = .001$.

Meta-Regression Analyses

Finally, we conducted several meta-regression analyses to assess different quantitively measured variables that could affect the association between ADHD and ER, while controlling for the mean age and the proportion of males. We repeated some previously conducted moderation analyses comparing categories to determine robustness. In addition, we added age and sex (i.e., the proportion of males in the sample) as control variables in all analyses.

Meta-Regression on the Effects on Emotion Dysregulation

First, we created separate models for the association of ADHD and emotion dysregulation and regulation, including the proportion of males and the mean age across the studies as a baseline model. Studies with missing information on these variables were excluded from subsequent analyses. When assessing only emotion dysregulation (k = 118, N = 35,119), neither the proportion of males nor the median age moderated its association with ADHD (Bs = -0.0004 and 0.0033, respectively; p > .27).

Regions, type of sample, and rater. We conducted further analyses based on geographical region. We used the following regions with a minimum of k = 4: North America (k = 48), Europe (k = 25), Northern Europe (k = 8), and Western Asia (k = 6). Analyses showed that, when including each level as a dummy-coded variable, the inclusion of each region moderated the effects of ADHD on emotion dysregulation (the largest effect was for Northern Europe, B = .44, and the smallest for Western Europe, B = .41; ps < .001).

In the case of sample type, there were clinical and comorbid (k = 12), non-clinical (k = 60), and clinical samples with only ADHD (k = 15). Each level (dummy coded) moderated the main relationship in a significant way, showing the smallest effect in the

clinical and comorbid samples (B = .32, p < .01) and the largest in the non-clinical one (B = .39, p < .001).

Finally, we evaluated the possible effects of the rater of the ER measure: self-rated (k = 71), parents/caregivers (k = 30), or other-rated (e.g., pediatrician, teachers, etc.; k = 17). Here, every level moderated the relationship (ps < .001), and parents/caregivers showed the largest effects (B = .44), while self-report had the smallest effects (B = .36).

Meta-Regression on the Effects on ER

When assessing the possible moderating effect on ER (k = 39, N = 15069), in the baseline model (i.e., solely with the proportion of males and mean age), neither of the variables had a significant effect in the relationship between ADHD and ER (Bs = 0.0007 and -0.0027, respectively; p > .47).

Regions, type of sample, and rater. When focusing on the geographical regions to conduct further analyses, there were only two levels of the moderator: North America (k = 16) and Europe (k = 10). Both had highly similar effects (Bs = -.36, ps < .01). In the case of the type of sample, the levels were clinical and comorbid (k = 9) and non-clinical (k = 28). Analyses showed the strongest effects among non-clinical samples (B = .31, p < .001), compared to clinical and comorbid (B = .26, p < .05).

Finally, regarding the rater of the ER measure, there were self-rated (k = 24), parent/caregiver-rated (k = 4), or other-rated (k = 24), and the results indicated the same pattern as in the case of dysregulation: the strongest effects were for other-report (B = .37, p < .001) and the smallest for self-report (B = .29, p < .05).

Discussion

The current meta-analytic study was conducted to fill an important gap in the literature: to discover how attention and/or hyperactivity problems relate to both ER and dysregulation strategies, including possible moderators that explain such associations.

The results showed that ADHD symptoms were negatively correlated with ER (showing a high effect size: r = -.34) and positively correlated with emotion dysregulation (also showing a high effect size: r = .39), in line with Hypothesis 1 and with previous research. In fact, a previous meta-analysis (i.e., Graziano & García, 2016) found similar effect sizes in ADHD's relationship with ER (i.e., r = .37, or d = .80) among young children. As one may have expected, our effect sizes were similar to those of Graziano and García (2016) and strong, being in the highest quartile (Gignac & Szodorai, 2016). It is important to emphasize that this is the first meta-analysis that includes ER strategies.

Regarding ER strategies, ADHD was strongly associated with rumination and low reappraisal, but weakly associated with high suppression. Typically, those with mental health problems tend to use more maladaptive strategies, like rumination, and use reappraisal less (Blalock et al., 2016; Johnson et al., 2016; Werner et al., 2011). These strategies are cognitive-based; cognitive control (such as executive functions) has been reported to be related to ADHD, and improvements in cognitive control are associated with moderate improvements in attention shifting (Varigonda et al., 2020). Our results suggest that ADHD is mainly related to deficits in the capacity to shift attention and thinking from negative emotions, as well as to reorient attention and thinking in a positive manner (Christiansen et al., 2019). These findings are supported by Christiansen et al.'s (2019) review showing that across the lifespan of people with ADHD, difficulties in cognitive control overlap with trouble with emotional and behavioral control. Although information for other strategies was not reported in the meta-analyzed studies, we did find that ADHD forms were related to emotion dysregulation.

Age and sex did not moderate the association between ADHD and dysregulation and regulation. Our results are, therefore, in line with those of Graziano and Garcia (2016) and Beheshti et al. (2020), who failed to identify sex differences in their meta-analyses.

Likewise, not observing age to be a moderator in the association between ADHD symptoms and emotion dysregulation and regulation is compatible with the aforementioned two meta-analyses. Although our scope was wider and we were able to cover an ample range of ages—that is, from childhood to young adulthood—the results seem to confirm the general trend regardless of developmental stage. It must be noted that we did not consider adults in the comparison. Yet, a meta-analysis regarding possible changes in ER strategies across adulthood (Brady et al., 2018) found few age-related differences despite having a more dynamic context (induction vs. mere baseline) of ER assessment.

Contrary to our expectations, we found weaker associations between ADHD symptoms and emotion dysregulation in the clinical samples, suggesting an "unfamiliarity effect" either in the expression or recognition of the symptomatology of ADHD among non-clinical samples (Fan et al., 2022; Wilshire et al., 2021). In the case of clinical patients, conversely, it is possible that their greater knowledge of the whole spectrum of symptomatology can lead to better coping and, as a result, show weaker associations. However, considering the differences in samples across groups and the greater amounts of unexplained heterogeneity among non-clinical participants, which suggests that there may be other unexplored factors that can further affect the relationship between the variables, further examination is required.

In addition, the effect sizes for dysregulation and regulation were higher for other-report (e.g., parents/caregivers and teachers) as compared to self-report, in line with Graziano and Garcia (2016). A possible explanation is that parents' ratings display a sort of halo effect (Alacha & Lefler, 2021), showing convergence or congruence between measures. On the one hand, individuals are probably relatively accurate in self-judgment, but display self-enhancing reactions eroding the association between symptoms and

regulation. On the other hand, the links between measures self-reported by individuals with ADHD may be weaker owing to their lack of understanding of their condition (Dang et al., 2020) or the so-called positive illusory bias, with children/adolescents reporting symptoms reflecting more positively on their competencies than their parents' (Barkley et al., 2002; Fefer et al., 2018; Hoza et al., 2000; Sibley et al., 2017, 2010). Likewise, lower levels of understanding emotions are associated with ADHD (Climie et al., 2019). As the two possible explanations may be true, designs to unequivocally answer the question should be taken into consideration in future studies.

Limitations

This study is not without limitations. First, the degrees of freedom were too low for some age groups, which did not allow for meta-regression analyses. Another limitation is that studies did not report certain parameters or descriptive data that may have helped categorize them. For instance, it was not always possible to have separate data for clinical and non-clinical groups. As that was a moderator, the true effect of the meta-regression was somehow biased. Another limitation is the diverse use of terminology and the conceptualization of emotion (dys)regulation; many different constructs and processes may constitute emotion (dys)regulation (Cole et al., 2019; Lincoln et al, 2022). This may result in missing data or inaccurate representations in future reviews and studies. Similarly, ADHD symptoms may not be clear enough in the considered diagnostic manuals as symptoms differ in adulthood and require further investigation to avoid misdiagnoses (Johnson et al., 2021). Examining emotion (dys)regulation through the scope of ADHD symptoms may provide a better understanding and give us an enhanced view of externalized problems.

General Conclusion

In conclusion, functional ER is associated with lower ADHD symptoms, and the opposite is true for dysregulation. Future implications are directed at helping parents and teachers recognize what healthy ways of regulating emotions look like, and that when children and adolescents do not possess ER strategies, it can seem like a lack of attention or the inability to sit still. Normalizing the incorporation of ER strategies into early development practices may help avoid long-term symptoms of ADHD or other disorders.

The goal of this paper was to address the issue that emotion dysregulation and regulation strategies may be a good way to understand. Embracing a transdiagnostic perspective that takes emotion dysregulation into account (Abdi & Pak, 2019; Beauchaine & Cicchetti, 2019; Cludius et al., 2020; Sloan et al., 2017) would improve clinicians' assessment accuracy regarding hyperactivity and inattentiveness. This meta-analysis is a step toward a clearer and broader scope of the picture.

Supplementary Table S1

Summary of Studies Included in the Review

Authors	*N*	% of female	Sample Type	ADHD Variable	ADHD Type	ADHD Scale	ER Strategy	ER Family	ER Scale	Informant	Location
Abramovitch & Schweiger, 2009	54	0.00	NC	ADHD	D	DSM-IV	Anxious-intrusive thoughts	ATT & COG	DTQ	S	Israel
Abulizi et al., 2017	1184	47.13	NC	Hyp/Inatt	RS	SDQ	Conduct problems	Res	SDQ	O	France
Alpaslan et al., 2015	80	25.00	NC	ADHD	RS	CAARS-T	Conduct problems	Res	CAARS P/T	O	Turkey
Alperin et al., 2017	109	26.61	NC	ADHD	RS	CAARS & KSADS-PL	Reaction time	Res	E-GNGT	S	
Anastopoulos et al., 2011	358	39.11	ADHD	ADHD	D	C-DISC-IV	EL	Gen	CRS-R	O	USA
Aro et al., 2014	185	48.65	NC	AEF	A	ATTEX scales	IRE	Gen	SSRS	S	Finland
Asherson et al., 2015	3675	43.90	NC	ADHD	RS	CAARS-S-R	EC	Gen	BRIEF-AS	O	UK
Barkley, 2013	1922	0.00	NC	ADHD	D	Child ADHD-RS-IV	ER	Gen	DEFS	S	USA
Beauchaine et al., 2013	99	24.24	ADHD	Inatt	RS	CPRS–R	Aggression	Res	Externalizing symptoms	S	USA
Becker et al., 2020	302	44.70	NC	Inatt	RS	ASRS	EDYSREG	Gen	DERS	S	USA
Berlin et al., 2004 (1)	62	0.00	NC	ADHD	RS	ADHD-RS-IV	SR of Affect	Gen	GNGT	S	Sweden
Berlin et al., 2004 (2)	53	100.00	NC	ADHD	RS	ADHD-RS-IV	SR of Affect	Gen	GNGT	S	Sweden
Blaskey et al., 2008 (1)	94	34.04	C+C	ADHD	D	CAARS-A & DSM-IV Interview	Reaction time	Res	Stop task	S	
Blaskey et al., 2008 (2)	67	44.78	C+C	ADHD	D	CAARS-A & DSM-IV Interview	Reaction time	Res	Stop task	S	
Braet et al., 2014	432	59.72	NC	ADHD	RS	CBCL	Giving up	Res	FEEL-KJ	S	Belgium
Breaux et al., 2018 (1)	61	50.82	NC	ADHD	E	DBD	EL	Gen	ERC	O	USA
Breaux et al., 2018 (2)	61	50.82	NC	ADHD	E	DBD	ER	Gen	ERC	O	USA
Brinksma et al., 2018	1306	49.62	NC	ADHD	RS	CBCL	Internalizing problems	Gen	CBCL	O	Netherlands
Brocki et al., 2020	72	16.70	C+C	Hyp/Imp/Inatt	RS	ADHD-RS-IV	EC	Gen	EQ	O	Sweden
Brown et al., 2012	36	0.00	C+C	ADHD & Bipolar	D	KSADS-PL	Reaction time	Res	N-BT	S	USA
Bruner et al., 2015 (1)	73	0.00	NC	ADHD	RS	ASRS	EDYSREG	Gen	DERS	S	USA
Bruner et al., 2015 (2)	116	100.00	NC	ADHD	RS	ASRS	EDYSREG	Gen	DERS	S	USA
Bunford et al., 2015	171	0.00	ADHD	ADHD	RS	P-ChIPS	EDYSREG	Gen	ERICA	S	USA
Bunford, Evans, et al., 2017	104	38.00	NC	Disruptive Behavior	RS	DBD	ER	Gen	ERC	S	USA
Bunford, Wymbs, et al., 2017	122	63.00	ADHD	Imp	RS	CAARS	EL	Gen	CAARS	S	USA
Bunford et al., 2020 (1)	978	51.00	NC	ADHD	RS	DBD P/T	EDYSREG	Gen	DERS-P	S	USA
Bunford et al., 2020 (2)	78	24.40	ADHD	ADHD	D	ADHD-RS-IV Home Interview	EDYSREG	Gen	DERS-P	S	USA
Bunte et al., 2013	251	20.00	NC	ADHD	D	K-DBDS	SS	Res	SSRS	O	Netherlands
Cackowski et al., 2014	65	100.00	C+C	ADHD	RS	ADHD-CL	EDYSREG	Gen	DERS	S	Germany

Authors	*N*	% of female	Sample Type	ADHD Variable	ADHD Type	ADHD Scale	ER Strategy	ER Family	ER Scale	Informant	Location
Cackowski et al., 2017	63	100.00	C+C	ADHD	D	SCID-I	EDYSREG	Gen	DERS	S	Germany
Carballo et al., 2014 (1)	343	0.00	ADHD	ADHD	RS	ICD-10	EDYSREG	Gen	SDQ	O	Spain
Carballo et al., 2014 (2)	623	34.03	NC	Hyp	RS	SDQ	EDYSREG	Gen	SDQ	O	Spain
Christian et al., 2020	306	73.86	NC	Hyp/Imp	RS	Barkley Adult ADHD-RS-IV	EDYSREG	Gen	DERS	S	USA
Cohen & Shapiro, 2007	58	68.97	NC	ADHD	RS	CAARS-A	EL	Gen	CAARS	S	USA
Colomer et al., 2017	72	8.58	NC	ADHD	RS	DSM-V criteria	EC	Gen	BRIEF	S	Spain
Crosbie & Schachar, 2001	80	25.00	NC	ADHD	D	DSM-IV	Reaction time	Res	Stop-signal Task	S	
Crundwell, 2005	32	0.00	ADHD	Disruptive Behavior	RS	DBRS-P/T	Self-control	Gen	SCRS	O	Canada
De Wied et al., 2012	49	0.00	C+C	ADHD	D	DISC-IV	Externalizing behavior	Res	CBCL	O	
Duncombe et al., 2013	191	28.00	C+C	Hyp/Inatt	RS	SDQ	ER	Gen	ERC	O	Australia
Edelbrock et al., 1985	104	47.12	NC	Hyp	RS	Diagnostic	social withdrawal	MOS	EQ	S	USA
Efstratopoulou et al., 2015	841	50.06	NC	Hyp/Imp	RS	Motor Behavior Checklist	Rules-breaking behavior	Res	Motor Behavior Checklist	O	Grecia
Epstein et al., 2001	55	54.55	C+C	ADHD	RS	CAARS & DSM-IV Interview	Reaction time	Res	CPT	S	
Espy et al., 2011	243	55.56	NC	ADHD	RS	CBCL	EL	Gen	Anger/frustration	C	USA
Evren et al., 2018	1010	60.00	NC	Inatt	RS	ASRS	EDYSREG	Gen	DERS	S	Turkey
Fagan et al., 2017 (1)	164	0.00	NC	Imp	RS	APSD	Antisocial behavior	Res	APSD	O	USA
Fagan et al., 2017 (2)	176	100.00	NC	Imp	RS	APSD	Antisocial behavior	Res	APSD	O	USA
Fantuzzo et al., 2001	580	48.97	NC	Hyp	RS	CAARS-T	ER	Gen	CCQ	O	USA
Flannery et al., 2016	158	63.92	NC	Imp	RS	Barkley Adult ADHD-RS-IV	EDYSREG	Gen	DERS	S	USA
Fogleman et al., 2016	59	35.60	ADHD	ADHD	D	DISC–P	AR	Gen	PANAS	S	USA
Fogleman et al., 2018	83	39.76	NC	ADHD	D	DISC–P	described frustration	Gen	FNT	O	USA
Fogleman et al., 2019	210	39.05	NC	ADHD	RS	ADHD-RS-IV–P	EDYSREG	Gen	ERC	S	USA
Forslund et al., 2016	184	51.00	NC	Hyp/Imp/Inatt	RS	ADHD-RS-IV	R-AFSHE	Gen	EQ short form	O	Sweden
Fredrick et al., 2020	4679	69.80	NC	Inatt	RS	BAARS-IV	Mind Wandering	ATT & COG	MEWS	S	USA
Frick & Brocki, 2019	77	23.38	NC	Hyp/Imp	RS	ADHD-RS5-CA	ODD & CD symptoms	Res	SNP Scale-IV	O	
Frick et al., 2020	82	25.61	NC	ADHD	RS	ADHD-RS5-CA	R-AFSHE	Gen	EQ	S	UK
Gambin & Świecicka, 2012	402	44.28	NC	Hyp/Imp	RS	Hyp/Imp RS	Self-Efficacy Scale	Gen	SCER	S	Poland
Geurts et al., 2006	42	16.67	NC	ADHD	D	DSM-V	inhibitory process	Res	SSRT	S	Netherlands
Graziano et al., 2011	80	22.50	ADHD	Inatt	RS	CAARS-P	EL	Gen	ERC	O	USA
Groves et al., 2020	145	37.93	NC	ADHD	RS	BASC-2/3	EC	Gen	BRIEF	O	USA
Gust et al., 2015	210	47.62	NC	Hyp	RS	SDQ	ER	Gen	ER German	C	Germany
Happé et al., 2006	60	0.00	NC	ADHD	RS	PACS	Conduct problems	Res	SDQ	O	

Authors	*N*	% of female	Sample Type	ADHD Variable	ADHD Type	ADHD Scale	ER Strategy	ER Family	ER Scale	Informant	Location
Harmon et al., 2020	159	46.54	C+C	ADHD	D	DSM-V	Rum	ATT & COG	CARS	S	Usa
Hentges et al., 2018 (1)	235	0.00	NC	Imp	RS	CBCL	Aggression	Res	Delinq-SR	S	USA
Hentges et al., 2018 (2)	254	0.00	NC	Imp	RS	CBCL	Aggression	Res	Delinq-SR	S	USA
Hirsch et al., 2018	213	37.09	C+C	Hyp	RS	CAARS-A	Adaptive responses	Res	ERSQ	S	Germany
Hirsch et al., 2019	385	39.48	C+C	ADHD	D	CAARS & DSM-IV Interview	Imp/EL	Gen	CAARS-SR	S	Germany
Hulsbosch et al., 2020	193	28.50	ADHD	Prediagnosed	D	Recruited from centers	Conflict behavior	Res	CBQ	O	Netherlands
Janiak-Baluch et al., 2013	511	48.34	NC	Somatization Symptoms	RS	CSI	Prosocial behavior	Res	Subscale of SDQ	S	Germany
Jarrett et al., 2017	298	28.00	NC	Inatt	RS	BAARS-IV	Executive Function	ATT & COG	SR of Emotion	S	USA
Jennings et al., 1997	66	0.00	C+C	ADHD	D	DBD	Reaction time	Res	Go-Signal task	S	USA
Johnson & Kercher, 2007	404	67.82	NC	ADHD	RS	Current Symptoms Scale	Criminal behavior	Res	Ad hoc scale	S	USA
Joshi et al., 2018	246	13.82	NC	ADHD	D	KSADS-PL	EDYSREG	Gen	CBCL	S	USA
Kader et al., 2016	78	0.00	NC	ADHD	RS	CAARS-P	Reaction time	Res	GNGT	S	Egypt
Kamradt et al., 2014	253	44.27	NC	ADHD	RS	BAARS-IV	ER	Gen	BDEFS	S	USA
Kats-Gold et al., 2007	111	0.00	NC	ADHD	RS	CRS-R-S	Self-control	Gen	SCRS-T	O	Israel
Kelly, 2009	80	57.50	NC	ADHD	RS	YAQ-B	SR	Gen	SRS	S	USA
Ketch et al., 2009	93	36.56	NC	ADHD	D	DSM-IV	Reaction time	Res	GNGT	S	Canada
Kolla et al., 2018	5196	52.25	NC	ADHD	RS	ASRS	Past arrest	Res	NR	S	Canada
Kristensen et al., 2014 (1)	932	0.00	NC	ADHD	RS	CASS	adaptability	Gen	EQ-i:YV	S	Canada
Kristensen et al., 2014 (2)	2382	100.00	NC	ADHD	RS	CASS	adaptability	Gen	EQ-i:YV	S	Canada
Kristensen et al., 2014 (3)	615	0.00	NC	ADHD	RS	CASS	adaptability	Gen	EQ-i:YV	S	Canada
Kristensen et al., 2014 (4)	773	100.00	NC	ADHD	RS	CASS	adaptability	Gen	EQ-i:YV	S	Canada
Kuntsi et al., 2001	169	54.44	NC	Hyp	RS	CAARS-T	Reaction time	Res	DA&ST	S	England
Kutlu et al., 2017	118	32.20	ADHD	Hyp/Inatt	RS	Turgay DSM-IV	Internalizing symptoms	Gen	CBCL	S	
Laceulle et al., 2017	2230	49.20	NC	Externalizing	E	YSR	frustration	Gen	EATQ-R	S	Netherlands
Lakes, 2013	207	51.00	NC	Hyp/Inatt	RS	SDQ	AR	Gen	RCS	O	USA
Landis et al., 2020	249	22.09	C+C	Hyp/Inatt	RS	BASC-2	ER	Gen	ERC	S	USA
Langberg et al., 2013	94	22.30	ADHD	Hyp/Imp/Inatt	RS	DBD-P	EC	Gen	BRIEF	O	USA
Lee et al., 2018	233	30.04	NC	Disruptive Behavior	RS	DBD-P	EDYSREG	Gen	Time Playing	O	USA
Lelakowska et al., 2019	179	0.00	NC	Imp	RS	ECBQ	Inhibitory control	Res	EQ	S	
Lugo-Candelas et al., 2017	63	0.00	NC	ADHD	D	Diagnostic Interview	Emotional Reactivity	Res	ERC	S	USA
Magnuson et al., 2016	9930	48.90	NC	Hyp	RS	NLSY ad hoc	Antisocial behavior	Res	NLSY ad hoc	S	
Maneiro et al., 2017	575	53.91	NC	Positive Urgency	RS	Impulsive Behavior Scale	Aggression	Res	ABQ	S	Spain
Margherio et al., 2020	171	20.00	ADHD	ADHD	RS	ARS Home	EDYSREG	Gen	DERS	O	USA

Authors	*N*	% of female	Sample Type	ADHD Variable	ADHD Type	ADHD Scale	ER Strategy	ER Family	ER Scale	Informant	Location
Martel et al., 2013	98	43.00	C+C	ADHD	RS	DBRS	AR	Gen	CCQ	O	USA
Marx et al., 2011	79	0.00	NC	Prediagnosed	RS	WURS-k	Blocked answers	ATT & COG	EWMT	S	Germany
Mathis & Bierman, 2015	210	55.00	NC	Attention control	RS	ADHD-RS-IV	ER	Gen	CPPRG	C	USA
McQuade & Breaux, 2017 (1)	61	52.46	NC	ADHD	E	DBD	Internalizing problems	Gen	DBD	S	
McQuade & Breaux, 2017 (2)	61	52.46	NC	ADHD	E	DBD	Internalizing problems	Gen	CBCL	S	
McVay & Kane, 2013 (1)	63	0.00	NC	ADHD	RS	ADHD-RS-IV	Mind Wandering	ATT & COG	SART	S	
McVay & Kane, 2013 (2)	64	0.00	NC	ADHD	RS	ADHD-RS-IV	Mind Wandering	ATT & COG	SART	S	
McVay & Kane, 2013 (3)	57	0.00	NC	ADHD	RS	ADHD-RS-IV	Mind Wandering	ATT & COG	SART	S	
McVay & Kane, 2013 (4)	67	0.00	NC	ADHD	RS	ADHD-RS-IV	Mind Wandering	ATT & COG	SART	S	
Meehan et al., 2008	42	35.71	NC	ADHD	RS	ADHD-RS-IV	Rorschach Inkblot Method	Gen	RIM	S	USA
Meeuwsen et al., 2019	236	43.00	NC	ADHD	RS	CBCL ages 1.5-5	SR	Gen	Raisin & Whispers Task	O	UK
Melnick & Hinshaw, 2000 (1)	57	0.00	C+C	ADHD	D	DACI-P & DBD	Accommodates	MOS	Observation	O	
Melnick & Hinshaw, 2000 (2)	57	0.00	C+C	ADHD	D	DACI-P & DBD	Accommodates	MOS	Observation	O	
Metin et al., 2016	54	44.44	C+C	ADHD	D	DISC-IV	Reaction time	Res	GNGT	S	
Mihic et al., 2016	182	0.00	NC	Hyp/Imp	RS	ADHD-RS-IV	ER	Gen	SCS	O	Croatia
Miller et al., 2019 (1)	291	53.61	NC	Hyp	RS	SNP Scale-IV	Inhibitory control	Res	Zoo Game	S	USA
Miller et al., 2019 (2)	291	53.61	NC	Hyp	RS	SNP Scale-IV	Inhibitory control	Res	Zoo Game	S	USA
Mitchell et al., 2012	41	60.98	NC	ADHD	RS	CAARS	EL	Gen	CAARS	S	USA
Mitchell et al., 2019	39	53.85	NC	ADHD	D	DSM-IV Clinical Interview	Nonacceptance of emotion responses	Res	DERS	S	
Motamedi et al., 2016	171	36.84	NC	Inatt	RS	CAARS	Aggression	Res	AAS T-R	O	USA
Musser et al., 2013 (1)	129	49.61	C+C	ADHD	RS	KSADS-PL	Conduct problems	Res	SDQ	O	
Musser et al., 2013 (2)	129	49.61	C+C	ADHD	RS	KSADS-PL	Conduct problems	Res	SDQ	O	
Nazari et al., 2018	65	24.62	NC	ADHD	D	CTRS	Reaction Time	Res	Time Discrimination	S	Iran
Nomanbhoy & Hawkins, 2018	91	100.00	NC	ADHD	RS	CAARS-P-R	EL	Gen	CAARS	S	Singapore
O'Neill & Rudenstine, 2019	177	66.67	C+C	Inatt	RS	CAARS-S:S	EDYSREG	Gen	DERS	S	USA
Okado & Mueller, 2016	665	37.29	NC	ADHD	D	DSM-IV	EDYSREG	Gen	CBCL	S	USA
Oosterlaan & Sergeant, 1998a	31	19.35	NC	ADHD	RS	IOWA CAARS	EC	Gen	CBCL	S	
Oosterlaan & Sergeant, 1998b	35	22.86	NC	ADHD	RS	IOWA CAARS	Aggressive behavior	Res	CBCL	O	Netherlands
Otterpohl et al., 2016 (1)	905	49.61	NC	Hyp/Inatt	RS	SDQR 1 (children)	Regulation of Anger	Gen	FEEL-KJ	O	Germany
Otterpohl et al., 2016 (2)	905	49.61	NC	Hyp/Inatt	RS	SDQR 1 (children)	Maladaptive Anger	Res	FEEL-KJ	O	Germany
Özbaran et al., 2018	200	46.00	NC	ADHD	D	DSM-IV-TR	EDYSREG	Gen	DERS	S	Turkey

Authors	*N*	% of female	Sample Type	ADHD Variable	ADHD Type	ADHD Scale	ER Strategy	ER Family	ER Scale	Informant	Location
Pauli-Pott et al., 2019 (1)	125	43.20	NC	ADHD	RS	PACS	ODD & CD symptoms	Res	ADHD-RS	O	Germany
Pauli-Pott et al., 2019 (2)	120	0.00	NC	ADHD	RS	PACS	ODD & CD symptoms	Res	ADHD-RS	O	Germany
Pliszka et al., 1997	27	22.22	NC	ADHD	D	DISC-IV	Reaction time	Res	Stop-signal task	S	
Qian et al., 2016 (1)	90	15.56	ADHD	Hyp/Imp	RS	ADHD-RS-IV	EC	Gen	BRIEF	S	Beijing
Qian et al., 2016 (2)	68	17.65	C+C	Hyp/Imp	RS	ADHD-RS-IV	EC	Gen	BRIEF	S	Beijing
Qian et al., 2016 (3)	90	14.00	ADHD	ADHD	RS	ADHD-RS-IV	EC	Gen	BRIEF-P	O	Beijing
Qian et al., 2016 (4)	68	17.65	C+C	ADHD	RS	ADHD-RS-IV	EC	Gen	BRIEF-P	O	Beijing
Rabinovitz et al., 2016	161	29.19	ADHD	Attention	A	NEPSY	Anger/frustration	Gen	Anger/frustration	C	USA
Raine & Jones, 1987	40	0.00	NC	Attention Problems	RS	RBPC	Socialized aggression	Res	RBPC	S	UK
Robins, 1992	44	0.00	NC	Hyp	RS	CBCL	Aggressive behavior	Res	CBCL	O	
Ros & Graziano, 2020	100	25.00	NC	ADHD	RS	KSADS-PL interview	EC	Gen	BRIEF-P	O	USA
Rosen & Factor, 2015	27	29.63	ADHD	Externalizing	E	CBCL	emotional impulsivity	Gen	Parent TA MSSD	O	USA
Rosen et al., 2015	56	37.50	ADHD	ADHD	D	DISC–P	Emotional Reactivity	Res	ERC	S	
Roth et al., 2013	38	42.11	C+C	ADHD	D	DSM-IV	EC	Gen	BRIEF	S	USA
Rubia et al., 2001	39	17.95	NC	ADHD	D	DSM-IV	Impulsiveness	Res	MARST	S	
Ryan et al., 2016 (1)	38	100.00	NC	Hyp	RS	CBRS–SR	EDYSREG	Gen	DERS	S	Canada
Ryan et al., 2016 (2)	28	0.00	NC	Hyp	RS	CBRS–SR	EDYSREG	Gen	DERS	S	Canada
Rydell et al., 2003	39	51.28	NC	Attentional focusing	A	CBQ	Regulation of Anger	Gen	EQ	O	Sweden
Salari et al., 2017	105	50.00	NC	ADHD	RS	ADHD-RS-IV	R-AFSHE	Gen	EQ	S	Sweden
Salbach et al., 2002	62	0.00	NC	Imp	RS	CPT	Delay of Gratification	ATT & COG	DGT	S	Germany
Sarkisian et al., 2019	134	53.00	C+C	Inatt	A	HBQ	Rum	ATT & COG	RSQ	S	USA
Sasser et al., 2015 (1)	321	0.00	NC	Inatt	RS	ADHD-RS-IV	Oppositional aggressive behavior	Res	TOCA-R	O	USA
Sasser et al., 2015 (2)	322	0.00	NC	Inatt	RS	ADHD-RS-IV	Oppositional aggressive behavior	Res	TOCA-R	O	USA
Sasser et al., 2015 (3)	302	0.00	NC	Inatt	RS	ADHD-RS-IV	Oppositional aggressive behavior	Res	TOCA-R	O	USA
Sasser et al., 2015 (4)	288	0.00	NC	Inatt	RS	ADHD-RS-IV	Oppositional aggressive behavior	Res	TOCA-R	O	USA
Scholte et al., 2008	2536	49.01	NC	ADHD	RS	ADHD-SQ	Delinquent behavior	Res	CBCL	O	Netherlands
Seymour et al., 2014	234	33.33	NC	Disruptive Behavior	RS	DBD-P	EDYSREG	Gen	DYSRE	O	USA
Seymour et al., 2015	75	48.00	C+C	ADHD	RS	ADHD-RS-IV–P	Commission error	ATT & COG	A-GNGT	S	USA

Authors	*N*	% of female	Sample Type	ADHD Variable	ADHD Type	ADHD Scale	ER Strategy	ER Family	ER Scale	Informant	Location
Seymour et al., 2020	105	0.00	NC	ADHD	D	DSM-V	Irritability	Gen	ARI	S	USA
Shelleby et al., 2014	367	0.00	NC	Conduct Problems	E	CBCL ages 1.5-5	Emotion Problems	Gen	CBCL	O	USA
Shelton et al., 2019	303	73.27	NC	ADHD	RS	BAARS-IV	SR	Res	MSLQ	S	USA
Shum et al., 2020	339	21.80	NC	Hyp/Imp	RS	SNAP-IV	EC	Gen	BRIEF-2 P/T	O	China (Hong Kong)
Sitnick et al., 2019	284	0.00	NC	Hyp/Inatt	RS	CBCL	Violent antisocial behavior	Res	SRD	S	USA
Sjoe et al., 2020 (1)	291	50.86	NC	Attention problems	RS	C-TRF & CBCL	SR & Cooperation Index	Gen	SEAM	O	Denmark
Sjoe et al., 2020 (2)	291	51.00	NC	attention problems	RS	C-TRF	SR & Cooperation Index	Gen	SEAM	S	Denmark
Sjöwall & Thorell, 2022	121	43.80	C+C	Hyp/Imp	RS	AEFI	ER	Gen	CERI	S	
Sjöwall et al., 2013	204	55.00	NC	Hyp/Inatt	RS	SDQ	R-AFSHE	Gen	EQ	O	Sweden
Sjöwall et al., 2015	104	35.00	ADHD	ADHD	RS	ADHD-RS-IV	EC	Gen	EQ	S	Sweden
Sjöwall et al., 2017	128	0.00	ADHD	ADHD	RS	ATRS	R-AFSHE	Gen	EQ	O	Sweden
Skirrow et al., 2013 (1)	41	0.00	ADHD	Hyp	RS	BRS	EL	Gen	ALS-SF	S	England
Skirrow et al., 2013 (1)	47	0.00	NC	Hyp	RS	BRS	EL	Gen	ALS-SF	S	England
Skogan et al., 2015	1134	47.97	ADHD	ADHD	D	PAPA	EC	Gen	BRIEF-P	O	Norway
Ştefan & Avram, 2017	212	51.89	NC	Externalizing	E	C-TRF	ER	Gen	ER Strategies	O	Romania
Tamm et al., 2018 (1)	61	16.39	NC	Inatt	RS	SW-ADHD-NBRS	EC	Gen	BRIEF-Presch	O	
Tamm et al., 2018 (2)	61	16.39	NC	Inatt	RS	SW-ADHD-NBRS	EC	Gen	BRIEF-Presch	O	
Tarle et al., 2019	68	15.12	NC	ADHD	D	KSADS-PL interview	ER	Gen	PH Task	O	USA
Thorell et al., 2004	63	0.00	NC	ADHD	D	DSM-IV	Regulation of negative emotions	Gen	ER	S	Sweden
Thorell et al., 2017	91	40.66	NC	Hyp/Imp/Inatt	RS	CAARS	Regulation of Anger	Gen	EQ	S	Sweden
Thorell et al., 2020	390	67.95	C+C	ADHD	D	DSM-V	Situation selection	MOS	CERI	S	
Tiego et al., 2020	136	36.76	NC	ADHD	RS	CBCL	EC	Gen	BRIEF	O	Australia
Torrente et al., 2014	35	42.86	ADHD	ADHD	RS	ADHD-RS-IV	Confrontative coping	Res	WoCC	S	Argentina
Tsai et al., 2020	172	18.02	NC	ADHD	RS	Chinese KSADS-PL	EDYSREG	Gen	CBCL	O	Taiwan
Uebel et al., 2010	431	30.63	NC	ADHD Diagnosis	D	NR	Reaction time	Res	GNGT	S	GER, IR, ISR, SPA, UK
Uebel-von Sandersleben et al., 2017	29	10.34	NC	ADHD	D	DSM-IV & ICD-10	Conduct problems	Res	SDQ	O	
Uran & Kılıç, 2014	88	39.77	NC	ADHD	D	DSM-IV	Oppositional	Res	CAARS	O	Turkey
Van der Meere et al., 1989	24	29.17	NC	Hyp	RS	GBOHQ	Reaction time	Res	S-R Task	S	

Authors	*N*	% of female	Sample Type	ADHD Variable	ADHD Type	ADHD Scale	ER Strategy	ER Family	ER Scale	Informant	Location
Van der Oord et al., 2008 (1)	50	0.00	ADHD	disruptive behaviors	RS	DBD	Disruptive behavior	Res	DBD	O	Netherlands
Van der Oord et al., 2008 (2)	50	0.00	ADHD	disruptive behaviors	RS	DBD	Disruptive behavior	Res	DBD	O	Netherlands
Van der Meer et al., 2013	95	12.63	C+C	ADHD	RS	CTRS-R: SF	Inhibition of prepotent	Res	GNGT	S	
Van Cauwenberge et al., 2015	67	32.84	C+C	ADHD	D	DISC-IV	Working Memory	ATT & COG	E/N-BT	S	Belgium
Van Cauwenberge, Sonuga-Barke et al., 2017	66	31.82	C+C	ADHD	D	DISC-IV	Reaction time	Res	A-AT	S	Belgium
Van Cauwenberge, El Kaddouri et al., 2017	42	42.86	NC	ADHD	D	DISC-IV	Cognitive reappraisal	ATT & COG	ERQ-CA	S	Belgium
Van Dessel et al., 2018	59	44.07	NC	ADHD	D	DSM-V	inhibitory control	Res	SSRT	S	Belgium
Verté et al., 2006	147	0.00	NC	ADHD	D	DSM-V	Inhibitory latency	Res	IPL	S	Belgium & Netherlands
Villemonteix et al., 2017	57	18.00	NC	ADHD	RS	ADHD-RS-IV	Reaction Time	ATT & COG	EWMT	S	Belgium
Walcott et al., 2004	46	0.00	NC	ADHD	RS	Typical Behavior Observation	EC	Gen	Videotaped ER Coping	O	USA
Wall et al., 2016	1027	54.82	NC	Hyp/Imp	RS	CSI-Parents-4	Conduct problems	Res	CSI-Parents-4	O	Cyprus
Walton & Flouri, 2010	203	61.60	NC	Hyp/Inatt	RS	SDQ	EDYSREG	Gen	DERS	S	UK
Waxmonsky et al., 2017 (1)	784	0.00	ADHD	Hyp/Inatt	RS	PBS	DMDD symptoms	Res	PBS	O	USA
Waxmonsky et al., 2017 (2)	665	0.00	NC	Hyp/Inatt	RS	PBS	DMDD symptoms	Res	PBS	O	USA
Weigard et al., 2016	132	47.73	C+C	ADHD	D	DSM-IV	Reaction time	Res	Serial reaction time task	S	USA
Welkie et al., 2020	902	51.77	NC	ADHD	RS	CAARS S-R	EDYSREG	Gen	DERS	S	USA
White et al., 2013	85	36.50	ADHD	Prediagnosed	D	Referred by Community	EC	Gen	BRIEF	S	USA
Willoughby et al., 2011	926	94.60	NC	Inatt & Overactivity	RS	IOWA CAARS	SR & compliance behavior	Res	PRSA	C	USA
Wolff et al., 2019	1187	37.70	NC	Hyp/Inatt	RS	SDQ	C/F-gumC	Res	C/F-gumC	O	Germany
Woodward et al., 2017	107	52.34	NC	ADHD	D	DSM-V	ER	Gen	ERC	S	New Zealand
Yan, 2016 (1)	1007	59.78	NC	Attention	A	CPT	SS	Res	SSRS	O	USA
Yan, 2016 (2)	1007	59.78	NC	Attention	A	CPT	SS	Res	SSRS	O	USA
Yeguez et al., 2018	432	72.45	NC	ADHD	RS	ASRS	Rum	ATT & COG	SRRS	S	
Young, 2005	78	28.21	NC	ADHD	D	DSM-V	Confrontative Coping	Res	WCS	S	London
Zhou et al., 2010	425	54.82	NC	Effortful Control	A	Chinese CBQ	Anger/frustration	Gen	CBQ	O	Beijing

Note. A-AT = Approach-Avoidance Task, A/E/GNGT= Affective/ Emotional/Go/no-go Task, ABQ = Antisocial Behaviour Questionnaire, ADHD-RS = ADHD Rating Scale, ADHD-RS-IV = ADHD rating scale–IV, ADHD-RS5-CA = ADHD Rating Scale-5 for Children and Adolescents, ADHD-SQ = ADHD symptoms questionnaire, AEF = Attentional Executive function, AEFI = Adult Executive Functioning Inventory, APSD = Antisocial Process Screening Device, ASRS = Adult ADHD Self-Report Scale, BAARS-IV = The Barkley Adult ADHD Rating Scale-IV (Barkley, 2011), BASC-2/3 = Behavior Assessment Scale for Children (Reynolds & Kamphaus, 2004, 2015), BDB = Disruptive Behavior

Disorders Rating Scale (Pelham et al. 1992), BDEFS = Barkley Deficits in Executive Functioning Scale (Barkley, 2011), BRIEF = Behavior Rating Inventory of Executive Function (Gioia et al., 2000), BRIEF/AS/P/T/Presch –/Parent/Teacher/ Preschool, BRS = Adult ADHD self-rated Barkley rating Scale (Barkley, 1998), C-DISC-IV = Computerized Diagnostic Interview Schedule for Children, Fourth Edition (Shaffer et al., 2000), C-TRF = Caregiver-Teacher Report (Achenbach and Rescorla, 2000), C/F-gumC = Candy/fruit gum consumption, CAARS = Conners Adult ADHD Rating Scale (Conners et al., 1999), CAARS SR/ P/T = Conners' ADHD rating scale Self Report/Parent/Teacher, CBCL =The Child Behavior Checklist, CBQ = Chinese version of Rothbart's Child Behavioral Questionnaire (Goldsmith & Rothbart, 1991; Rothbart et al., 2001), CERI = Comprehensive Emotion Regulation Inventory, Coded = Coding (behaviors and verbalizations), CPRS–R = ADHD psychopathology Parent rating scale (Conners, Sitarenios, Parker, & Epstein, 1998), CPT = Continuous Performance Test, CPT = Continuous Performance Test, CSI = Child Symptom Inventory for Parents-4, CSI = Children's Somatization Inventory, DA&ST = Delay Aversion & Stop Task, Delinq-SR = Self-Report Delinquency, DERS = Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004), DERS-P = Difficulties in Emotion Regulation Scale Parents (Gratz & Roemer, 2004), DISC-P = The Diagnostic Structured Interview for Children- Version IV, Parent Report (Shaffer et al., 2000), E/N-BT =Emotional/ N-back Task , EQ = Emotion Questionnaire, ER = Emotion Regulation, ERC = Emotion Regulation Checklist (Shields and Cicchetti, 1997), ERSQ = Emotion Regulation Skills Questionnaire, EWMT = Emotional working memory task, FNT =Frustration Narrative Task, GBOHQ = Groningen Behavior Observation hyperactivity questionnaire, Hyp = Hyperactivity, Hyp/Imp = Hyperactivity & impulsivity, Hyp/Imp RS = hyperactivity and impulsivity Rating Scales, Hyp/Imp/Inatt = Hyperactivity, impulsivity, Inattentiveness, Hyp/Inatt = Hyperactivity & Inattentiveness, IPL = Inhibitory Process Latency, K-SADS-P = Kiddie-Schedule for Affective Disorders and Schizophrenia–Present and Lifetime Version, MARST= Maudsley Attention & Response Suppression Task, P-ChIPS = Children's Interview for Psychiatric Syndromes—Parent Version (Weller et al. 1999), PBS = Pediatric Behavior Scale subscale, SCID-I = Structured Clinical Interview for DSM-IV Axis-I, PH Task = Videos completing PH task Noldus The Observer XT Ver.8, R-AFSHE = Regulation of anger, fear, sadness and happiness/exuberance, RBPC = Revised Behavior Problem Checklist, SCRS/T = Self-Control Rating Scale/Teacher, Self-control emotional regulation, SNP Scale-IV = Swanson, Nolan, and Pelham Scale-IV, SR = Self-regulation, SRRS = Stress-Reactive Rumination Scale, SSRS = Social Skills Rating Scale (Gresham and Elliot, 1990), SSRS = Social Skills Rating System, SW-ADHD-NBRS = Strengths and Weaknesses of ADHD Symptoms and Normal Behavior Rating Scales, TOCA-R = Teacher Observation of Child Adaptation—Revised, Turgay DSM-IV = Turgay DSM-IV–Based Child and Adolescent Behavior Disorders Screening and Rating Scale, WoCC = Ways of Coping Checklist, YAQ-B = Young ADHD Questionnaire – Self-Report – Brief (Young, 2004), YSR = Youth Self-Report (Achenbach, 1991). ADHD type (A =attention, D = Diagnostic, E = Externalizing, RS = Rating Scale). Study Design (CS= Cross-Sectional, CSB= Cross-Sectional Between, L= Longitudinal, Exp = Experimental), Sample type (C+C = clinical and comorbid, ADHD = Only ADHD, NC = Non-clinical), Informant (C=Cross, O= Other, S= Self). ER Type (CB = Conflictive Behaviors, C+ = Coding (behaviors and verbalizations), EI = Emotional Inflexibility, ESC = Emotional Self-Control, CrimB = Criminal Behavior, Gen = General, Cop = Copy, PR = Positive Reappraisal, PS = Problem Solving, PT = Projective Test, RD = Regulation Difficulties, ME = Maladaptive Emotion, RD = Regulation Difficulties, Rum = Rumination, RT = Reaction times, SS = Social Skills). ER Type (CB = Conflictive Behaviors, C+ = Coding (behaviors and verbalizations), EI = Emotional Inflexibility, ESC = Emotional Self-Control, CrimB = Criminal Behavior, Gen = General, Cop = Copy, PR = Positive Reappraisal, PS = Problem Solving, PT = Projective Test, RD = Regulation Difficulties, ME = Maladaptive Emotion, RD = Regulation Difficulties, Rum = Rumination, RT = Reaction times, SS = Social Skills). ER Family (ATT & COG = Attention deployment and cognitive change, Gen = General, MOS = modification of situation, RES = Response). Informant (S= Self, O= Other).

CHAPTER 3:

Development of the Arabic Inventory of Parent and Domestic Worker Attachment: A Tool to Assess Adolescents' Attachment in the Middle East

This chapter is based on the following work:

Mohammed, A. & Alonso-Arbiol, I. (under review). *Development of the Arabic Inventory of Parent and Domestic Worker Attachment (A-IPDWA): A Tool to Assess Adolescents' Attachment in the Middle East*. Manuscript submitted for publication.

Abstract

Adolescents' attachment security to parental figures has been assessed in multiple cultures and languages. In some cultural contexts, secondary parental figures are ubiquitous, although their effect on children and adolescents' well-being has been understudied. The present study aimed to validate a culture-specific Arabic instrument of attachment security in an adolescent sample in Qatar. As foreign domestic workers (FDWs) play a key role as secondary caregiving figures in Middle Eastern countries, in this new instrument, parents (i.e., mother and father) and FDWs were included as providers of attachment security. A sample of 387 adolescents (aged 12 to 17 years; 48.3% girls) participated in the study in 2020–2021. While 286 students completed the modern Arabic version, 101 students attending international schools completed the English version for comparison purposes. Confirmatory factor analysis for all three forms (i.e., mother, father, and FDW) showed the one-dimensional nature of the Arabic tool. Optimal Tucker's phi coefficients indicated a comparable one-factor structure of attachment security across linguistic versions. Moderate correlations (positive and negative, respectively) of attachment security to the father and mother (but not the FDW) with the Cohesion and Conflict subscales of the Family Environment Scale provided evidence regarding concurrent validity. Gender differences in the links between adolescents' attachment security and family conflict were observed; culturally relevant relationship family patterns are stressed. Practical implications of the validation of the Arabic Inventory of Parent and Domestic Worker Attachment are discussed.

Keywords: Arabic, domestic workers, Middle East, parental attachment, secondary attachment figure, test development

Introduction

One of the factors that can offer the most insight into children and adolescents' problems is understanding the quality and functioning of their relationship with their parents. A large body of research on attachment security to parental figures supports its tremendous implications for developmental growth and as a protective factor for later development of psychopathology (e.g., see meta-analyses: Groh et al., 2012; Madigan et al., 2016). Still, there is very little research on secondary attachment figures. In Middle Eastern cultures and societies, live-in foreign domestic workers (FDWs) commonly take on parental roles, the effects of which on children and adolescents' development and the family environment have been highly underestimated (Al-Matary & Ali, 2013; Al-Matary & Aljohani, 2021). Moreover, although Arabic is one of the most spoken languages across 25 countries, there is no Arabic instrument to measure attachment security. Designing and validating a measure of attachment security that includes secondary parental figures can provide further insight into contributing factors to adolescents' well-being and (mal)adjustment. Tools developed in the West may not accommodate the specificities of the Middle East and Global South, where there may be multiple secondary parental figures living within the same household.

Psychosocial development during adolescence incorporates varied ways of expressing attachment-related cognition, behavior, and affect (Cassidy & Shaver, 2016; Rogers et al., 2022). Decades of evidence have shown that at this critical stage, attachment security to parents is positively linked with higher levels of positive aspects of well-being—self-esteem (e.g., Chen et al., 2017; Jiang et al., 2013; Keizer et al., 2019), life satisfaction (e.g., Jiang et al., 2013), and resilience (e.g., Guo, 2019), among others—and to lower levels of internalizing symptoms (e.g., Brenning et al., 2012; Yang et al., 2022) or externalizing symptoms/antisocial behavior (e.g.,

Cavendish et al., 2012; Gallarin & Alonso-Arbiol, 2012; Hoeve et al., 2012; Kordahji et al., 2021; Muarifah et al., 2022). Since early attachment theories, psychologists have developed measures of the quality of relationships with primary (parental) attachment figures (for reviews, see Bretherton, 2010; Justo-Núñez et al., 2022; Lai & Carr, 2018). While parents typically embody the primary attachment figure in the Global North, there are additional caregivers in different regions of the world that fit the description of a secondary attachment figure (Al-Matary & Ali, 2013; Al-Matary & AIjohani, 2021; Khalifa, 2009; Khalifa & Nasser, 2015; Liang et al., 2021; Ma et al., 2020). Given the significance of attachment security in adolescence, it is critical to analyze similarities and differences in adolescents' attachment quality with their primary versus secondary attachment figures.

Despite the possible impact of secondary attachment figures on children's emotional and behavioral development, this theme has frequently been dismissed in studies of family environments (Al-Matary, 2013 & Ali; Al-Matary & AIjohani, 2021; Khalifa & Nasser, 2015; Ma et al., 2020; Roumani, 2005). Several individuals can assume the role of the secondary attachment figure, including grandparents (e.g., Liang et al., 2021) and family friends (e.g., Kammarath & Clifton, 2018). In the present study, however, we are concerned with the FDWs employed to assist with household chores and responsibilities (Al-Matary & Ali, 2013; Al-Matary & AIjohani, 2021; Chan, 2005).

In the context of Qatar, as with other Gulf Cooperation Council (GCC) countries, FDWs often live in their employers' homes. According to the Qatar Labor Force Survey of 2017, the prevalence of FDWs in Qatar had reached more than 100,000 in a population of under three million. Families in Qatar and the GCC depend on FDWs for household work and childrearing, and they are considered part of the family unit (Nagy, 1997). High dependence on FDWs by

primary attachment figures (mother and father) has been suggested to create possible disturbances to children and adolescents' emotional and behavioral development (Malit et al., 2018; Roumani, 2005). However, as these conclusions are based on casual and unsystematic observations, a closer examination of the overlooked role of FDWs using rigorous assessment procedures is required.

Assessment of Attachment Security in Adolescents

Armsden and Greenberg (1987) developed an assessment tool (i.e., the Inventory of Parent and Peer Attachment: IPPA) with two (more or less) parallel versions: one regarding the parents, and another one for peers. The items were intended to provide a global score for secure attachment and three dimensions of the attachment relationship: trust, communication, and alienation. Although the original IPPA does have theoretical backing, its three-dimensional structure has not gone unquestioned (e.g., Baiocco et al., 2009; Gallarin & Alonso-Arbiol, 2013). More recently, Jewell et al. (2019) conducted a systematic review of instruments used to assess attachment in childhood and adolescence, applying Consensus-based Standards for the selection of health Measurement Instruments (COSMIN) criteria. They concluded that the factor structure of the IPPA—both in the original form and the four shorter versions, and as supposedly tapping into the three factors (alienation, trust, and communication)—shows inadequate structural validity.

Some studies have failed to identify the three-dimensional structure in other linguistic versions (e.g., Alonso-Arbiol et al., 2014; Günaydin et al., 2005). In fact, Gallarin and Alonso-Arbiol's study (2013) proved that all questions invoke a one-dimensional form of attachment security; they adapted the IPPA into Spanish and tried to replicate the results from the original inventory, which showed confounding results, leading them to exploratory methods. Through their exploratory factor analysis, a single-factor structure seemed to appear, which would assess

the perceived attachment security attained in relationships with parents and peers. Thus, we will adopt the single-factor structure of attachment security to develop an Arabic language assessment tool for primary (i.e., mother and father) and secondary (i.e., FDWs) attachment figures. Maternal and paternal attachment is expected to be intercorrelated whereas attachment to the FDW would not be associated with attachment to the other two figures.

Concurrent Validity of the Arabic Inventory of Parent and Domestic Worker Attachment: Family Cohesion and Conflict

An ideal family environment provides children with space for growth to develop their capabilities by having family members to lean on for support (Costa Martins et al., 2022; Wong et al., 2021). When a family fails to provide children with an organized, cohesive, and supportive environment, they suffer emotionally (Kurock et al., 2022; Marsh et al., 2020; Morris et al., 2007). The Family Environment Scale (FES; Moos & Moos, 1994) aims to assess multiple dimensions of the family climate, focusing on relationships between family members, personal growth, and system maintenance.

The Relationship dimension of the FES provides further insight into adolescents' perceived relationships with parental figures (Moos & Moos, 1994), and it has been employed to evaluate concurrent validity of attachment security in adolescence (Gallarin & Alonso-Arbiol, 2013). The Relationship dimension consists of three subscales: Cohesion, Expressiveness, and Conflict. The degree of cohesion reflects the quality of interpersonal relationships, representing the extent to which family members are concerned about and committed to the family, and the degree to which they are helpful and supportive of each other. The degree of expressiveness denotes the extent to which family members are allowed and encouraged to act openly and express their feelings directly. The degree of conflict indicates the extent to which open expression of anger and

aggression, and generally, conflictual interactions, are characteristic of the family (e.g., Contreras et al., 2020; Kurock et al., 2022).

In summary, the Relationship dimension of the FES can aid in supporting the validity of the new Arabic attachment tool we intend to develop and validate, as they both investigate relationships between two family members. Thus, while for the parental versions of the tool, small-to-moderate correlations are expected with the FES' Cohesion and Conflict subscales (Gallarin & Alonso-Arbiol, 2013), the FDW version of the attachment measure is expected to be unrelated to the aforementioned FES subscales.

Aims of the Present Study

This study aims to contribute to the development of an Arabic assessment tool for adolescents' attachment security. This instrument stems from the IPPA–Short (IPPA–S; Gallarin & Alonso-Arbiol, 2013), but incorporates a relevant context-specific secondary figure: the FDW or *Khadama*. Both from methodological and applied viewpoints, there is an undeniable need for valid and reliable measures to enable the study of both primary (parental) and secondary attachment figures in this developmental phase.

This adapted tool will be named the Inventory of Parent and Domestic Worker Attachment (IPDWA). When specifically referring to the Arabic version, the acronym used will be A-IPDWA (there will also be an English version intended for building on its construct validity). Specific analyses for the validation of the tool will be conducted to examine: a) the construct equivalence of the IPDWA across linguistic versions (Arabic and English); b) the A-IPDWA's factor structure and internal consistency; c) the A-IPDWA's construct validity based on interrelations between the three forms (i.e., mother, father, FDW); and d) the IPDWA's concurrent validity in relation to

Cohesion and Conflict subscales of the FES. Additionally, gender differences will be reported to delve into cultural issues to enrich the attachment literature.

Methods

Participants and Procedure

A total of 387 adolescents residing in Qatar (48.3% girls) were recruited for the study from all-girls and all-boys schools[6]. For purposes of cross-language validation of the IPDWA, apart from the targeted Arabic-speaking youth (n = 286), adolescents in English speaking schools (n = 101) were surveyed. Regarding nationality, participants reflected the usual high presence of non-Qatari citizens: 51% and 45.5% in the Arabic- and English-language subsamples, respectively. Their ages ranged from 12 to 17 years, with adolescents completing the Arabic-language questionnaire being younger than those answering in English (M_{Arabic} = 15.03, SD_{Arabic} = 1.77; $M_{English}$ = 13.97, $SD_{English}$ = 1.82; Cohen's d = -0.593). Participants attended high schools; an invitation was sent to all public schools in the district of Doha.

First, an FDW form was developed by changing the nouns "mother"/"father" to "*Khadama*." A back-translation procedure was employed to adapt the existing English items (Nasser, 2005; van de Vijver & Hambleton, 1996). The three parental forms of the IPDWA were translated from English to Modern Standard Arabic by two professors with Arabic as their mother tongue and who are fluent in English. A third professor reviewed it and back-translated it to English for comparison with the original instrument to identify possible meaning changes. Subtle amendments were made, and the finalized Arabic version was set for data collection. Before distribution, the Ministry of Education and Higher Education of Qatar had to determine whether

[6] Not all adolescents responded to the questions regarding the FDW as they did not have one (the English sample had nine such missing responses).

the questionnaire was culturally appropriate and whether the language level was adequate for students' reading levels; no changes were required after this inspection.

Ethical approval was granted by the Hamad Medical Corporation. Formal consent from parents and educational authorities was obtained before data collection. Upon providing written informed consent to participate in the study, the adolescents were asked to complete the questionnaire in the classroom during ordinary school hours. Anonymization was ensured by employing codes for each student without reference to their names and identifying data. All data were stored on a password-protected computer.

Measures

Inventory of Parent and Domestic Worker Attachment (IPDWA). The English IPPA–S (Gallarin & Alonso-Arbiol, 2013; brief version derived from Armsden & Greenberg's IPPA, 1987) was used to develop the Arabic measure of attachment. It assesses adolescents' attachment security in the positive and negative affective and cognitive dimensions of relationships with the mother, father, and FDW. The initial version contained 16 items assessing perceived attachment security to each figure, where respondents are required to rate the degree to which each item is true for them on a five-point scale ranging from 1 (*Almost always or always true*) to 5 (*Almost never or never true*). The mother and father forms were used as mirrors to create the FDW form: "father," "mother," and "*Khadama*" were the only words changed across forms. Higher scores are indicative of higher perceived attachment security. Arabic and English versions were used for the study.

Family Environment Scale (FES; Moos & Moos, 1994) – Cohesion and Conflict subscales (Arabic version by Mohammed & Alonso-Arbiol, 2023). Although the complete scale comprises 90 true–false items to assess three dimensions—Relationship, Personal Growth,

and System Maintenance—of the family environment, we only used the six-item Cohesion subscale and the four-item Conflict subscale. Arabic and English versions were used for the study. Cronbach's alphas were moderate, as in the original English instrument: .629 (Arabic) and .737 (English) for Cohesion; .552 (Arabic) and .609 (English) for Conflict. McDonald's ω was .638 (Arabic) and .759 (English) for Cohesion, and .559 (Arabic) and 0.619 (English) for Conflict.

Sociodemographic information sheet. Apart from the participants' age and gender, information about family socioeconomic status was collected; by averaging the father's and mother's salary bracket (1 = *no salary* to 5 = 40,000 *Qatar riyals*) and highest educational level (1 = *primary education* to 5 = *doctoral studies or higher*), a composite was calculated. The comparison across linguistic versions showed a lower socioeconomic status (M_{Arabic} = 3.08, SD_{Arabic} = 1.04; $M_{English}$ = 3.79, $SD_{English}$ = 0.94; Cohen's d = -1.286) among adolescents answering the Arabic version of the questionnaire.

Data Analysis

Data from the two linguistic forms of the questionnaire were analyzed using SPSS 26.0 (IBM Corp., Armonk, NY, USA) and AMOS 26.0 (IBM SPSS, Chicago, IL). Factor structure, internal consistency, and concurrent validity analyses were performed. Exploratory factor analyses were conducted by cross-referencing the Arabic version with the English one to provide a valid Arabic tool. After extracting the norm component matrix and comparing the language, utilizing a principal component analysis for each form of the IPDWA (mother, father, FDW), Tucker's phi values were calculated. As the FDW form had not been explored before, specific item-level analyses were conducted (i.e., factor loadings, homogeneity indices, and changes in internal consistency) to detect problematic items. A refined version of the IPDWA was examined through confirmatory factor analysis (CFA) with varimax rotation, and model fit indices and estimates

were calculated. Cronbach's alpha and omega reliability were calculated; cocron (Diedenhofen & Musch, 2016), a statistical package used for the comparisons of alpha values. Pearson's correlations with the three forms (mother, father, and FDW) of attachment security and the two family dimensions (Conflict and Cohesion) were calculated to evaluate construct validity.

Results

Factor Validity and Internal Consistency of the IPDWA

We used a principal component analysis with varimax rotation to examine the general structure of the IPDWA. As such items had not been tested before with FDWs in either of the two languages, this exploratory approach was preferred over a CFA. Before the analysis, we calculated the Kaiser–Meyer–Olkin index of sampling adequacy and conducted Bartlett's sphericity test for each form (mother, father, and FDW) in both languages. As all Kaiser–Meyer–Olkin values indicated sampling adequacy (> .8) and the results of Bartlett's test were statistically significant, we proceeded with factor analyses. For each form of the IPDWA, both scree plots and explained variance (eigenvalue > 1) were examined; a clear one-factor solution was revealed for the Arabic and English versions. The percentage of explained variance, along with the factor loadings in corresponding forms and linguistic versions, are shown in Table 1. An item-level analysis was complemented with the corrected homogeneity index (i.e., correlations between each item and the total) and the loss in Cronbach's alpha internal consistency (see Table 2). Based on these analyses and previous criteria (Alonso-Arbiol et al., 2014; Gallarin & Alonso-Arbiol, 2013; items with loadings of |≥ .50| in the factor and scores of |≥ .50| in the corrected element–total correlation), suboptimal functioning was detected in the two reversed items: #3 ("I wish I had a different mother/father/*Khadama*") and #6 ("I feel it's no use letting my feelings show around my mother/father/*Khadama*").

Table 1

*IPDWA Item Wording and Factor Loading in the Principal Component Analysis for Arabic (*N = *286) and for English (N = 101)*

	IPDWA Item	Arabic Factor loading			English Factor loading		
		Mother	Father	FDW	Mother	Father	FDW
1	تحترم أمي/والدي/خادمتي مشاعري (My mother/father/khadama respects my feelings)	.722	.765	.590	.740	.781	.749
2	أشعر أن أمي/والدي/خادمتي تقوم بعمل جيد كأم (I feel my mother/father/khadama does a good job as a mother/father/khadama)	.589	.613	**.478**	.524	.608	.737
3R	أتمنى لو كان لدي أم/أب/خادمة مختلفة (I wish I had a different mother/father/khadama)	**.470**	**.320**	**-.462**	**.366**	**.296**	**-.032**
4	تقبلني أمي/والدي/خادمتي كما أنا (My mother/father/khadama accepts me as I am)	.674	.695	.589	.803	.729	.835
5	أحب الحصول على وجهة نظر أمي/أبي /خادمتي حول الأشياء التي أنا قلق بشأنه (I like to get my mother/father/khadama's point of view on things I'm concerned about)	.586	.798	.680	.646	.761	.826
6R	أشعر أنه لا فائدة من إظهار مشاعري لأمي/لوالدي/لخادمتي (I feel it's no use letting my feelings show around my mother/father/khadama)	**.343**	**.189**	-.506	**-.048**	**.049**	**-.461**
7	تهتم أمي/والدي/خادمتي بوجهة نظري عندما نناقش الأمور الخاصة بي (When we discuss things, my mother/father/khadama cares about my point of view)	.700	.784	.762	.817	.864	.819
8	تثق أمي/أبي/خادمتي بحكمي (My mother/father/khadama trusts my judgment)	.718	.846	.760	.743	.805	.759
9	تساعدني أمي/أبي/خادمتي أن أفهم نفسي شكل أفضل (My mother/father/khadama helps me to understand myself better)	.792	.812	.689	.746	.868	.808

10	أخبر أمي/أبي/خادمتي عن مشاكلي ومشاكلي (I tell my mother/father/khadama about my problems and troubles)	.646	.762	.716	.733	.751	.639
11	تساعدني أمي/أبي/خادمتي في التحدث عن الصعوبات التي أواجهها (My mother/father/khadama helps me to talk about my difficulties)	.686	.808	.714	.865	.817	.648
12	تفهمني أمي/أبي/خادمتي (My mother/father/khadama understands me)	.809	.855	.752	.861	.867	.827
13	تحاول أمي/أبي/خادمتي أن تكون متفهمة عندما أكون غاضبا من شيء ما (When I am angry about something, my mother/father/khadama tries to be understanding)	.691	.778	.759	.828	.843	.852
14	أثق بأمي/بأبي/بخادمتي (I trust my mother/father/khadama)	.670	.703	.766	.761	.766	.852
15	يمكنني الاعتماد على أمي/أبي/خادمتي عندما أحتاج أن أعبر عما بداخلي (I can count on my mother/father/khadama when I need to get something off my chest)	.724	.703	.765	.827	.825	.805
16	تسألني أمي/أبي/خادمتي إذا كنت منزعجاً من شيء ما (If my mother/father/khadama knows something is bothering me, she asks me about it)	.508	.588	.698	.785	.829	.850
% of explained variance		47.128	57.113	49.305	59.05	63.561	62.424

Note. The extraction method was principal component analysis with a varimax rotation. Factor loadings under .50 are in bold. Reverse scored items are denoted with an (R). FDW = foreign domestic worker/*Khadama*

Table 2
Item Analysis for Arabic and English IPDWA Versions

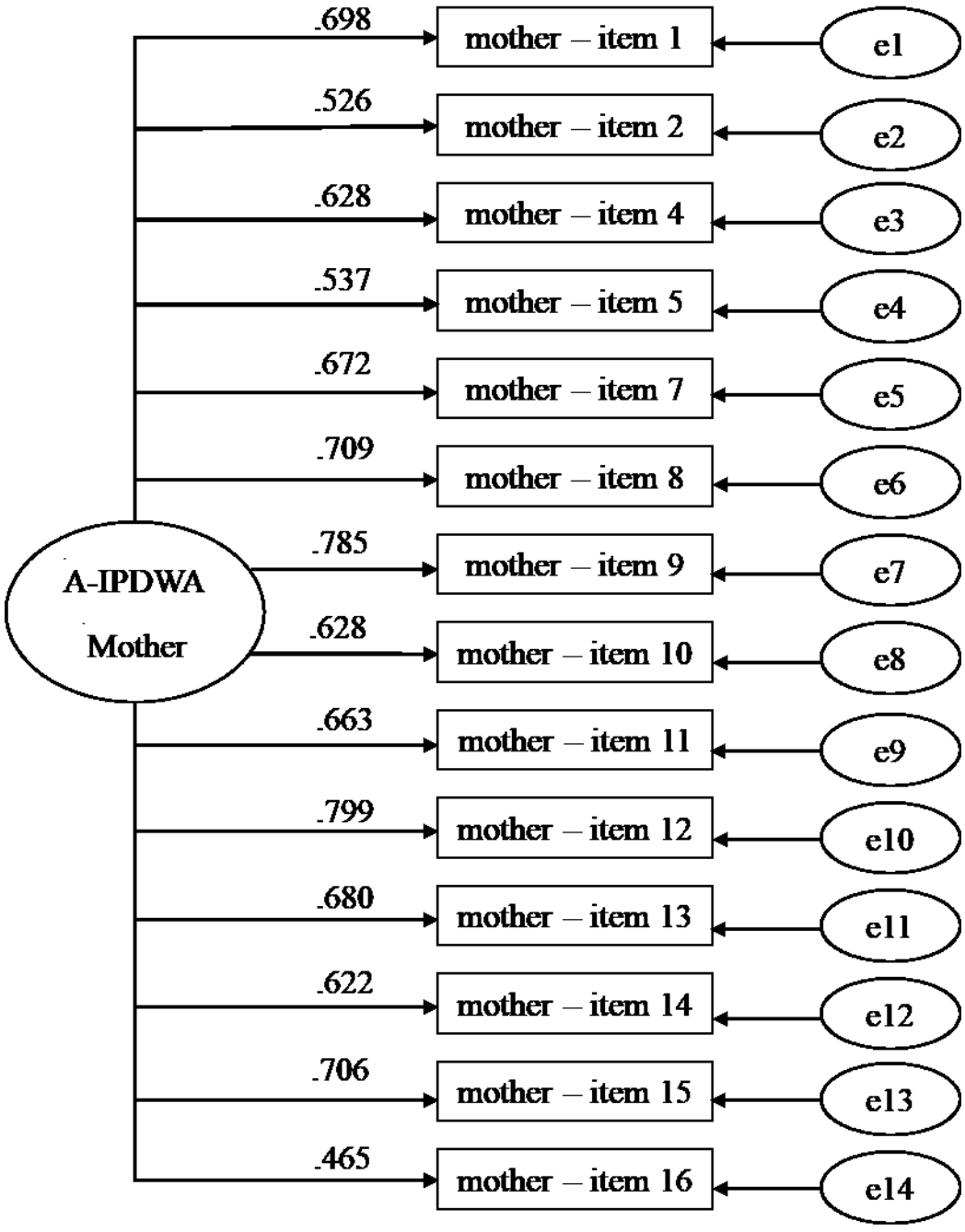
	Arabic						English					
	Mother		Father		FDW		Mother		Father		FDW	
	CITC	CAID	CITC	CAID	CITC	CAID	CITC	CAID	CITC	CAID	CITC	CAID
1	.658	.894	.713	.917	.530	.840	.677	.914	.749	.931	.725	.907
2	.518	.898	.560	.921	.436	.845	.509	.918	.589	.935	.676	.909
3R	.408	.901	.300	.929	-.380	.884	.344	.923	.300	.941	.042	.925
4	.614	.895	.643	.919	.526	.840	.756	.911	.687	.932	.756	.906
5	.532	.897	.746	.916	.572	.838	.599	.916	.706	.932	.778	.906
6R	.293	.908	.182	.933	-.420	.888	-.040	.940	.062	.948	-.384	.942
7	.637	.894	.739	.916	.666	.833	.768	.911	.832	.929	.730	.907
8	.641	.893	.796	.914	.732	.829	.671	.914	.747	.931	.650	.910
9	.739	.890	.757	.916	.606	.836	.685	.913	.832	.929	.756	.907
10	.585	.896	.698	.917	.606	.837	.679	.914	.686	.932	.598	.911
11	.640	.894	.762	.915	.599	.836	.829	.909	.775	.930	.637	.911
12	.758	.889	.805	.914	.672	.833	.810	.910	.819	.929	.799	.906
13	.619	.894	.739	.916	.705	.831	.768	.911	.791	.930	.792	.905
14	.608	.896	.650	.919	.716	.830	.713	.913	.717	.932	.822	.904
15	.658	.893	.644	.919	.696	.832	.768	.911	.773	.930	.786	.905
16	.445	.901	.534	.922	.658	.833	.739	.912	.788	.930	.829	.903

Note. CITC= Corrected Item-Total Correlation, CAID= Cronbach's Alpha if Item Deleted, R = Reverse item, FDW = Foreign Domestic Worker/*khadama*.

The structure of the final version of the A-IPDWA was examined through CFA using AMOS 26.0. The goodness-of-fit indices were estimated for a one-factor solution for the 14 items of each form of the Arabic questionnaire. The model showed adequate fit indices for the A-IPDWA mother [$\chi^2(77) = 221.78$, $p < .001$, $\chi^2/df = 2.880$, root mean square error of approximation (RMSEA) = .081, Tucker–Lewis index (TLI) = .902, comparative fit index (CFI) = .917], for the A-IPDWA father [$\chi^2(77) = 220.51$, $p < .001$, $\chi^2/df = 2.864$, RMSEA = .081, TLI = .933, CFI = .943], and for the A-IPDWA FDW [$\chi^2(73) = 190.06$, $p < .001$, $\chi^2/df = 2.604$, RMSEA = .081, TLI = .915, CFI = .932]. While all forms showed good indices, for the FDW form, some errors needed to be correlated for an acceptable fit. Standardized factor loadings are displayed in Figure 1 (A-IPDWA mother), Figure 2 (A-IPDWA father), and Figure 3 (A-IPDWA FDW).

As for internal consistency, Cronbach's alpha and omega coefficients were found to be in good standing for the 14 items. Regarding the A-IPDWA, the following values were obtained: α = .908 and ω = .911 (mother); α = .940 and ω = .942 (father); and α = .918 and ω = .919 (FDW). To allow comparison with the A-IPDWA, the English alpha values were also calculated: α = .944 (mother); α = .954 (father); and α = .953 (FDW). Using cocron for the statistical comparison of Cronbach's alpha coefficients (Diedenhofen & Musch, 2016), the analysis for the maternal form showed that the Arabic value was lower than the English one [$X^2(1) = 7.2358$, $p = .007$], but still strong. The same held true for the FDW form [$X^2(1) = 8.1657$, $p = .004$]. For the paternal form, however, the Arabic and English values were similar [$X^2(1) = 2.1625$, $p = .141$]; both were considered excellent.

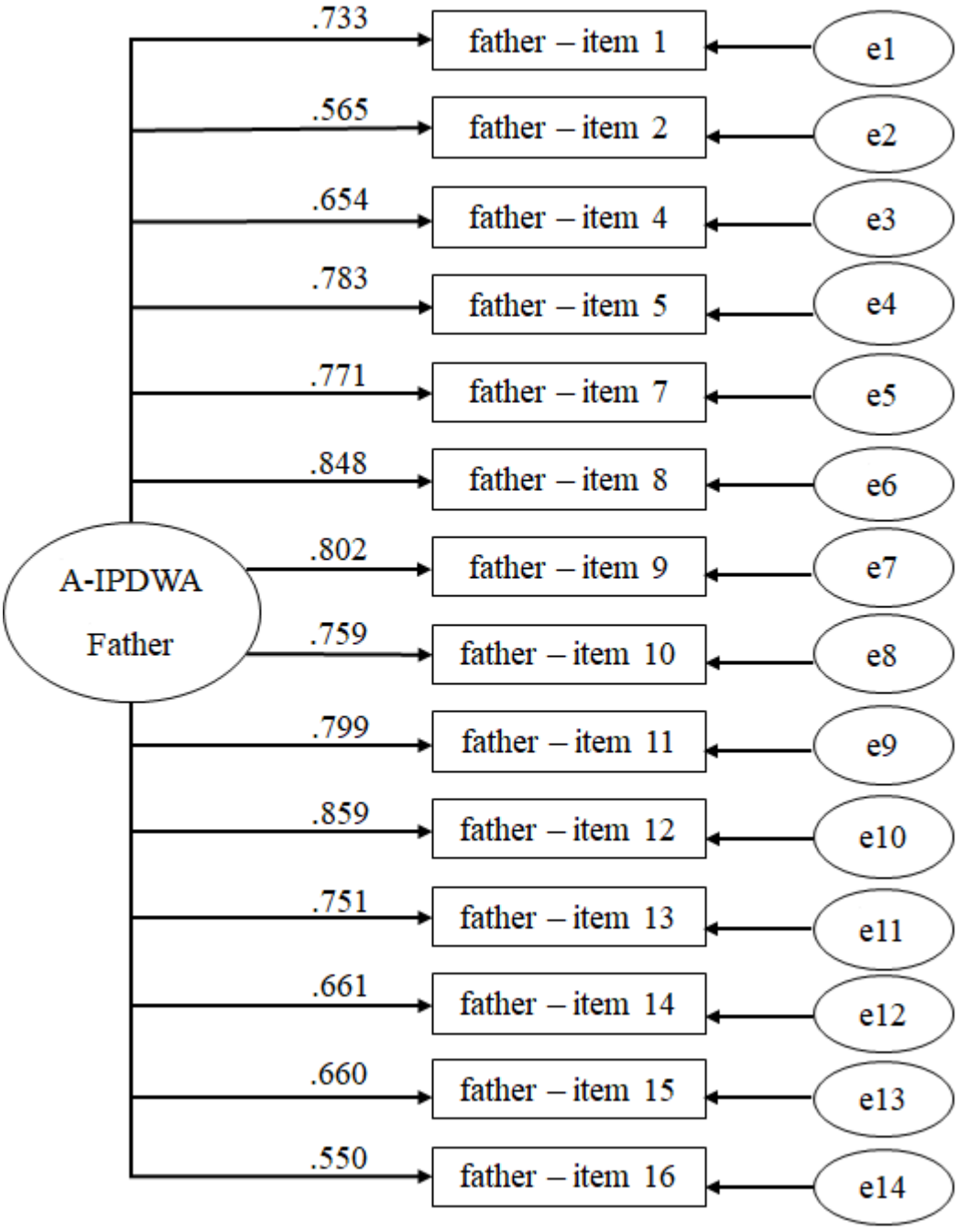
Figure 1
Standardized values of the CFA of the model of Mother form of the A-IPDWA



Note. N = 286. All coefficients are significant at the $p < .001$ level. A-IPDWA = Arabic Inventory of Parent Domestic Worker Attachment.

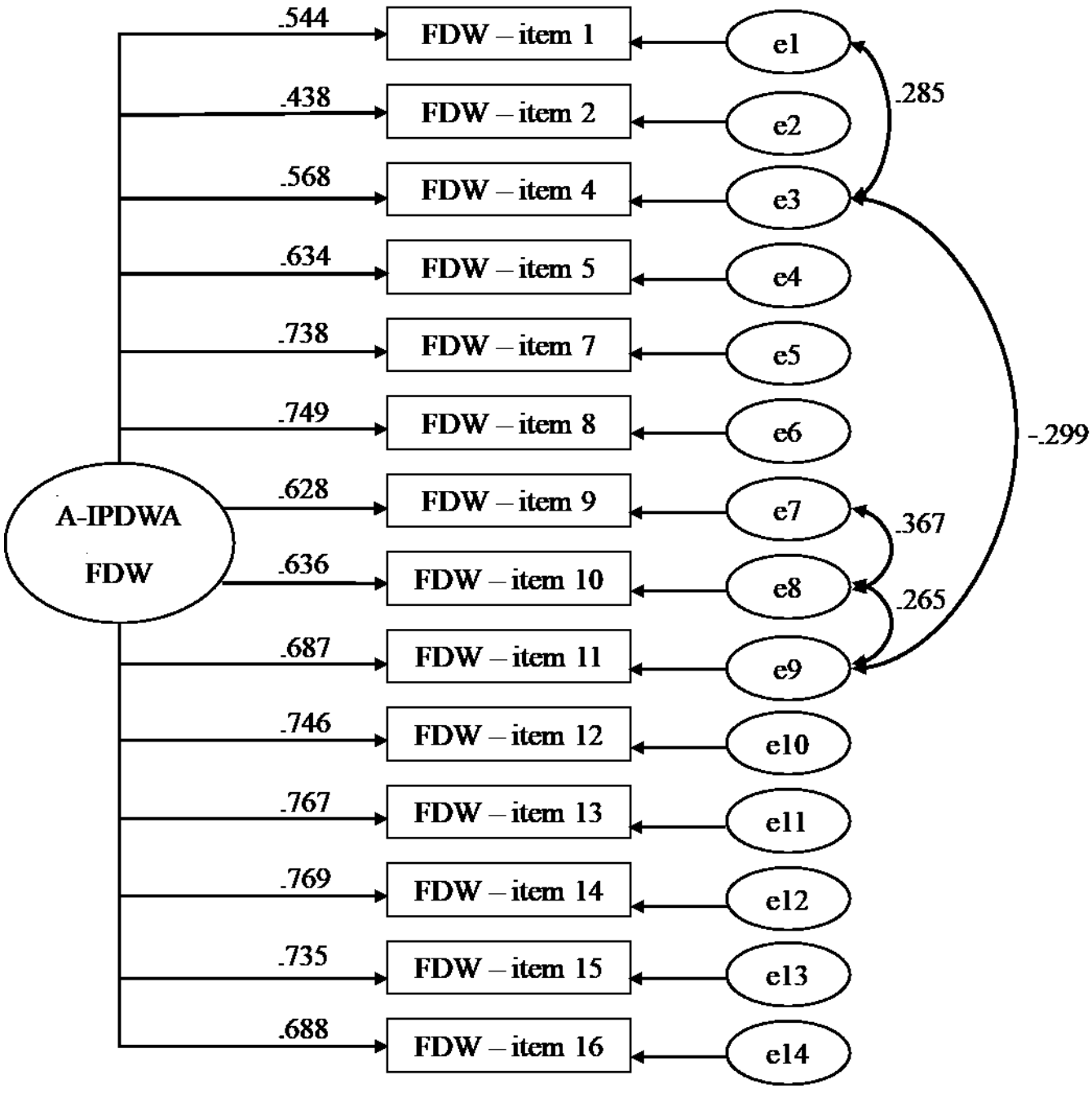
Figure 2

Standardized values of the CFA of the model of Father form of the A-IPDWA



Note. N = 286. All coefficients are significant at the $p < .001$ level A-IPDWA = Arabic Inventory of Parent Domestic Worker Attachment.

Figure 3
Standardized values of the CFA of the model of FDW form of the A-IPDWA



Note. N = 247. All coefficients are significant at the $p < .001$ level. FDW = Foreign Domestic Worker, A-IPDWA = Arabic Inventory of Parent Domestic Worker Attachment.

Construct Equivalence Across Linguistic Versions

On removing the reversed items and understanding the questions that worked best for the Qatari sample, we calculated Tucker's phi to compare factor structures in both languages and test construct equivalence across linguistic versions (van de Vijver & Leung, 1997). According to Lorenzo-Seva and ten Berge (2006), a value > .95 implies that the two factors or components compared can be considered equal. A Tucker's phi value of 1.00 was obtained for all three forms of the attachment questionnaire. Thus, as the factor structure held across the two linguistic versions, there was strong evidence for the construct equivalence of the A-IPDWA.

Analysis of Concurrent Validity

The A-IPDWA's construct validity was examined by considering: a) intercorrelations among attachment to different figures and b) correlations with the Cohesion and Conflict subscales of the FES (concurrent validity). Following others in the field (Gallarin & Alonso-Arbiol, 2013), this was done by analyzing the data for boys and girls separately. All correlations are shown in Table 3 (A-IPDWA and English IPDWA) and Table 4 (A-IPDWA split by gender). First, and as anticipated, the parental forms displayed a stronger correlation with one another than either of the two did with the FDW form. In the Arabic version, as expected, the maternal attachment subscale for both genders was positively correlated with Cohesion. The Conflict subscale was negatively correlated with the paternal subscale, in the expected direction, contrary to the maternal subscale. Similarly, in the English version, Cohesion and attachment to both primary parental figures were positively correlated for girls. However, among boys, statistical significance was not reached despite observing a correlation trend.[7]

[7] The English sample was small as it was only intended for construct equivalence through Tucker's phi analysis.

Table 3

Correlations among IPDWA Versions, and FES Cohesion and Conflict Subscales

		Arabic (N = 286)		English (N = 101)						
	Variable	*M*	*SD*	*M*	*SD*	1	2	3	4	5
1	IPDWA mother	4.184	0.736	4.238	0.773	-	.342**	.257	.540**	-.011
2	IPDWA father	3.910	0.918	3.745	0.963	.497**	-	.193	.381**	-.259
3	IPDWA FDW[a]	2.706	0.883	2.516	1.043	-.099	.095	-	.428**	.046
4	FES Cohesion	0.763	0.248	0.755	0.280	.346**	.381**	-.028	-	-.200
5	FES Conflict	0.301	0.295	0.354	0.325	-.214**	-.279**	-.003	-.228**	-

Note. IPDWA = Inventory of Parent and Domestic Worker Attachment, FDW = Foreign Domestic Worker/*khadama*, FES = Family Environment Scales.

[a] = IPDWA FDW in the Arabic version has a N = 247, and for the Arabic English version, N = 93. Results for English are shown above the diagonal, while for Arabic are shown below the diagonal.

** $p < 0.01$ level, two-tailed.

Table 4

Correlations among Arabic IPDWA Versions, and FES Cohesion and Conflict Subscales Split by Gender

		Male (N = 155)		Female (N = 131)						
	Variable	*M*	*SD*	*M*	*SD*	1	2	3	4	5
1	IPDWA mother	4.280	.647	4.070	.817	-	.549**	-.050	.284**	-.297**
2	IPDWA father	3.944	.942	3.870	.891	.453**	-	.076	.310**	-.240**
3	IPDWA FDW[a]	2.591	.884	2.836	.868	-.124	.114	-	-.004	.084
4	FES Cohesion	0.778	.257	0.744	.237	.404**	.430**	-.027	-	-.287**
5	FES Conflict	0.295	.287	0.307	.306	-.119	-.311**	-.079	-.179**	-

Note. IPDWA = Inventory of Parent and Domestic Worker Attachment, FDW = Foreign Domestic Worker/*khadama*, FES = Family Environment Scales.

[a] = IPPA-S FDW has a N = 131 for male respondents, and of N = 116 for female respondents.

Results for females are shown above the diagonal, while for males are shown below the diagonal.

* $p < 0.05$ level, two-tailed, ** $p < 0.01$ level, two-tailed.

Discussion

In this study, we had two aims: 1) developing an Arabic tool for assessing adolescents' attachment security including a culturally relevant secondary parental figure and 2) examining its construct validity through analysis of the factor structure and concurrent validity. CFA demonstrated that the A-IPDWA is relevant for use in the context of secondary parental figures and follows a one-factor structure, as found for other linguistic versions of the IPPA–S (e.g., Alonso-Arbiol et al., 2014; Gallarin and Alonso-Arbiol, 2013; Baiocco et al., 2009; Günaydin et al., 2005). The independent scores of (in)security of attachment perceived by the adolescent and in relation to mother, father, and FDW showed good validity indices and (internal consistency) reliability.

We calculated Tucker's phi to understand whether the construct of attachment security is similar in Arabic and English. We found that each parental figure subscale demonstrated high similarities in the Qatari sample's responses to the Arabic and English 14-item versions of the IPDWA. This supports the tool's construct equivalence, suggesting that the IPDWA may confidently convey the same meaning in this cultural/social context.

Several studies (Alonso-Arbiol et al., 2014; Baiocco et al., 2009; Gallarin & Alonso-Arbiol, 2013; Günaydin et al., 2005) point to the single-factor structure of attachment security in other languages (i.e., Basque, Italian, Spanish, and Turkish), although the original IPPA study used three factors: alienation, trust, and communication (Armsden & Greeberg, 1987). We initially extracted the questions from Gallarin and Alonso-Arbiol (2013), supported by studies in various languages. For example, in a Turkish study (Günaydin et al., 2005), the three-factor original initially applied, but the authors eventually arrived at the single-factor version. Baiocco et al. (2009) also identified only one factor for each scale in a sample of 1,000 Italian adolescents. Indeed, the comparison with other factor structures (e.g., Johnson et al., 2003; Pace et al., 2011) was not feasible (or intended) at this point because we based our analysis on

a shorter version whose items did not capture Armsden and Greeberg's (1987) three dimensions. Still, Jewell et al.'s (2019) observation regarding inadequate structural validity of three-factor attachment questionnaires is intriguing; it would indirectly support attachment (in)security being measured with only one dimension in adolescent questionnaires, which would come closer to an avoidant attachment orientation (i.e., not considering the parental figure as a safe haven). Thus, utilizing this single factor seems more efficient for capturing attachment security as a protective factor in adolescence.

In developing the final A-IPDWA, we faced a distinctive challenge regarding the results of the reverse-scored items. After a fine-grained inspection of the questionnaire items, we observed that most adolescents answered reversed questions against the expected (inverse) direction. A likely culprit may be adolescents' difficulty in dealing with reverse-ordered questions. We deviated from previous studies in that we used an abbreviated attachment security instrument (i.e., the IPPA–S; Gallarin & Alonso-Arbiol, 2013) because our age group was much younger. As our sample was mostly in the range of early adolescence, they may have had difficulty understanding how to answer the two reversed questions. Research suggests that cognitive processing differs for positively and negatively formulated items (e.g., Marsh, 1996; Suárez-Álvarez et al., 2018; van Sonderen et al., 2013); comprehending a reversed item requires better linguistic skills. The difficulty in comprehension is aggravated when people must alternate between processing regular and reversed items. Another explanation that cannot be ruled out and that quite likely may complement the previous one is the activation of acquiescence bias (i.e., a passive form of a tendency to agree to statements that may not reflect one's own position or beliefs). Two features of the Arabic (younger and culturally distinct) sample may account for that issue: first, acquiescence has been found in younger children responding to multiple-choice questions (Hinz et al., 2007; Suárez-Alvarez et al., 2018) and

second, higher acquiescence levels have been observed in responses of participants from cultures with a lower level of democratization (He et al., 2014).

Other than age, we kept in mind gender and explored the different correlations with attachment security, cohesion, and conflict. Gender plays a role in different interactions with each parent, which may affect relationship attachment security (e.g., Gambin et al., 2021; van Polanen et al., 2017). Our results demonstrated higher correlations with the mother than the father. This was expected owing to the gender roles in Qatar and similar Arab countries, where the mother is responsible for tending to the children while the father is a model of discipline and authority (Al-Badayney et al., 2023; Theodoropoulou, 2015). The FDW is an employee; thus, their actions stem from obligation and not necessarily from compassion for the family or children. This is where item #2 in the A-IPDWA, regarding "whether the attachment figure is doing a good job", is problematic; while in the case of the primary parental figures, caregiving is not their actual profession, it certainly is for the FDW.

Regarding construct validity, the correlations between the A-IPDWA and the FES subscales were as expected and supported our predictions: the parental attachment forms were related to Cohesion and Conflict, whereas the FDW form was not. Likewise, another source of construct validity derives from the high correlations between attachment to the mother and attachment to the father, while attachment to the FDW was unrelated to attachment to the parents. This is in line with studies analyzing the three attachment figures in childhood, where attachment to mother and father are similar, with a clear difference from caregiver attachment (e.g., van IJzendoorn et al., 1992); this same observation was confirmed in adolescents of the MENA region with the A-IPDWA.

Despite not having posed gender hypotheses for concurrent validity, correlations between the attachment and family environment scales were separately provided for girls and boys, as Gallarin and Alonso-Arbiol (2013) did for Spanish adolescents. In line with these

authors' observations, relevant gender differences were observed in our Arabic sample. For boys, attachment to mother and conflict were unrelated, while for girls there was a negative correlation between attachment to mother and conflict. This may be explained by an environmental and cultural context of dissimilar dynamics of social interactions between the mother and son or daughter (Shafaie et al., 2014), remarkably accentuated during adolescence. The traditional family role model is typically gendered in the Arab world (Ridge et al., 2017). Girls in Arab societies are encouraged to be communal, prioritizing their domestic responsibilities to fulfill their socially ascribed role as future wives, giving boys the leeway to pursue careers and establish financial freedom (Theodoropoulou & Ahmed, 2018). In a generational clash, girls may experience higher conflict with their mothers, who are the source of domestic socialization and to whom daughters may feel entitled to express their disagreement during adolescence. This environment may foster more conflict-ridden relationships between girls and their mothers, as the former have to shoulder the burden of greater expectations and restrictive conditions compared to boys, which in turn might diminish the potential use of mothers as a secure base and safe haven based on girls' higher experience of negative emotions toward them (Obeldobel & Kerns, 2020).

One limitation of this study is the number of participants who answered the English version of the questionnaire. Although the correlation between Cohesion and Conflict was trending, it did not reach statistical significance owing to the low sample size. Fortunately, the English version of the questionnaire was used only for comparison purposes and is just evidence for the construct validity of the A-IPDWA. In any case, future research may benefit from a more diverse range of ages (specifically older) with more participants and testing items across adolescence stages. This would allow exploration of whether reversed items work differently across adolescence owing to better cognitive development; for instance, speed processing—an ability required when quickly answering self-reports in school

surveys—still shows a pronounced increase in early adolescence (also implying between-individual variability) as compared to the later plateau in mid- and late adolescence (Kail & Miller, 2006). In addition, we suggest testing the IPDWA in other languages for cross-cultural examination of questions related to the effect of secondary attachment figures.

In conclusion, the A-IPDWA proved to be a valid and reliable option for measuring attachment security in the GCC region for primary parental and commonplace secondary attachment figures, such as FDWs. Hence, the A-IPDWA can be a viable option for Arabic-speaking populations in the clinical and research fields. This advance is crucial for psychological assessment in the MENA region, where about 6% of the world population resides (Althani et al., 2023), because sound Arabic instruments are imperative to avoid inaccurate clinical inferences (Zeinoun et al., 2022). In this regard, not only does the A-IPDWA provide clinicians, developmental psychologists, and practitioners with a valuable tool for the assessment of attachment in adolescence, but it also opens avenues for research on the combined effects of primary and secondary attachment figures on adolescents' normal and maladjusted socioemotional development, mostly discussed in childhood (e.g., Bowlby, 2007; Degotardi & Pearson, 2009) but notably understudied in adolescence.

CHAPTER 4:

Parental Attachment Security, Emotion Regulation, and Hyperactivity and Attention Problems in Adolescents

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Abstract

This study examined the mediating effects of emotion regulation (ER) strategies, cognitive (re)appraisal (CA), and expressive suppression (ES) in the relationship between attachment security to primary and secondary parental figures and hyperactivity and attention problems in adolescents. The Inventory of Parent and Domestic Worker Attachment (IPDWA), ER Questionnaire, and Behavior Assessment of Children were administered to a Qatari sample of 286 participants (45.8% girls) aged 12 to 17 years. The results indicated that attachment to primary parental figures was positively associated with CA and negatively associated with ES as well as attention problems and hyperactivity. However, attachment to the foreign domestic worker had positive correlations with hyperactivity and attention problems among girls; an association with functional regulation (i.e., CA) appeared only in mediation analysis. There was no significant mediating role of ER strategies in the relationship between primary and secondary attachment security and attention-deficit/hyperactivity disorder. Girls showed a lower level of ES but similar levels of CA than boys; the association between attachment, ER, and attention-deficit/hyperactivity disorder symptoms was stronger for girls. The role of foreign domestic workers in Qatari society, as well as gender differences, are discussed.

Keywords: hyperactivity, attention problems, emotion regulation, gender, parental attachment, secondary parental figure.

Introduction

The prevalence of ADHD among children is estimated to be 5–8% (Polanczyk et al., 2015); approximately 129 million individuals under the age of 18 worldwide have this disorder (Thomas et al., 2015). The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision diagnostic category (American Psychiatric Association, 2022) indicates that individuals with ADHD symptoms, such as hyperactivity and attention problems, have issues regulating emotions and with internalizing and externalizing behavior (McRae et al., 2020). It is widely accepted that ADHD is a chronic neurodevelopmental disorder with a complex etiology involving genes, brain changes, and environmental influences (Friedman & Rapoport, 2015; Nigg, 2012; Rovira et al., 2020; Shaw et al., 2012). Apart from the biological factors, external factors, such as the quality of parenting and the home environment, can influence symptoms of ADHD (for a review of home environmental factors, see Einziger & Berger, 2022; for a meta-analysis of multifactoriality, see Luo et al., 2019). Early detection in the home environment, based on the quality of parenting and relationship with parents, can influence children's behavior and ER ability; this can be vital for protecting the developmental pathway (Nikolas et al., 2015). Understanding the factors that can clarify the expression and early development of hyperactivity and attention problems on a non-clinical level could make monumental contributions to detection and intervention in the short and long term. Specifically, investigating non-clinical samples and examining the associations of hyperactivity and attention problems with the quality of the relationship with parents (i.e., attachment security provided by them), can offer insight into the home environment as an external factor affecting adolescents.

The family environment, which could act as a buffer against negative socioemotional development, may include other figures apart from parents. This is noticeable in the GCC countries, where parenting styles have been profoundly reconstructed. The economics of GCC

countries and the advent of petrol and gas exports has brought substantial affluence (Bertelsmann Stiftung, 2020). Here, the affordability of domestic help introduced "surrogate" parenting relying on foreign domestic workers (FDWs) to fulfill parental roles and household needs (Andrevski & Lyneham, 2014; McGuinness, 2021; Pande, 2012). However, the high dependence on FDWs has been observed globally, such as in Japan and China (e.g., Chan, 2005) or in other countries of the Middle East (e.g., Silvey & Parreñas, 2020), but the effects of this high dependence on FDWs on children's emotional and psychological development (Khalifa, 2009; Khalifa & Nasser, 2015) remains understudied. Our understanding of the many roles that FDWs play in the family—offering instrumental and emotional support—and the repercussions of their inclusion within households is still in a very early stage (Shah et al., 2012).

Therefore, it is vital to investigate the effect of adolescents' attachment security on their ER and maladaptive behaviors, acknowledging FDWs' potential impact on adolescents' attachment and bonding with parents. Likewise, examining the internal ER mechanisms mediating such links would provide deeper insight into how to intervene with adolescents. In this study, therefore, we investigate the relationship between attachment and hyperactivity and attention problems, as well as the correlation between ER and hyperactivity and attention problems, among children and adolescents.

Parental Attachment and Children's Hyperactivity and Attention Problems

Children's psychosocial development changes over time with regard to the meaning and expression of attachment-related cognition, behavior, and affect (Cassidy & Shaver, 2016). In the field of psychosocial development, research has examined the quality of adolescents' attachment relationships with primary attachment figures. The continuous assessment of attachment relationships reflects an adolescent's goal to be emotionally self-sufficient and autonomous while still requiring secure attachment (Allen et al., 2003; Bosmans et al., 2020).

Adolescents develop communicative and perspective-taking skills and can modify or correct their attachment-related behavior when required to meet their own needs while balancing the needs of others (Bosmans et al., 2020; Cassidy & Shaver, 2016).

Children and adolescents who are physically and/or emotionally neglected by attachment figures are more likely to develop behavioral and emotional problems that may continue into adulthood (Genc & Arsalan, 2022; Greenberg et al., 1991; Muris et al., 2003; Roelofs et al., 2006; Yoon et al., 2021). Focusing specifically on hyperactivity and attention problems among children and adolescents, there is extensive evidence of their links with attachment security to parents, both in normal and clinical samples (for a review, see Wylock et al., 2023), mostly in WEIRD countries. This association has been observed cross-sectionally as well as longitudinally (e.g., Thorell et al., 2012; Widmer et al., 2023). Thorell et al. (2012) found a strong association between the prevalence of hyperactivity and attention problems, such as externalizing behavior, among adolescents with disorganized attachment to parents. In Widmer et al.'s (2023) study, adolescents' ADHD symptoms predicted later behavioral problems, and this effect was moderated by maternal attachment. In other words, children and adolescents' experience of lower levels of attachment security directly affects externalizing behavior like hyperactivity and attention problems.

FDWs as Secondary Attachment Figures

Considering parenting realities around the world, and particularly the many figures who can be involved during the development of the child, one figure is considered particularly relevant in the interplay between caregivers, attachment development, and externalizing disorders: the secondary attachment figure (Al-Matary & Ali, 2013; Al-Matary & AIJohani, 2021; Cassidy & Shaver, 2016; Khalifa & Nasser, 2015). Family systems theory, for instance, states that the family unit is an inherent source of emotional support; however, when two family members are in conflict, it creates behavioral disruption for the child (Chow et al., 2021).

Therefore, the family system as a whole with the additional attachment figure—that is, the FDW—must be examined.

Secondary attachment figures (e.g., FDWs, grandparents, and siblings) develop subsidiary or secondary attachment bonds with the child (Bowlby, 1979; Cassidy & Shaver, 2016). Subsequently, secondary attachment figures can affect children and adolescents' emotional and behavioral development (Al-Matary & Ali, 2013; Al-Matary & AIJohani, 2021; Khalifa & Nasser, 2015; Roumani, 2005). For instance, children who are taken into social services' or other family members' custody because the primary parent can no longer care for them experience an emotional dilemma, requiring the secondary parental figures (e.g., the grandparents) to compensate for this disruption (Burks, 1994; Connor, 2006; Dolbin-MacNab & Keiley, 2006; Worrall, 2009), which may bring an additional source of emotional support. Although multiple caregivers can foster a cooperative system to produce a healthy environment for the child to develop positive emotionally adaptive behaviors (DePasquale, 2020; Goffin et al., 2018), there has been little to no research on both primary and secondary parental figures as a unit, when there are no incidents of separation from the primary parental figures. In fact, while the specific effects of attachment to secondary figures on the development of hyperactivity and attention problems have not been directly examined, research demonstrating the links between adolescents' attachment to secondary figures and internalizing mental health symptoms and lower psychological well-being (Imran et al., 2021) points to the fruitfulness of such endeavors.

GCC Countries and FDWs

Nagy's (1997) ethnographic paper highlighted the increase in the employment of female Asian workers as household caretakers, nannies, and cooks in the Middle East and particularly in Qatar after the 1970s. By the 1990s, this trend had also become widespread among foreign populations living in Gulf regions and continues to this day. For the employment

of FDWs as live-in caretakers and nannies, the employers—primary parental figures—must host them and manage all expenses, apart from their salaries and visa sponsorship. The relationship between employer and employee does not entail a personal connection; instead, it is an economic exchange devoid of emotional, value-laden, or social synergies (Zulfiqar, 2019). The common understanding is that the FDWs' tasks will be based on the role of a parental figure, creating a secondary parental figure for the child (Cheung et al., 2022).

Given that a considerable number of families across the GCC host FDWs, an investigation of the latter's effects as secondary attachment figures will offer further insight into adolescents' emotional and behavioral changes. While FDWs can be thought of as an exceptional case from a Eurocentric view, the prevalence of this phenomenon in GCC countries has been pervasive (Nagy, 1997); therefore, a relationship between lower levels of attachment security and maladaptive behaviors can be expected with this potential secondary figure. Ultimately, the insecurity with each parental figure is hypothesized to relate to ADHD behavior in adolescents, where a higher level of insecurity relates to hyperactivity and inattention problems. While some studies have examined the correlation between attachment security to parents and the aforementioned problems (for a review, see Wylock et al., 2023), the links with attachment to FDWs remain unexplored.

Attachment, ER, Hyperactivity, and Attention Problems

In understanding the mechanisms underlying the association between parental attachment and hyperactivity and attention problems, the development of ER processes across childhood and adolescence may be key (Zimmermann & Iwanski, 2014, 2018) and exert a mediating effect. Adaptive behaviors and the ability to cope with daily life events, in general, are attributed to strong bonding to emotional attachment figures (Stancu et al., 2020). Secure bonding to attachment figures improves ER (Bowlby, 1973; Cassidy et al., 1996; Cassidy & Shaver, 2016; Forslund et al., 2016; House et al., 2023; Stancu et al., 2020), which has a

multifaceted nature with changes in subjective experience, behavior, and central and peripheral physiology (Mauss et al., 2005). The lack of cognitive inhibition, positive ER, and poor regulation of positive emotions, in turn, would contribute to ADHD symptoms (Forslund et al., 2016), as disorganized attachment in childhood is associated with emotion dysregulation and ADHD symptoms (Forslund et al., 2016). While the process of ER involves complex interactions beyond the scope of this study, the present study focuses on the specific links between ER and ADHD symptoms in adolescents; in fact, emotions or feelings are often associated with impulsivity (i.e., a characteristic of ADHD) when executive functioning is difficult (Lokita et al., 2021; Thompson, 2011). This impulsivity may manifest as behaviors or facial expressions that take over motor activity and are difficult to suppress, suggesting little conscious emotional control (Lang & Bradley, 2010). Thus, ER governs internal skills such as inhibition and initializing and modulating emotions continuously during daily events (see reviews: Koole, 2009; Gross, 2015).

We use two broad mechanisms when regulating our emotions in response to our current situation. First are strategies related to cognitive thoughts, which are centered on cognitive appraisal (or reappraisal) of the situation. Second are strategies that involve the use of emotional control help tolerate anxious and stressful situations, implying a suppression of the emotional experience (Garnefski et al., 2001; Gross, 2015). Cognitive (re)appraisal (CA) is considered adaptive as it is associated with closer social relationships and higher self-esteem and life satisfaction (Gross, 2015; Gross & John, 2003). Similar positive traits correlate with secure attachment between parent and child (Hong & Park, 2012). Cognitive strategies, such as CA, can provide an action to be taken to solve a problem rather than inhibit emotion (Garnefski et al., 2001). On the contrary, those who have trouble maintaining self-control, such as those diagnosed with ADHD, might prioritize utilizing a less adaptive strategy of expressive suppression (ES) over CA owing to problems with cognitive inhibition (Brocki et al., 2007;

Forslund et al., 2016; Oosterlaan et al., 2005; Thorell & Wåhlstedt, 2006).

Regarding attachment and ER, Karreman and Vingerhoets (2012) found a relationship between insecure attachment and ES, while CA was more related to secure attachment. Similarly, other studies have discovered that higher levels of attachment security are associated with CA more than ES (Mikulincer & Shaver, 2007; Karreman & Vingerhoets, 2012). This dynamic relationship between attachment and ER may enforce the externalization or internalization of many other traits and behaviors (Campbell et al., 2000; Eisenberg et al., 2001; Jianghong, 2004); as it is learned how to respond to situations from time spent and experience with attachment figures, they may also greatly influence ER (Mauss et al., 2005; Gross, 2015). Consequently, those experiencing insecurities with their parental figures can develop strategies contributing to maladaptive behavior (Davila et al., 2005; Sroufe et al., 1999).

Overall, ER strategies have been related to internalizing and externalizing problems to the extent that they have transdiagnostic properties (Schäfer et al., 2017). Nonetheless, utilizing a support system, such as attachment figures, may help develop functional ER strategies (Corcoran et al., 2012). For instance, ER has been related to and mediates the relationship between attachment security and other psychological disorders, such as borderline personality disorder (Kim et al., 2014; Peng et al., 2021). It also has screening qualities; for example, specific maladaptive strategies may indicate the presence of other disorders. Similarly, Stepp et al. (2012) found that, owing to the lack of secure parental attachment and failure to regulate emotions, children exhibit maladaptive behaviors, including hyperactivity. Hence, children whose parental figures instill attachment security exhibit normal emotional and adaptive development (Stancu et al., 2020), and that may be expected to occur in adolescence. Adolescents' capacity to regulate emotions can be positively affected by their relationships with their attachment figures, which influences their ability to maintain adaptive behavior (Hill et al., 2006; Gratz et al., 2009; Rogier et al., 2017). Here, by investigating the additional effect

of secondary parental figures on adolescents' ability to regulate their emotions, a relationship between insecure attachment and less adaptive ER strategies might be examined. For this, investigating adaptive and maladaptive strategies may relate to insecure attachment among those with ADHD must be examined.

Gender Effects in Parental Attachment, ER, and ADHD Symptoms

In the dimensions of parental attachment, ER, and ADHD symptoms, specifically hyperactivity and attention problems, studies have observed the effects of gender, particularly because the experience of parental attachment varies between girls and boys. For instance, Fanti et al. (2008) found that female participants were closer to their mothers than were their male counterparts, suggesting that female adolescents experience higher-quality relationships with at least one parent (Diener et al., 2008; Tambelli et al., 2012). Using a measure of parental attachment, Tambelli et al. (2012) reported stronger attachment for adolescent girls with both parents. In addition, the consequences of lower-quality attachment may affect the gender differences in other measures. Specifically, lower levels of attachment to parents and relationship quality have been associated with higher levels of externalizing problems in boys, more significantly than in girls (Chang et al., 2013).

As for specific ER strategies (i.e., CA and ES), gender differences have been discussed in different age groups and cultural contexts (Cracco et al., 2017; Hampel & Petermann, 2005; Ramzan & Amjad, 2017). Previous research has investigated ER in the context of gender, highlighting how girls and boys are socialized; for example, girls are often taught to consider how their emotions affect others (Brody, 2000). While girls are discouraged from expressing anger, boys are often discouraged from expressing sadness or fear (see Chaplin & Aldao, 2013), and there are overall inconsistent findings on gendered trends of suppression and gender-specific emotion expression (Borelli et al., 2017; Gullone & Taffe, 2012; Palmer et al., 2018; Yeh et al., 2017), which may be attributed to the specific ER strategy or emotion to be regulated

(e.g., Nolen-Hoeksema & Aldao, 2011; Zimmermann & Iwanski, 2014). For instance, male participants have been known to use avoidant strategies or ES while female participants have been known to rely more on social support and rumination (e.g., Nolen-Hoeksema & Aldao, 2011; Zimmermann & Iwanski, 2014). Notwithstanding, when it comes to the use of CA and ES, the empirical findings are more diverse (Nolen-Hoeksema & Aldao, 2011), which may be attributed to the gender differences in socialization mentioned above (Saarni et al., 2006). Despite the absence of consistent findings, an awareness of the gender-specific use of ER strategies may help understand this impact on hyperactivity and attention problems in female and male participants in the current study (Quinn & Madhoo, 2014), while broadening the knowledge base regarding such processes in the MENA region. Nevertheless, we refrain from formulating any hypothesis.

Regarding hyperactivity and attention problems, there are some gender effects to be considered, as boys are more likely to be diagnosed than girls (Xu et al., 2018). Although parents tend to report the same primary symptoms of hyperactivity and attention problems in girls and boys (Graetz et al., 2005; Mayfield et al., 2016; Nøvik et al., 2006), teachers report boys as more inattentive, hyperactive, and impulsive (DuPaul & Weyandt, 2006; Hartung et al., 2002; Isaksson et al., 2020; Wang et al., 2015). For this reason, using self-report measures of these symptoms may provide a more accurate picture of adolescents' ADHD symptoms in Qatar.

In previous studies, boys displayed more hyperactivity than girls (Barkley & Poillion, 1994; Loyer-Carbonneau et al., 2021; Mowlem et al., 2019), whereas female adolescents were more likely to show inattention symptoms (Loyer-Carbonneau et al., 2021; Mowlem et al., 2019). A meta-analysis by Loyer-Carbonneau et al. (2021) supported that boys show higher levels of hyperactivity and greater difficulty inhibiting motor responses than girls. These syntheses indicate that girls display different behavioral expressions of hyperactivity and

attention problems compared to boys and suggest that future research should aim to refine the profile of hyperactivity and attention problems in girls (Loyer-Carbonneau et al., 2021). This issue will be explored here.

Overall, understanding how gender and a gendered environment have affected the three constructs (i.e., attachment, ER, and hyperactivity and attention problems) in past research may give us insight into possible gender effects in the current study. A specific hypothesis is not formulated regarding the strength of the association between variables as in the literature, most often, possible gender effects have been controlled for rather than specifically examined (e.g., Groves et al., 2020); yet, this question will be explored owing to its remarkable significance for understanding the possible mechanisms behind girls' underdiagnosis in the inattentive forms of ADHD (e.g., Owens et al., 2017; Quinn & Madhoo, 2014; Xu et al., 2018).

Objectives and Hypotheses

Our objective was to examine the relationship between attachment security to primary and secondary parental figures, ER strategies (CA and ES), and hyperactivity and attention problems in adolescents in Qatar. We propose the following four hypotheses:

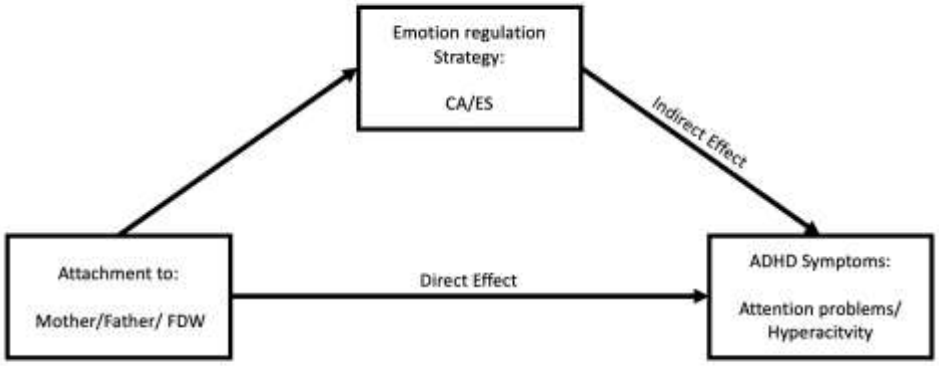
Higher levels of adolescents' attachment security to primary and secondary attachment figures are related to lower levels of hyperactivity and attention problems (*Hypothesis 1*).

Higher levels of adolescents' attachment security to primary and secondary attachment figures are related to functional ER, that is, higher levels of CA and lower levels of ES (*Hypothesis 2*).

Use of ER strategies is related to hyperactivity and attention problems. Specifically, higher levels of CA are associated with lower levels of hyperactivity and attention problems (*Hypothesis 3a*), and higher levels of ES are associated with higher levels of hyperactivity and attention problems (*Hypothesis 3b*).

ER strategies (CA and ES) mediate the direct effect of adolescents' attachment security (mother, father, and FDW) on hyperactivity and attention problems (*Hypothesis 4*).

Figure 1
Theoretical Mediation Model



Note. FDW= foreign domestic worker, CA = cognitive appraisal, ES = expressive suppression, ADHD = attention deficit hyperactivity disorder.

As gender effects may apply, but no hypothesis is formulated, exploratory analyses will include examining mediating effects separately for boys and girls (apart from the exploration of gender differences for all variables).

Methods

Participants

A convenience sample of 286 adolescents (all residents of Qatar; aged 12–17; *M* = 15.03, *SD* =1.77; 46% girls) participated in this cross-sectional study. Participants' parents reported the number of FDWs living in the household (range: 0 to 8; *M* = 1.53, *SD* = 1.16) and their socioeconomic status (*M* = 3.08, *SD* = 1.04; range: 1 to 5), which was calculated by taking the mean of the father and mother's educational level (1 = *primary* to 5 = *doctoral studies or higher*) and salary level (1 = *no salary* to 5 = 40,000 *Qatar riyals*).

Measures

Arabic Inventory of Parent and Domestic Worker Attachment (A-IPDWA; Mohammed & Alonso-Arbiol, 2022)

The development of this assessment tool has been thoroughly described and examined in Chapter 3. It assesses adolescents' attachment security to two primary parental figures (i.e., mother and father) and a secondary figure (i.e., the FDW or *Khadama*). Each version consists of parallel forms containing 14 items (e.g., "I tell my mother/father/*Khadama* about my problems and troubles") to be evaluated on a five-point Likert-scale ranging from 1 (*Almost always or always true*) to 5 (*Almost never or never true*). A secondary parental figure was included in the present study, with the same questions as for the mother or father. Internal consistency values are provided here again for the sake of readability: α = .908 and ω = .911 (mother); α = .940 and ω = .942 (father); and α = .918 and ω = .919 (FDW or *Khadama*).

ER Questionnaire (ERQ) (Gross & John, 2003; Mehri & Kazarian, 2015)

The 10-item ERQ is designed to measure people's usage of two regulation strategies. First is CA, an antecedent-focused strategy, where a person attempts to change how they think about a situation to change its emotional impact (six items, e.g., "When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm"). The second is ES, a response-focused strategy where a person attempts to inhibit the behavioral expression of their emotions (four items, e.g., "I keep my emotions to myself"). Two separate scores were derived for the regulation strategies; each one was calculated by averaging the respective items' values. All items were answered on a seven-point Likert scale, ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*), with higher average scores indicating higher usage of that strategy. Internal consistency were calculated for the two regulation strategies; while the values for CA (α = .789, ω = .792) may be considered above the proposed standards of acceptability (e.g., see Cicchetti, 1994), those obtained for ES were slightly lower (α = .676, ω = .681), but

still acceptable according to the lower number of items of the scale (Ventura-León & Peña-Calero, 2021).

Behavioral Assessment Scale for Children Self Report (BASC-3-SRP)

The 189-item BASC-3-SRP is an assessment battery that tests 16 subscales that form four composite scales to identify youth from the age of 12 to 21 years old with emotional and behavioral disorders and to aid in differential diagnosis. The BASC-3-SRP has 59 true or false items, and 129 items are answered on a four-point Likert scale ranging from 0 (*Never*) to 3 (*Always*), with higher scores indicating more apparent behavioral and emotional symptoms. For the purposes of this study, only the continuous rating scales for hyperactivity and attention problems were used. Acceptable values of internal consistency were obtained for the sample, both for attention problems ($\alpha = .730$, $\omega = .737$ and hyperactivity ($\alpha = .767$, $\omega = .770$).

Design and Procedure

The data were collected from public schools—one only-girls school, and one only-boys school—selected by convenience sampling. Three psychology professors participated in the translation of the questionnaires. All scales were translated from English to Modern Standard Arabic by two professors with Arabic as their mother tongue and fluent in English. Subsequently, the third professor reviewed and back-translated it for comparison with the original English instrument. After minor amendments, the Arabic version was set for data collection.

We received ethical approval from the IRB (Protocol No. MRC-01-19-479) of Hamad Medical Corporation in Qatar before approaching schools and institutions. Furthermore, the Ministry of Education and Higher Education had to determine that the questionnaire was culturally appropriate, and that the language was appropriate for students' reading levels; no changes were required after this inspection. We administered the questionnaire in two data collection sessions to avoid fatigue. In the first session, the IPDWA and ERQ were

administered in the classroom during ordinary school hours. In the second session, only the BASC-3 was administered. Prior to data collection in each session, consent was obtained from the children's parents. Data were collected between 2020 and 2021. The participants' parents responded to questions about their children's dates of birth and gender, as well as their own occupations, salary bracket, educational level, and living accommodation.

Data Analysis

We calculated descriptive statistics, reliability (Cronbach's alpha), correlations, and mean comparisons with SPSS 26.0 (IBM Corp., Armonk, NY, USA). To test direct and indirect effects, we used mediation analysis (Model 4) using the PROCESS macro (Hayes, 2022), with a bootstrapping estimation method based on 10,000 repetitions (Preacher & Hayes, 2004). The significance level was $p < .05$. Prior to the data analysis, and for the sample size calculation necessary for the IRB application, G*Power 3.1 software was used (Faul et al., 2009).

To examine Hypotheses 1–3, we conducted a correlation analysis between attachment security and ER strategies, as well as hyperactivity and attention problems. Concerning Hypothesis 4, conversely, we conducted a mediation analysis of ER strategies between attachment security (i.e., mother, father, and FDW) and hyperactivity and attention problems.

Before data analysis, we anticipated skewness with the clinical variables from the BASC-3. We used Napierian logarithms on the mean scores of the BASC-3 variables, hyperactivity, and attention problems for the total sample (Table 1). This was for the skewness of the data owing to the sample not being normally distributed, as they were non-clinical samples of adolescents and symptoms were covered in the BASC-3 dimensions. For the variables of the IPDWA and ERQ, we used the unconverted mean score. We employed the t-test and Cohen's *d* to compare mean differences.

Results

Correlation Analysis

To examine Hypotheses 1, 2, and 3, correlations were carried out. When looking at the total sample (Table 1), correlations partially supported Hypothesis 1: attachment security to the mother and father was correlated with low hyperactivity and attention problems, but attachment security to the FDW was correlated with high hyperactivity and attention problems.

Table 1
Correlations among Parental Attachment, Emotion Regulation, and Attention and Hyperactivity Problems

		1	2	3	4	5	6
1	Attachment to Mother	-					
2	Attachment to Father	.495**	-				
3	Attachment to FDW	-.098	.108*	-			
4	Cognitive Appraisal	.167**	.057	-.093	-		
5	Expressive Suppression	-.012	-.124*	-.039	.391**	-	
6	Attention problems	-.213**	-.192**	.192**	-.146*	.016	-
7	Hyperactivity problems	-.224**	-.201**	.141*	-.09	.069	.718**

Note. FDW = Foreign domestic worker.
* $p < .05$ level, ** $p < .01$ level (one-tailed).

Regarding Hypothesis 2, only maternal (but not paternal or FDW) attachment security was positively correlated with CA, and paternal (but not maternal or FDW) attachment security was correlated with low ES, partially supporting the hypothesis; the effect sizes were low in both cases, though. Hypothesis 3 was supported only for CA: higher CA was negatively correlated with attention symptoms and hyperactivity, but the coefficient was insignificant. These hypotheses were further examined in light of possible gender-based associations.

As an exploratory analysis of gender differences, we conducted a point-biserial correlation with gender (boy = 1, girl = 2); the results were insignificant (r = .019, -.032) for

attention and hyperactivity problems. Gender differences in all target variables, including attention and hyperactivity problems, can be seen in Table 2. We found two statistically significant differences in attachment to the mother (but not to the father or FDW), and in the ER strategy of ES (but not CA); both gender differences were of medium effect size and reflected higher scores for boys. Additionally, we examined correlations separated by gender. For attachment to parental figures and hyperactivity and attention problems, boys only had two out of six possible associations (i.e., three parental figures and two symptoms) that were significant: attachment security to the mother was negatively correlated with hyperactivity and attachment security to FDW was positively correlated with attention problems. Instead, for girls, all six possible associations were shown: on the one hand, as expected, attachment security to the mother and father was negatively associated with attention problems and hyperactivity; on the other hand, attachment security to the FDW was positively correlated with attention problems and hyperactivity. Overall, the higher the level of attachment security to primary parental figures, the lower the levels of hyperactivity and attention problems, mainly for girls.

Similarly, and regarding links between attachment security and ER strategies (Hypothesis 2), partial confirmation of predictions was observed: for boys, attachment security to the mother was positively correlated only with CA, whereas for girls, attachment security to the father was also negatively associated with ES. Moreover, girls' results partially supported Hypothesis 3, as their reported use of CA was negatively correlated with attention problems and hyperactivity. Overall, CA was negatively associated with ADHD symptoms or attention problems, but only with the female sample. Girls reported associations between attachment to parental (primary and secondary) figures and ADHD symptoms and between CA and ADHD symptoms.

Table 2

Mean differences and Pearson Correlations among Attachment Security, Emotion Regulation, and Hyperactivity and Attention Problems split by Gender

	Male (n = 131)		Female (n = 116)										
	M	*SD*	*M*	*SD*	*t*	Cohen's *d*	1	2	3	4	5	6	7
1 Mother	4.28	0.65	4.06	0.82	2.47 (p = .014)	0.30	-	.548**	-.045	.162*	-.142	-.282**	-.230**
2 Father	3.94	0.94	3.87	0.89	0.68 (p = .50)	0.08	.452**	-	.084	.054	-.222*	-.300**	-.269**
3 FDW	2.59	0.88	2.81	0.85	-1.95 (p = .053)	0.25	-.129	.13	-	-.049	-.016	.248**	.182*
4 CA	4.97	1.23	4.98	1.32	-0.07 (p = .948)	0.01	.179*	.06	-.132	-	.323**	-.195*	-.154*
5 ES	4.72	1.32	4.33	1.53	2.31 (p = .022)	0.27	.103	-.047	-.021	.471**	-	.09	.125
6 ATT	0.27	0.14	0.28	0.15	-0.32 (p = .746)	0.07	-.132	-.096	.144*	-.098	-.057	-	.830**
7 HYP	0.21	0.13	0.20	0.14	0.53 (p = .594)	0.07	-.234**	-.148	.118	-.029	.005	.610**	-

Note. FDW = Foreign domestic worker, CA = Cognitive appraisal, ES = Expressive suppression, ATT= attention problems, HYP = Hyperactivity. The bottom diagonal is the male sample, and the top diagonal is female sample.

* p < .05 level, ** p < .01 level (one-tailed).

Mediation Analysis

Hypothesis 4 focused on the mediation of CA and ES, ER strategies between attachment security and hyperactivity, and attention problems. To confirm the (possible) mediation, there could be no zero between the confidence levels in the indirect effect (Table 3). We considered the direct effect of attachment security on hyperactivity and attention problems in both genders.

Regressions reproduced the results of the correlation analysis, and we examined important gender differences, as found in the previous analysis. Among the male sample, attachment to the mother negatively predicted hyperactivity, while attachment to the father and FDW did not show statistical significance.

In contrast, in the female sample, attachment to the mother and father negatively predicted attention problems and hyperactivity, whereas attachment to the FDW positively predicted attention problems and hyperactivity, contrary to our expectations. We also considered the influence of attachment on ER strategies. In the male sample, we found no relationship between attachment security and ER strategies, except for attachment to the mother positively predicting CA.

In contrast, in the female sample, attachment to the father was negatively associated with ES, while attachment to the mother trended positively with CA. We examined the ER strategies' effects on hyperactivity and attention problems. Among boys, we did not find any significant relationships, whereas among girls, CA negatively predicted hyperactivity and attention problems; in addition, and only in the case of FDWs, ES positively predicted hyperactivity and attention problems. Overall, this reinforces the acceptance of our third hypothesis in the case of girls, as previously supported by bivariate correlations. However, we found no mediation, or indirect effect, with ER strategies between attachment security and hyperactivity and attention problems, giving no support to our fourth hypothesis.

Table 3

Mediation Analysis of Emotion Regulation Strategies between Attachment Security, and Hyperactivity and Attention Problems split by Gender

Relationship	Total Effect		Direct Effect		ATT -> ER		ER -> ADHD		Indirect Effect	Confidence Interval		t-statistics
										LB	UB	
Male Sample												
Mother->CA->Attention Problems	-.0277	(p =. 1025)	-.0248	(p =.1498)	.3394	**(p = .0257)***	-.0079	(p = .4422)	-.0029	-.0109	.0028	-0.853
Mother->ES->Attention Problems	-.0277	(p = .1025)	-.0267	(p = .1176)	.2097	(p = .2017)	-.0012	(p = .8987)	-.001	-.0053	.0035	-0.476
Mother->CA->Hyperactivity	-.0474	**(p = .0033)***	-.0479	**(p = .0036)***			.0000	(p = .9981)	.0005	-.0052	.0068	0.172
Mother->ES->Hyperactivity	-.0474	**(p = .0033)***	-.048	**(p = .0032)***			.003	(p = .7412)	.0006	-.0033	.0066	0.26
Father->CA->Attention Problems	-.014	(p = .2324)	-.0132	(p = .2606)	.0784	(p = .4571)	-.009	(p = .3788)	-.0008	-.0044	.0018	-0.533
Father->ES->Attention Problems	-.014	(p = .2324)	-.0144	(p = .2199)	-.0653	(p = .5645)	-.0024	(p = .7991)	.0004	-.0022	.0039	0.286
Father->CA->Hyperactivity	-.0207	(p = .0653)	-.0205	(p = .0688)			-.0026	(p = .7885)	-.0002	-.0025	.0021	-0.182
Father->ES->Hyperactivity	-.0207	(p = .0653)	-.0207	(p = .0663)			.001	(p = .9146)	.0000	-.0028	.0024	0.008
FDW->CA->Attention Problems	.0224	(p = .0999)	.0219	(p = .1124)	-.1888	(p = .1327)	-.0031	(p = .7797	.0005	-.0042	.0052	0.227
FDW->ES->Attention Problems	.0224	(p = .0999)	.0224	(p = .1017)	-.0317	(p = .8136)	.0005	(p = .9590)	.00001	-.0032	.0027	0.007
FDW->CA->Hyperactivity	.0174	(p = .1810)	.0174	(p = .1867)			-.0021	(p = .8439)	.00001	-.0048	.004	0.0048
FDW->ES->Hyperactivity	.0174	(p = .1810)	.0175	(p = .1802)			.0039	(p = .6894)	-.0001	-.0038	.0026	0.0667

Female Sample

Mother->CA->Attention Problems	-.0519	**(*p* =.0011)***	-.0473	**(*p* = .0029)***	.2608	(*p* = .0652)	**-.0224**	**(*p* = .0317)***	-.0046	-.014	.0015	-1.15
Mother->ES->Attention Problems	-.0519	**(*p* =.0011)***	-.0506	**(*p* = .0017)***	-.2668	(*p* = .1053)	.118	(*p* = .1846)	-.0013	-.0077	.0029	-0.5
Mother->CA->Hyperactivity	-.0387	**(*p* =.0083)***	-.0355	**(*p* = .0164)***			**-.0184**	**(*p* = .0579)***	-.0033	-.0115	.0013	-1
Mother->ES->Hyperactivity	-.0387	**(*p* =.0083)***	-.0365	**(*p* = .0136)***			.014	(*p* = .091)	-.0022	-.0092	.002	-0.759
Father->CA->Attention Problems	-.0507	**(*p* =.0005)***	-.0491	**(*p* = .0006)***	.08	(*p* = .5393)	**-.0243**	**(*p* = .0172)***	-.0016	-.0097	.0034	-0.5
Father->ES->Attention Problems	-.0507	**(*p* =.0005)***	-.0498	**(*p* = .0009)***	-.3824	**(*p* = .0107)***	.0098	(*p* = .2731)	-.0009	-.0078	.0052	-0.281
Father--> CA->Hyperactivity	-.0415	**(*p* =.0019)***	-.0403	**(*p* = .0024)***			**-.0193**	**(*p* = .0405)***	-.0012	-.0073	.0026	-0.5
Father->ES->Hyperactivity	-.0415	**(*p* =.0019)***	-.0392	**(*p* = .0043)***			.012	(*p* = .1474)	-.0023	-.0093	.003	-0.767
FDW->CA->Attention Problems	.0445	**(*p* = .0072)***	.0426	**(*p* = .0087)***	-.077	(*p* = .6043)	**-.0318**	**(*p* = .0026)***	.0019	-.0053	.0108	0.475
FDW->ES->Attention Problems	.0445	**(*p* = .0072)***	.0449	**(*p* = .0067)***	-.0296	(*p* = .8610)	**.0199**	**(*p* = .0303)***	-.0003	-.0074	.0039	-0.111
FDW->CA->Hyperactivity	.0295	**(*p* = .0501)***	.0281	**(*p* = .0592)***			**-.0249**	**(*p* = .0103)***	.0014	-.0042	.0081	0.483
FDW->ES->Hyperactivity	.0295	**(*p* = .0501)***	.0299	**(*p* = .0463)***			**.0186**	**(*p* = .0288)***	-.0004	-.0074	.0045	-0.143

Note. FDW = Foreign Domestic Worker. CA= Cognitive Appraisal. ES= Expressive Suppression. LB = Lower Bound, UB = Upper Bound. *Significant at the $p < .05$ level.

Discussion

This cross-sectional and correlational study examined how attachment security to primary and secondary parental figures is related to ER strategies and hyperactivity and attention problems in adolescents in Qatar, a country where ADHD-related issues are still in their nascence (Alkhateeb & Alhadidi, 2019). Our findings indicated that in this context with an FDW, adolescents' attachment to the parents promotes more adaptive strategies, such as CA, and lower levels of hyperactivity and attention problems. Although we expected that adolescents' attachment to the FDW result in further support with externalizing behavior, we found the opposite, as attachment to the FDW was positively associated with hyperactivity and attention problems. Our study also revealed intriguing gender differences: girls were mainly affected by attachment (in)security to FDWs as compared to boys, and CA was negatively associated with attention and hyperactivity problems.

Attachment, Hyperactivity, and Attention Problems

The first hypothesis, regarding attachment security relating negatively to hyperactivity and attention problems, was supported. Attachment to primary parental figures was associated with lower levels of hyperactivity and attention problems; however, this was not the case with FDWs. Higher levels of attachment security to primary figures (i.e., mother and father) were associated with lower levels of hyperactivity and attention problems, as expected, probably owing to the benefits of having a healthy support system for children to be able to control their behavior. Our study did show more associations with the mother than the father. There are differences between mothers' and fathers' effects on their adolescent sons and daughters, perhaps because of their roles within the home. This is compatible with previous findings (Brumariu et al., 2018; Buis et al., 2002; Steele & Steele, 2005; Widmer et al., 2023).

These roles can be affected by culture, as mothers are expected to take on more of the responsibility for childrearing than the father, creating different relationship dynamics (Al-

Badayney et al., 2023; Al-Matary & Ali, 2013; Theodoropoulou, 2015). Regarding FDWs, their role may not be as clear as the roles of the primary parental figures, possibly because their tenure is presumed as temporary. However, there is dependency on FDWs within the home, and they provide a sense of stability by taking care of the day-to-day household chores (Malit et al., 2018). If the role of the FDW were solely a matter of servitude, it would not have associations with children's and adolescents' behavior. As FDWs are typically women, they might be considered second or stand-in mothers. This may instill different expectations that conflict with the actual reason for their employment. Nevertheless, combining the efforts of parental figures and the FDW based on a better understanding of the situation may provide better support for children and adolescents.

Relatedly, Niederhofer's (2009) study supports the relationship between attachment quality and hyperactivity and attention problems, reporting that insecure children showed ADHD-like symptoms. In addition, Strorebø et al. (2016) suggested a clear association between ADHD and insecure attachment, and Ellis and Nig (2009) found that low parental involvement was associated with ADHD regardless of subtype (hyperactivity and inattentiveness), although this was not the case with low maternal involvement. In addition, Fearon et al.'s (2010) meta-analysis found that insecure and disorganized attachment in children increased the risk of externalizing problems, and that insecure/disorganized attachment type was more strongly associated with externalizing behavior problems in samples of boys than in girls. Although they used Ainsworth's strange situation and other observable attachment measures, they found associations between attachment styles and self-reported externalizing problems. Yet, this was done in a previous developmental stage where the self-regulating mechanisms of emotions are still in process (Zimmerman et al., 2009; Zimmerman & Iwanski, 2014). Another meta-analysis (Cavicchioli et al., 2022) examined ADHD features not only in children but also in adolescents, showing that insecure attachment styles were associated with inattention (dismissive/avoidant

and disorganized attachment) and hyperactivity (ambivalent/preoccupied). A recent study by Widmer et al. (2023) showed that it is maternal but not paternal security that seems to make a difference in longitudinal stability and effects of adolescents' symptoms of ADHD. All of this aligns with our findings, as our results suggest that a higher level of attachment security relates to a lower level of externalizing problems, but only with the primary parental figures, notably with a higher effect of maternal attachment in such an association and specially for girls.

Attachment and ER Strategies

Regarding the second hypothesis, attachment to primary parental figures, specifically to the mother, was positively correlated with CA, while attachment to the father was correlated with lower ES. Therefore, support for this hypothesis was limited as only two out of four possible associations between primary parental figures and ER were as expected. These results could be explained by the fact that children without hyperactivity and attention problems have been found to typically feel more secure in their relationship with their mothers than with their fathers (Dekkers et al., 2021; Williams & Kelly, 2005). Still, attachment to the father is relevant to the development of ER, as observed by Islamiah et al. (2023). Our finding among adolescent girls, that ES was negatively correlated with paternal attachment security, provides more support in that direction.

Concerning the third hypothesis, regarding the association between ER and ADHD symptoms, CA was related as expected to lower attention problems, probably because both are information process phenomena (Goddings et al., 2019). Adolescents' cognitive abilities are not completely developed, but they should have control over their executive functions (Ferguson et al., 2021). However, because our results are correlational, they can be interpreted as showing that persons with low ADHD-related perceptual cognitive symptoms can use more CA. Nevertheless, ES did not show associations with hyperactivity and attention problems in the case of boys and girls with primary parental figures. The association between CA and low

ADHD symptoms, hyperactivity, and attention problems (and the weak association of ES) was congruent with our meta-analysis (Chapter 2). These results may be explained as demonstrating that those with better control of cognitive functions and skills may encounter fewer issues with attention problems and hyperactivity (Christiansen et al., 2019).

Moreover, confirmation of the functional role of CA is a relevant finding, because of the cultural context. In detail, culture influences behavior and how emotions are regulated (Bebko et al., 2019; Markus & Kitayama, 1991). Individuals in collectivist cultures suppress their positive (e.g., self-pride) or negative emotions (e.g., irritation) out of regard for others' feelings or to preserve their relationships (Chiang, 2012). In individualistic cultures, autonomy is valued, and people may not feel obligated to suppress their emotions, unlike those in collectivistic cultures (Bebko et al., 2019; Markus & Kitayama, 1991). Specifically, Bebko et al. (2019) suggested that in individualistic cultures, like those in Europe and America, emotions are regulated with CA, while in collectivistic cultures (e.g., East Asian cultures), people rely on ES to regulate emotions (Bebko et al., 2019; Masuda et al., 2008). Qatar is considered part of the collectivistic culture, but owing to its high Human Development Index, it could present individualistic cultural characteristics (Al Muftah, 2018), which in turn, may explain the functional profile in this sample. Further research in collectivistic countries differing in affluence may clarify differences in the development of ER strategies.

On the contrary, as previously stated, ES was unrelated to hyperactivity and attention problems. A review by Ramzan and Amjad (2017) that focused on CA and ES reinforced the idea that individualistic cultures tend to prefer the use of emotional expression. In contrast, collectivistic cultures tend to prefer emotional suppression to maintain social harmony when with family and friends (see also Matsumoto et al., 2016), which helps explain why ES did not show a significant association with symptoms in this study. However, a weak association

between ES and ADHD symptoms was also found in other samples, suggesting that this is a common occurrence (Chapter 1).

Overall, the results show that attachment security to primary parental figures relates to high CA and lower levels of hyperactivity, attention problems, and a dysfunctional regulation style like ES. These findings reaffirm that the relationship quality with primary caregivers and parents promotes adaptive behavior and healthy ER at important developmental stages.

Attachment to FDWs, ER Strategies, and Hyperactivity and Attention Problems

The purpose of this study was to determine if the other adult in the household, the FDW, may provide additional support and contribute to the efforts of the parents. Surprisingly, there was no solid support because attachment to the FDW was positively correlated with hyperactivity and attention problems and uncorrelated with ER. While additional parental figures may provide more support at the employer's residence, this entails a level of dependency that is concerning (Malit et al., 2018). While research on the matter of FDWs has examined only different parenting styles (Al-Matary & Ali, 2013; Khalifa & Nasser, 2015; Roumani, 2005), we focused on relationship quality, clarifying that attachment does not necessarily relate to positive behavioral expression. Embracing the quality aspect may provide a different understanding that extends beyond just the methods and behavior involved in childrearing.

Although the results regarding attachment to FDWs did not support our first hypothesis, in the female sample, higher levels of attachment to FDWs were positively correlated with CA and negatively with ES, as with the primary attachment figures. This might reflect that attachment to FDWs affects behavior more than emotional control. Culturally, boys do not spend as much time with FDWs as girls. Aside from gendered family roles that lead to young girls receiving more time with the FDW than boys, time spent is a factor to consider with cultural spaces like the *Majilis*, typically an exclusive social gathering for men (Roumani,

2005; Theodoropoulou & Ahmed, 2019). To illustrate, the FDW may be required to accompany the girls on outings, which would be unusual in the case of boys during adolescence. This can foster a feeling of being monitored or receiving more care, which in turn, may account for the positive association of CA and negative association of ES with attachment to FDWs among girls.

Finally, another element that plays a role among these variables is the context; specifically, the culture. Imran et al. (2021) were able to examine two adolescent samples from different cultures—Pakistani (collectivistic) and Scottish (individualistic). They found that in both samples, primary attachment security mediated the effect of emotion-focused coping strategies on psychological well-being. However, only in the Pakistani sample did the secondary attachment figure moderate the association between emotion-focused coping and psychological well-being. Their study and ours reinforce that culture can play a role in using secondary attachment figures to support better psychological well-being, adaptive ER strategies, and adaptive behavior. Ultimately a secondary attachment figure can become a protective factor in the household and can be advantageous for the development of children and adolescents.

Gender Differences in the Association Between Attachment, ER Strategies, and Hyperactivity and Attention Problems

The female sample demonstrated stronger relationships between attachment to primary parental figures and hyperactivity and attention problems but also stronger associations between ER strategies and hyperactivity and attention problems. Dekkers et al. (2021) showed that children with insecure or disorganized attachment to their parental figures demonstrate behavioral characteristics such as hyperactivity and attention problems, impulsivity, and ER difficulties. Boys tend to express more externalizing problems (such as hyperactivity and impulsive behavior) than girls (Hindshaw et al., 2022); however, this may be explained through

the use of rating scales that have a standard score based on the general population score, masking gender differences owing to an emphasis on behavior more commonly seen in boys (Mayes et al., 2020; Walters, 2018). Girls and women have long been ignored or misdiagnosed regarding hyperactivity and attention problems, and in this study, we used the BASC-3, which does not use standard scoring based on gender (Quinn, 2005; Walters, 2018).

Moreover, the ER strategies predicted hyperactivity and attention problems more strongly in the case of girls in the mediation analysis. In the female sample, attachment to the father was negatively correlated with ES, and attachment to the mother was positively associated with CA. This negative relationship between attachment security to the father and ES did not appear in the male sample. This was probably because of the nature of the father–daughter relationship in the region. Specifically, security-instilling fathers enable daughters' emotional expression or, at least, do not impose emotional inhibition, providing a more secure home environment for expression (Ramzan & Amjad, 2017).

On the contrary, our results showed that boys may use more ES. In the mediation analysis, we found a clearer picture, but only for the female sample. Regardless of who the primary parental figure was, girls always showed a negative relationship with CA. It was only in the case of FDWs that they showed a positive relationship between ES and hyperactivity and attention problems. These results are congruent with a meta-analytical review reporting that women use more CA than men, and report a more functional profile (Tamres et al., 2002). Moreover, in the mediational analysis for girls, not only CA but also ES (i.e., only with FDWs) was related as expected to hyperactivity and attention problems. Therefore, it can be stated that the dysfunctional role of ES emerged for girls in simple mediational analysis.

Overall, it is important to consider that girls in Qatar may have extra support as compared to boys. For instance, fathers could encourage emotional expression more in their daughters than in their sons. These results point toward the need for further study on gender

differences in Qatari society as female adolescents may have a better grasp of their emotionality than do boys. Differentiating between genders may provide helpful information to understand which strategy is best suited to the situation at hand. However, it can create a bias against a specific gender, affecting the care they receive or their social interactions.

However, it is important to remember that gender generally did not moderate the association between ADHD symptoms and ER (Chapter 2). The meta-analysis did not find gender differences, but it is best to keep in mind that it was a general take that did not account for cultural differences and smaller samples that can be overshadowed by studies with a larger number of samples. Moreover, it may be the case that ER better accounts for mediating effects of internalized processes and problems, which imply looking inward and emotional awareness and clarity, than for externalized problems, as supported by Ștefan and Avram's (2017) findings. Therefore, we continued to discuss gender differences.

Role of Girls' Attachment to FDWs

Initially, we expected that the FDWs may have provided additional support, although their typical role in the house is to manage chores, not leaving much scope for interacting with the children (Malit et al., 2018; Roumani, 2005). Examining the female sample, we did not find the expected associations, disconfirming that attachment security to FDWs would have positive effects. Attachment security to FDWs was positively correlated with hyperactivity and attention problems, contrary to what was formulated in Hypothesis 1 regarding this attachment figure. The development of the relationship between girls and FDWs, compared to the primary parental figures, from childhood may show different types of maladaptive behavior. This may leave female children and adolescents with attachment issues as primary parental figures may develop jealousy or animosity toward the FDWs, creating a possibly hostile environment at home (Roumani, 2005). Understanding the development of the relationship quality with FDWs from childhood to adulthood may help avoid unfavorable emotional and behavioral

consequences. This may indicate that further attention is needed in future studies concerning relationship dynamics in a region where live-in domestic workers are prominent.

Additionally, our overall results shed light on the effect of FDWs in the female sample and can be interpreted in several ways. On the one hand, girls may have had to resort to getting closer to the FDWs owing to primary figures' neglect or lack of positive relational connection, which could have been because of the dependency on FDWs (Malit et al., 2018). The ADHD symptoms experienced remained even when an additional parental figure relationship was secure. We assume that over-reliance on FDWs creates disturbances for children, especially adolescents, similar to when their parents are in dispute (Storebø et al., 2016), as conflict at home has a strong association with adolescents' hostility toward parents and externalizing problems (Ma & Huebner, 2008; Owen & Cox, 1997).

From another perspective, there may be a confounding variable that we did not consider regarding FDWs' influence on maladaptive problems. In detail, overly dependent children may rely on the FDW when they are down or unable to regulate their emotions. This is most likely a gender-specific issue, as girls spend more time with FDWs than do boys. Further studies should include attachment to FDWs as an identifier of maladaptive behavior when parents are over-reliant on FDWs' services. Generally, there is a need for further studies on FDWs and other live-in caretakers who spend a significant amount of time with children and adolescents, as there is a lack of research on the effects of FDWs on children's emotional and behavioral development.

Finally, ER strategies did not mediate the relationship between attachment to parents and hyperactivity and attention problems. This is surprising but in line with Ștefan and Avram (2017), who investigated the mediating effects of ER between attachment and internalizing and externalizing problems and found a mediating role of ER in the case of internalizing problems. The authors utilized three adaptive ER strategies (i.e., comforting, distraction, and problem-

solving) that demonstrated positive associations with attachment security and negative associations with internalizing and externalizing problems, following a similar direction to our results. However, we measured only two strategies, which restricts the generalizability of our results.

Limitations and Future Directions

To our knowledge, this is a pioneering study on this topic in the Middle East regarding children's viewpoint in the interplay of the constructs of interest. However, this study had several limitations that should be addressed. First, the correlational data did not allow us to make causal inferences. Second, data collection was based on convenience sampling, which limits the generalizability of the results, as compared to the use of random sampling procedures. Third, the responses regarding attachment security, ER strategies, and hyperactivity and attention problems were provided by adolescents themselves; multiple informants, such as both parents and the FDWs, would have greatly advanced the understanding of the relationships in question. Finally, although we planned to control for socioeconomic status (e.g., Antolín-Suárez et al., 2020; Barry et al., 2022), this variable was not considered because a lower-than-expected number of parents provided this information.

Based on the results presented here, future research should longitudinally investigate the development of the relationship between FDWs, children, and other family members and conduct gender-stratified analyses. While Nagy (1997) reported cases where FDWs were integrated within their employers' family structures, we are unaware of the processes and time required for FDWs' relationships with their employers' families to fertilize into perceived kinship; this may be valuable for research on socioemotional development across childhood and adolescence. In addition, we encourage future research programs that investigate how different cultures and home environments affect the relationship of primary and secondary parental figures with the children developing adaptive behaviors and ER strategies, as FDWs

are a common figure across the Middle East and some eastern Asian countries. In addition, the role of an individual as a secondary caregiver is evolving and changing throughout the generations. Preparing future parents for parenthood and understanding family roles, particularly on how to take care of children in modern settings with the long-term presence of FDWs, may provide a nourishing environment for children's development. Furthermore, having additional inputs from the parents on the relationship between secondary parental figures and children would allow for a better understanding of the dynamics and home environment supporting the child. Concerning the reality of the children who participated in this study, having more participants without FDWs may have resulted in a better comparison of FDWs' effects in the context of Qatari society.

Furthermore, regarding ER, we only analyzed a commonly examined adaptive strategy (i.e., CA) and a maladaptive strategy (i.e., ES) through Gross and John's (2003) bidimensional questionnaire. ER may be assessed not only as a trait-like variable (John & Gross, 2004) but also by analyzing the use of specific strategies in relation to the discrete negative emotions elicited, as Zimmerman and Iwanski (2014) suggested; in their study, ES was significantly predicted by some specific (discrete) negative emotions. Some studies suggest that specific ER strategies would reveal more specific information to understand adolescents' ER (e.g., Cracco et al., 2017; Gullone et al., 2010) and also to predict adolescents' symptoms and their links with parental attachment (e.g., House et al., 2023). Thus, future research may extend House et al.'s (2023) work on categorical emotions and specific ER strategies associated with them, by analyzing the singular relational dynamics in Middle East and North Africa.

Implications

Investigating the time spent with FDWs can shed light on the quality of care and the type of interaction, which may provide insight into whether FDWs make a cohesive effort with the parents or whether they inadvertently work against the general goal of development.

Suggestions for therapeutic benefits may include improving the cohesive engagement of primary and secondary parental figures as one team; providing better quality of care for the child while understanding the roles of the parents and FDWs; and giving each parent equity in roles (Ahmed, 2013). Another suggestion is the development of different education programs that would help parental figures learn how to identify emotion dysregulation and how to teach children adaptive strategies that can improve their quality of life and relationships. Additionally, education programs can be specifically directed at parents to help them understand that neglectful behavior and over-delegating parental duties to the FDW may create a rift in the relationship with their children, which can produce these maladaptive behaviors.

Conclusions

In conclusion, we clarified the relationship between adolescents' attachment to primary parental figures and hyperactivity and attention problems. Attachment to primary parental figures was positively associated with CA and negatively with ES and hyperactivity and attention problems, with some particular specifications. However, attachment to the FDW had positive correlations with hyperactivity and attention problems for female participants, and an association with functional regulation appeared only in mediational analysis. Therefore, there is substantial evidence to further investigate the role of FDWs in Qatar's sociocultural context. Interestingly, there were no significant mediating ER strategies for the relationship between attachment security and hyperactivity and attention problems. In girls, there was a stronger association between attachment, ER, hyperactivity, and attention problems. However, this result was not supported as a general trend by our meta-analysis. Gender differences and the role of women in Qatari society are important issues, and future longitudinal and cross-cultural studies are needed to address the interconnections of attachment security, ER, externalizing symptoms, and gender differences.

CHAPTER 5:

GENERAL DISCUSSION

General Discussion

The discussion goes over the three studies presented in this thesis. We aimed to disentangle the associations of emotion regulation (ER) and attention-deficit/hyperactivity disorder (ADHD) symptoms; validate an attachment security questionnaire in Arabic; and investigate the effects of ER strategies between attachment security and ADHD symptoms (hyperactivity and attention problems). The general findings demonstrated that hyperactivity and attention problems in ADHD relate to ER strategies and to attachment security to primary parental figures and foreign domestic workers (FDWs). Chapter 2, the meta-analytic study, demonstrated the general relationship of ADHD with ER and dysregulation. The reliable and validated Inventory of Parent and Domestic Worker Attachment (IPDWA; Chapter 3) helped determine if ER mediates the relationship between attachment security to both primary (mother and father) and secondary parental figures and ADHD symptoms (hyperactivity and attention problems). In Chapter 4, although there was no mediation of ER, as initially hypothesized, FDWs predicted hyperactivity and attention problems in girls. In the following sections, we will break down the conclusions for each study and discuss them in light of the existing literature.

Findings from the Meta-Analysis: What Have We Learned from the Association Between Emotion (Dys)regulation and ADHD?

The meta-analysis established the base of this thesis regarding the association between ER and ADHD symptoms. Taking a range of age groups and clinical and non-clinical samples into consideration, it provided a wider scope than previous meta-analyses. Beheshti et al.'s (2020) meta-analysis revealed that adults with ADHD had significantly higher levels of emotion dysregulation. This led Beheshti et al. (2020) to support emotion dysregulation as a core feature of ADHD's psychopathology and to conclude that emotional lability and negative emotional responses play a more definitive role in the psychopathology of adults with ADHD.

However, Beheshti et al.'s (2020) systematic review focused on adults and did not include facets of ER. Conversely, Graziano and Garcia's (2016) meta-analysis investigated studies on the association of ADHD symptoms with four dimensions of emotion dysregulation: emotion recognition/understanding, emotion reactivity/negativity/lability, ER, and empathy/callous-unemotional traits. They found that emotion dysregulation is persistent in those with ADHD across developmental stages, concluding that it is a core component of the disorder. While Graziano and Garcia (2016) did not restrict their meta-analysis to only adults, they, like Behesthi et al. (2020), did not explore ER strategies. We took a step further by considering ER strategies and found associations with ES and CA that can be helpful for future studies. Our meta-analysis provided strong evidence for the positive association between ADHD symptoms and emotion dysregulation: r = .397 (95% *CI* [.366, .427]). Graziano and Garcia (2016) found a similar effect size in ADHD's relationship with emotion dysregulation (i.e., r = .37) in young children. However, our sample was larger and included more recent studies covering a range of ages from children to adults. It is important to note that effect sizes were strong and in the high quartile (see Gignac & Szodorai, 2016).

ER was negatively associated with ADHD forms (r = -.343), and the effect size was similar for direct regulation forms (r = -.318). Moreover, adaptive ER, such as CR, was negatively correlated with ADHD forms (r = -.267). On the contrary, less adaptive ER, such as rumination, was positively associated with ADHD forms (r = .313). However, another less adaptive ER strategy—ES—was weakly correlated with ADHD (r = .076), but the regression coefficient was insignificant. In the moderation analysis, even with a reduction of homogeneity with several different moderators, the trend was maintained and demonstrated strength: ADHD continued to show a negative relationship with ER and a positive relationship with emotion dysregulation. Effect sizes for dysregulation and regulation were higher when the rater was a parent or caregiver and lower for self-report (similar to Graziano & Garcia, 2016). It was

possible that parents' ratings had a sort of halo effect, showing convergence or congruence between measures. Participants (i.e., across self-reports), on the contrary, were probably more accurate in self-judgment and displayed self-enhancing reactions, eroding the association between ADHD symptoms and ER.

Comparing the difference between clinical and non-clinical groups, the clinical group showed a lower correlation with emotion dysregulation, probably because the variability of ER and ADHD symptoms was higher in the last type of sample. Additionally, an important result is that age and gender did not moderate the association between ADHD symptoms and emotion dysregulation and regulation. Congruent with our results, Graziano and Garcia (2016) did not observe sex differences and found similar associations across developmental stages. Unlike other areas, it can be concluded that ER-related deficits are equally strongly associated with ADHD symptoms in both genders and at different stages of child and adolescent development. Overall, the meta-analysis showed that functional ER, with strategies such as CR, will most likely be negatively correlated with ADHD symptoms. On this matter, recent studies found that training adults, children, and adolescents with ADHD to employ CA reduces inattention and impulsivity symptoms (Hamerman & Cohen, 2022).

Additionally, these results suggested that ADHD symptoms are, first, related to deficits in the capacity to shift attention and thought from negative emotions (as per the strong positive association between rumination and symptoms), and second, to deficits in the capacity to reorient attention and thought positively (reflected in the strong negative association between CA and ADHD symptoms). However, possibly because of the impulsivity and lowered ability to inhibit responses triggered by strong emotions evident in ADHD, ES may not be a form of ER that can be utilized.

Congruently, this meta-analysis provided crucial evidence that was needed for the following chapters to determine if ER can be correlated with ADHD symptoms. Specifically,

we tested this assumption using the ER questionnaire that measures CA and ES. The meta-analysis gave clear evidence and led us to believe that CA is negatively correlated with ADHD symptoms and that ES is positively correlated.

Developing and Examining an Attachment Measure in Arabic for Primary and Secondary Figures: IPDWA Validation

Before evaluating the relationship between attachment, ER, and ADHD symptoms, it was necessary to develop and validate the IPDWA self-report, an assessment tool that, stemming from a short version of the modified Inventory of Parent and Peer Attachment (Gallarin & Alonso-Arbiol, 2013), replaced peers with FDWs as an attachment figure. This was done to support our third study: to add an understudied parental figure to the Qatari family and household equation. Adding a reliable and validated questionnaire regarding attachment security to FDWs could be an important step forward in understanding the home environment and its effects on children's development in the MENA region (Al-Matary & Ali, 2013; Al-Matary & AIjohani, 2021; Chan, 2005).

The instrument's structure was examined with confirmatory factor analysis; the factor validity of the Arabic version of the IPDWA, for use with parents and FDWs, was established. It had a one-factor structure as with other linguistic versions of the short form of the Inventory of Parent and Peer Attachment (e.g., Alonso-Arbiol et al., 2014; Gallarin & Alonso-Arbiol, 2013; Baiocco et al., 2009; Günaydin et al., 2005), and the correlations aligned with the literature analyzing the two parental (primary) attachment figures. As expected, attachment to the mother and father had similarities, whereas attachment to the FDW was different (e.g., van IJzendoorn et al., 1992). This validation confirms that the Arabic version of the IPDWA can be used in adolescents of the GCC region. Although there was no significant relationship between attachment to the mother and conflict in the male sample, in the female sample, there was a negative correlation between attachment to the mother and conflict. Thus, girls may be

more greatly affected by their relationship with their mothers than is the case with boys. In the male sample, attachment to the father was correlated with the Conflict subscale. Gender plays a role in the different interactions with each parent, which may affect attachment security (i.e., mother–child relationships: Allen et al., 2003; father–child relationships: Bretherton, 2010; Gambin et al., 2021; van Polanen et al., 2017). We showed a greater significance of the role of the mother than of the father. This was expected because of the gender roles of the parents, as mothers are responsible for childrearing (Al-Badayney et al., 2023; Theodoropoulou, 2015). This should encourage future studies to explore the gender differences in family dynamics when an FDW is employed.

This addition would enable the use of diverse options for exploring adolescents' cognitive and emotional development. Therefore, having a valid and reliable option for measuring attachment security would be very useful in the MENA region. The Modern Standard Arabic version of the IPDWA provides clinicians and mental health practitioners with a valuable tool for improving the quality of children and adolescents' relationships with their primary parental figures and FDWs, from their own perspective. This opens up avenues for research on the combined effects of primary and secondary attachment figures on adolescents; socioemotional normal and maladjusted development has mostly been discussed in the context of children (e.g., Bowlby, 2007; Degotardi & Pearson, 2009), remaining remarkably understudied in adolescence.

What Is the Role of Parental Figures and Attachment to FDWs in Adolescence, and of ER in Understanding Adolescents' ADHD Symptoms?

The third and final study examined the association of attachment security to the primary parental figures (i.e., mother and father) and secondary parental figure (i.e., FDW) with ER strategies (CA and ES) and ADHD symptoms (hyperactivity and attention problems). Attachment to primary parental figures was negatively correlated with ADHD symptoms.

However, attachment to the FDW was positively correlated with ADHD symptoms. Although it was trending in the male sample, we found a stronger relationship among girls. Overall, the results show that attachment security to primary parental figures is correlated with lower levels of hyperactivity, attention problems, and ES.

The results derived from the total sample of Study 3 showed that parental attachment was correlated with lower levels of ADHD symptoms. Other studies (e.g., Dekkers et al., 2021) have shown that children with insecure or disorganized attachment to their parental figures have similar behavioral characteristics with ADHD, such as hyperactivity, impulsivity, and ER difficulties. Our results suggest that attachment security and ADHD symptoms are related, but only in the case of primary parental figures. Contrary to what was expected, attachment security to FDWs was positively correlated with attention problems and hyperactivity. One explanation is that FDWs may not have provided additional emotional support because their role is to take care of household chores; therefore, their interaction with the children may have been limited. Overall, this may indicate a need to pay attention to the relationship dynamics in a region where live-in domestic workers are prominent.

The association between attachment security and ER strategies derived from the total sample can partially be accepted. Attachment to the mother was positively correlated with CR, while attachment to the father was negatively correlated with ES. However, attachment to the FDW was related to ER and positively correlated with as to ADHD symptoms. Our results are congruent with Pallini et al.'s (2018) meta-analysis that found an association of $r = .20$ between attachment security and effortful control and self-regulation, similar to the magnitude revealed in ours.

CA was negatively correlated with ADHD symptoms, as expected, in the total sample (i.e., $r = .15$). However, only in the female sample was CA negatively correlated with attention problems. Furthermore, ES was weakly associated with ADHD symptoms, suggesting that this

strategy may not be so relevant for ADHD; overall, this was congruent with Chapter 1 meta-analysis results. In our meta-analytical integration, CA (k = 15, r = -.25) was strongly correlated with ADHD symptoms, whereas ES (k = 4, r = .069) was weakly correlated with ADHD symptoms.

Previous studies (Bebko et al., 2019; Masuda et al., 2008) have suggested that in individualistic cultures, such as Europe and America, emotions are regulated with CA, while East Asian cultures rely on the strategy of ES. This can explain why ES did not show a significant association with attachment (in)security across all parental figures. Still, it is important to remember that our meta-analysis revealed that ES was weakly correlated with ADHD symptoms. In all, our study showed that CA was considered adaptive and used in Qatar by young people, who are supposed to be collectivists. However, we should bear in mind that this general assumption should be individually examined, as inter-individual variability may be expected within Qatari society; therefore, future research may include measurement of adolescents' individualistic and collectivistic values for a culturally flavored conclusion.

Additionally, while gender differences were observed for associations among variables, there were no differences in symptoms. Boys scored higher on the use of ES strategy, but there were no differences in the use of CA. This may be owing to the sample's developmental stage, where cognitive strategies are not easily accessible because of a lack of cognitive control (Goddings et al., 2019; Ferguson et al., 2021). Alternatively, this could have been influenced by culture (Ramzan & Amjad, 2017). Culture can influence many facets of emotional expression and socially acceptable forms of ER. When religiosity and spirituality overlap with culture (Taves et al., 2019), we may find a potential avenue to explore gender differences. Although ours and previous meta-analyses did not find any gender differences, this may be because of a different form and scope of the investigation, where culture was not a moderator with enough variability to show different results. As for gender, the percentage strategy in

meta-analyses for the examination of its moderating effect is a very indirect one, and unlikely to reveal less evident gender differences. Different strategies that were not investigated may provide further insight into similarities and differences for future studies. This should not discourage future researchers from investigating gender differences.

The fourth hypothesis questioned whether ER strategies (i.e., CA and ES) mediate the direct effect of adolescents' attachment security (i.e., mother, father, and FDW) on ADHD behavior. The results revealed no such mediation. This could have been owing to the sample's relatively low mean age, which was meant to tap into cognitive and inhibitory strategies, and because the selection of ER was limited. In the mediational analysis, the female sample's attachment to FDWs was correlated with low ADHD symptoms and functional ER, but this was not the case with the male sample. Moreover, the bivariate analysis showed a positive association between attachment to FDWs and ADHD symptoms, where girls associated with both forms and boys did not.

This overall trend of live-in FDWs' effect could be analyzed under the lens of a society that is overprotective of their children, especially girls, and where most homes have FDWs, who interact more with girls than boys. Previous studies in Qatar (Khalifa, 2009; Khalifa & Nasser, 2015) have suggested that higher dependence on FDWs may result in maladaptive problems. If children were to experience increased attachment to FDWs, it might result from the parents' negligence or overly high dependence on FDWs. Future studies on FDWs and other live-in caretakers, who interact and spend a significant amount of time with children and adolescents, should be investigated, as research on the effects of FDWs on children's emotional and behavioral development is lacking.

In general, we can conclude that using less adaptive ER strategies may contribute to increased levels of ADHD symptoms. Furthermore, this association is not moderated by age or gender, and secure parental attachment is associated with fewer ADHD symptoms and greater

functional ER, such as CA. Moreover, future interventions for people with ADHD could increase the use of CA with therapeutic goals (Hamerman & Cohen, 2022). An examination of a larger selection of ER strategies (e.g., modification of situation, searching for social support, acceptance, or ER response modulation, like regulated emotional expression and self-control) is necessary, both to understand affective regulation as well as for therapeutic intervention.

Recommendations for Future Research

We recommend further investigation of the relationship between children and FDWs with regard to different symptoms and disorders (such as symptoms related to mood and personality disorders). Future research should direct efforts toward investigating the secondary parental figures normally not found in Western societies, such as domestic workers like drivers and cooks, and other family members in Qatari households, such as grandparents. Comparing families that employ FDWs and those that do not to observe the differences in relationship quality between family members may yield insightful results. Additionally, cross-cultural studies that utilize domestic workers may demonstrate acute differences not typically observed in cultures with common social features as that of Gulf nations. Although Gulf countries have similar cultures and economies, they may also have different family ecosystems that present a wider scope of the role of FDWs present in the family and the household. Making comparisons with countries like China (e.g., Chan, 2005) can further our understanding of whether FDWs promote a better household environment. Most studies have only taken the perspective of the employers (i.e., the parents) and their children; future studies should take the perspective of the FDWs and, particularly, how it affects the interactions between the children and the parents in the home environment. Researchers should focus on the well-being of not just the employers but also the FDWs, as they are a vulnerable population who have left their home countries to find a way to survive and provide for their families. New policies and research should incorporate their psychological well-being to promote better conditions for them (Naufal &

Malit, 2018). If all members in a household, including the FDW, are psychologically healthy, it would promote adaptive coping mechanisms. Secondary attachment figures have been shown to promote better coping mechanisms and play a different role than parents, considering that they can provide appropriate support (Imran et al., 2021). Longitudinal studies on the development of relationship quality among family members across FDWs' span of work would provide great insight. This could help us gain an understanding of the relationship between FDWs' dynamics and which interactions or activities they may engage in over time. If we can determine a timeline, we will be well equipped to locate when to implement different types of support to nurture the relationship and which strategies may fit best. Additionally, therapeutic benefits may be achieved by improving the cohesive engagement of primary and secondary parental figures as one team, ensuring better quality of care for the child or adolescent while understanding the roles of the parents and the FDWs, and giving each equity.

Future implications are directed at helping parents and teachers recognize what healthy ways of regulating emotions look like, and that a lack of ER strategies can present as a lack of attention or the inability to sit still owing to being unregulated and feeling anxious. Clinicians may further develop treatments with attachment-focused therapy (Bosmans et al., 2022; Olufowote et al., 2020), addressing problems that may arise with the presence of the FDW in the home environment. It is not typical to find case studies that integrate FDWs into therapy. In the case of Qatar and similar Gulf countries, the concern of FDWs has been made aware (Malit et al., 2018), but integrating FDWs into therapy as an active member of the household may benefit the treatment of the child or adolescent and even the family as a whole. Parents may learn methods that can help the family benefit from their relationship with the FDW rather than being negatively affected by it. This is also crucial for parents to reflect on whether having any domestic worker is necessary or whether their employment is a form of dependency for which they may eventually have to pay dearly in terms of sons'/daughters' socioemotional

development. FDWs may not be compatible with the home environment, creating conflicts and disagreements. Parents are encouraged to use methods to counter possible issues, either by integrating the FDW as a member of the household rather than a one-dimensional service provider or by setting clear boundaries and limiting the FDWs' time spent with the children following their employment agreement. In addition, teachers may develop a further understanding of children's well-being if they interact more with FDWs and parents together to support the children regarding schoolwork. Regardless of the environment and context, the effects of FDWs' presence on children's well-being and development are understudied (Naufal & Malit, 2018).

In conclusion, this study demonstrated a strong relationship between attachment security and ADHD symptoms, and a relationship between ER and ADHD symptoms. However, we did not find evidence that the ER strategies of CA and ES mediate the relationship between attachment security and ADHD symptoms. The most pressing result is the FDW predicting hyperactivity among girls, as it has been discussed that girls spend more time with the FDW owing to gendered activity organization. A Qatari adolescent girl in a typical Qatari family, spent qualitatively and quantitatively more time with FDW compared to the male Qatari adolescent. Extensive research can be conducted on the topic of FDWs and their effects on family members' emotional well-being.

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ANNEXES

INSTITUTIONAL REVIEW BOARD

HAMAD MEDICAL CORPORATION
DOHA-QATAR

Saleem Khaldoon Al Nuaimi Consultant, Corporate Hamad Medical Corporation Doha-Qatar	Email: irb@hamad.qa Tel: 00974-40256410 HMC-IRB Registration: MoPH-HMC-IRB-020 IRB-MoPH Assurance IRB-A-HMC-2010-0014
APPROVAL NOTICE	
Protocol No. :	MRC-01-19-479
Protocol Title :	Foreign Domestic Worker the invisible Attachment figure: Mediating Emotion Regulation between Attachment Security and ADHD in Adolescents
QNRF/Other Reference Number :	NA
Date of HMC-IRB Approval :	04 October 2020
Date of Letter Issued :	04 October 2020
Review Type :	Expedited
Decision :	Approved
Approved HMC Enrollment :	900 [800 Controls, 100 Clinical], 300 (Pilot Phase)
NPRP Grant Holder :	NA

The IRB has reviewed the submitted documents of the above titled research and approval for the study has been granted. The list of approved document(s) is attached.

IRB oversight expires 12 months from the date of approval indicated above. It is the responsibility of the investigator to ensure timely renewal of study oversight. Progress reports for continuing review must be approved prior to expiration date therefore, submissions must be received by the IRB 60 to 90 days prior to the expiration date.

Requested Resolutions: PI to share the results of the pilot phase and modified documents for IRB review and approval prior to implementing in the main study.

Any resolutions submitted must include a letter indicating that the submission is a follow up request by the IRB, this will ensure that resolutions are processed appropriately and in a timely manner.

Please note, this approval only covers HMC, you may also need approvals from other institutions involved in your study. You should not start your study until all of these have been obtained.

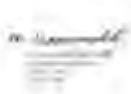
If you have any questions or need additional information, please contact IRB at the abovementioned email address or telephone number.

Important Note: The list of your responsibilities as Principal Investigator is attached to this letter.

Sincerely,

Chairman of Institutional Review Board: _____

Date: _____



Signature:

List of Approved Documents:

S.No	DOCUMENTTYPE	DOCUMENTNAME	LANGUAGE	NOOFPAGES	VERSIONNO
1	Research Protocol	MRC-01-19-479_ResearchProtocol_V1.0_04-OCT-20_43Pages_856363.12_04-OCT-20_43Pages_856363.pdf	English	43	V1.0
2	Questionnaire/ Survey	MRC-01-19-479_Questionnaire/Survey_Ara_V1.0_04-OCT-20_4Pages_1479859.2_04-OCT-20_4Pages_1479859.pdf	Arabic	4	V1.0
3	Questionnaire/ Survey	MRC-01-19-479_Questionnaire/Survey_Ara_V1.0_04-OCT-20_7Pages_1479928.2_17-AUG-20_7Pages_1479928.pdf	Arabic	7	V1.0
4	Questionnaire/ Survey	MRC-01-19-479_Questionnaire/Survey_Eng_V1.0_04-OCT-20_4Pages_1479944.2_17-AUG-20_4Pages_1479944.pdf	English	4	V1.0
5	Questionnaire/ Survey	MRC-01-19-479_Questionnaire/Survey_Ara_V1.0_04-OCT-20_6Pages_1499488.2_04-OCT-20_6Pages_1499488.pdf	Arabic	6	V1.0
6	Questionnaire/ Survey	MRC-01-19-479_Questionnaire/Survey_Eng_V1.0_04-OCT-20_7Pages_1499505.2_04-OCT-20_7Pages_1499505.pdf	English	7	V1.0
7	Questionnaire/ Survey	MRC-01-19-479_Questionnaire/Survey_Eng_V1.0_04-OCT-20_4Pages_1811433.2_04-OCT-20_4Pages_1811433.pdf	English	4	V1.0
8	Questionnaire/ Survey	MRC-01-19-479_Questionnaire/Survey_Eng_V1.0_04-OCT-20_5Pages_1900396.1_04-OCT-20_5Pages_1900396.pdf	English	5	V1.0

9	Questionnaire/ Survey	MRC-01-19-479_QuestionnaireSurvey_Ara_V1.0_04-OCT-20_5Pages_1900397_1_04-OCT-20_5Pages_1900397.pdf	Arabic	5	V1.0
10	Research Consent Form	MRC-01-19-479_ResearchConsentForm_Ara_V1.0_04-OCT-20_6Pages_1900399_1_04-OCT-20_6Pages_1900399.pdf	Arabic	6	V1.0
11	Questionnaire/ Survey	MRC-01-19-479_QuestionnaireSurvey_Eng_V1.0_04-OCT-20_5Pages_1900424_1_04-OCT-20_5Pages_1900424.pdf	English	5	V1.0
12	Questionnaire/ Survey	MRC-01-19-479_QuestionnaireSurvey_Ara_V1.0_04-OCT-20_5Pages_1900425_1_04-OCT-20_5Pages_1900425.pdf	Arabic	5	V1.0
13	Assent Form	MRC-01-19-479_AssentForm_Ara_V1.0_04-OCT-20_4Pages_1900426_1_04-OCT-20_4Pages_1900426.pdf	Arabic	4	V1.0
14	Research Consent Form	MRC-01-19-479_ResearchConsentForm_Eng_V1.0_04-OCT-20_6Pages_1900440_1_04-OCT-20_6Pages_1900440.pdf	English	6	V1.0

Hamad Medical Corporation
Institutional Review Board

Email: irb@hamad.qa Tel: 00974-40256410

HMC-IRB Registration: MoPH-HMC-IRB-020

IRB-MoPH Assurance: IRB-A-HMC-2015-0014

Responsibilities of the Principal Investigator:

As the Principal Investigator of this research project, you are ultimately responsible for:

- Protecting the rights, safety and welfare of research subjects
- Following the IRB-approved protocol (application and any materials submitted with it, e.g., only research team members designated to obtain consent on the scheme of delegation should only do so and no other personnel)
- Ensuring that the inclusion and exclusion criteria are adhered to before enrolling participants in research studies
- Maintaining confidentiality of the subjects by not sharing Patient Identifiable Information outside HMC Facility
- Maintaining privacy of the subjects by performing research related procedures on subjects in private settings
- Reporting serious adverse events and serious unanticipated problems to the HMC-IRB and the other relevant compliance entities of HMC within 24 Hours of knowing about it
  - "Serious Adverse Event" (SAE) is any adverse event temporally associated with the subject's participation in research (whether or not considered related to the subject's participation in the research) that meets any of the following criteria:
    - results in death;
    - is life-threatening (places the subject at immediate risk of death from the event as it occurred);
    - requires inpatient hospitalization or prolongation of existing hospitalization;
    - results in a persistent or significant disability/incapacity;
    - results in a congenital anomaly/birth defect; or
    - any other adverse event that, based upon appropriate medical judgment, may jeopardize the subject's health and may require medical or surgical intervention to prevent one of the other outcomes listed in this definition.
- Keeping the source documents (i.e. Owner's medical records) updated regarding the enrolment of the patient, the MRN, study number and study related procedures for each subject involved in the study.
- Using only HMC IRB stamped documents at HMC facilities while conducting the research. These documents might have other institution's IRB stamp if applicable.
- Following the requirements of HMC IRB policies, especially with regard to obtaining prior approval of changes to the research, reporting events or new information, progress reports before the expiry of the IRB approval by 60-90 days and final reports.
- Making sure that no study procedures should be conducted after the expiry date of the ethical (IRB) approval.
- The conduct of the study team with regards to all of the above.

Sincerely,

Signature

Dr. Mohammed Hammoudeh

Chairman, Institutional Review Board

Hamad Medical Corporation

وزارة التعليم والتعليم العالي
الصادر جهات خارجية
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10/12/2020

تصريح الموافقة لدخول المدارس

السادة مدراء المدارس المحترمين،،،

السلام عليكم ورحمة الله وبركاته،،،

نود إحاطتكم علماً بأن الباحث / الباحثون : أحمد محمد

المرفق لكم بياناتهم، بصدد إجراء دراسة ميدانية في مدرستكم وعليه يرجى التكرم بتسهيل مهمة الباحث ، علماً بأن البيانات ستكون سرية ولأغراض البحث العلمي.

مع الشكر لحسن تعاونكم ،،،

ع/ نوف عبدالله مبارك الكعبي
مدير إدارة السياسات والأبحاث التربوية

إرشادات عامة

لتيسير عمل الباحث في إعداد الأبحاث التربوية عليه أن يلتزم بجملة من الإرشادات أهمها:

1. الحصول على موافقة وزارة التعليم والتعليم العالي لإجراء البحث / الدراسة، عن طريق مخاطبة إدارة السياسات والأبحاث التربوية قبل تطبيق البحث.
2. أن يشتمل الطلب المقدم من الباحث على:
   أ. خطاب من الجهة التابع لها الباحث مسبقا
   ب. نسخة من أدوات البحث تكون مكتملة ومحكمة وفي صورتها النهائية.
   ت. إرفاق استمارة طلب تسهيل مهمة باحث موضحة كافة المعلومات اللازمة.
3. يرتبط موضوع البحث / الدراسة باختصاصات وزارة التعليم والتعليم العالي.
4. تزويد إدارة السياسات والأبحاث التربوية بنسخة من البحث / الدراسة عند الانتهاء ورقياً وإلكترونياً.
5. التعهد بالمحافظة على سرية المعلومات والبيانات وأن تستخدم لأغراض البحث فقط.
6. تطبيق أدوات البحث / الدراسة قبل مواعيد الاختبارات الفصلية أو النهائية بأكثر من 30 يوما على الأقل، ويمنع تطبيق لأي أداة في فترات الاختبارات.
7. التقيد بالتقويم السنوي للمدارس عند تطبيق أدوات البحث / الدراسة.
8. يسمح للباحث مالا يزيد عن 3 أبحاث / دراسات في العام الواحد.
9. قد يتطلب البحث / الدراسة الحصول على رأي الوحدات الإدارية المختصة قبل موافقة إدارة السياسات والأبحاث التربوية، لذا يجب أن يتقدم الباحث بطلبه إلى إدارة السياسات والأبحاث التربوية بوقت كاف.
10. لن تقوم الوزارة بتطويع الأدوات أو إرسال الاستطلاعات إلى المدارس لأي باحث، إلا في حال وجود شراكة بحثية موثقة بين الباحث والوزارة.
11. التقيد بالفترة الزمنية لتنفيذ البحث، وفي حال التأخر في تطبيق أدوات البحث، يرجى إعادة الطلب.
12. يلتزم الباحث بأخلاقيات البحث المعتمدة، ويحق للوزارة إيقاف العمل على البحث / الدراسة في حال ثبت عكس ذلك.

⌘ أتعهد أنا الموقع أدناه بالالتزام بكافة الإرشادات التوجيهية الصادرة من قبل إدارة السياسات والأبحاث التربوية

اسم الباحث : أحمد محمد   التوقيع : احمد

تسهيل مهمة الباحث في المدارس

بيانات الباحث	
اسم الباحث	أحمد محمد
الجهة المشرفة (جامعة / كلية)	HMC + Universidad Del Pais Vasco (UPV/EHU)
جهة العمل	HMC + Universidad Del Pais Vasco (UPV/EHU)
هاتف العمل أو المنزل	الهاتف النقال: 55307611
البريد الالكتروني (الوظيفي أو الجامعي)	902868@kasle.ehu.eus
البريد الالكتروني (الشخصي)	Ahmed.a.mohd@gmail.com
الرقم الشخصي	8 5 1 3 0 4 3 6 0 9 7
التخصص الجامعي	علم النفس

بيانات الأعضاء المشاركين بالبحث			
أسماء المشاركين	1. أحمد محمد	الهاتف النقال	55307611
	2. سالكيم التهمي		66458147
	3. اكتب أو امسح هنا الإدخال نصي		
	4. اكتب أو امسح هنا الإدخال نصي		
أسماء أخرى	اكتب أو امسح هنا الإدخال نصي		

بيانات البحث					
عنوان البحث (بالعربي)	العاملة المنزلية الأجنبية رقم المرفق غير المرئي: لائحة الانفعالات الوسيطة بين امن التعلق واضطراب فرط الحركة ونقص الانتباه لدى المراهقين				
عنوان البحث (بالانجليزية)	Foreign Domestic Worker the invisible Attachment figure: Mediating Emotion Regulation between Attachment Security and ADHD in Adolescents				
الغرض من إجراء البحث	☑ إنهاء متطلبات علمية (يذكر) : رسالة دكتوراه		☐ غرض اخر (يذكر) : اكتب أو امسح هنا الإدخال نصي		
إسم الفئة المستهدفة	طلاب المدارس الثانوية				
المرحلة الدراسية للفئة المستهدفة	المدارس الثانوية	العدد	1300		
الجهة المستفيدة من نتائج البحث	ويمكن اكتساب الفوائد المحتملة من خلال فهم كيفية تأثر الانماط الغذائية بالاغلاق وما إذا كان بإمكاننا تطوير تدخلات لتحسين تغذية الناس وانماطهم الغذائية.				
الفترة الزمنية التي ينفذ فيها البحث	تاريخ بدء تطبيق ادوات البحث	من تاريخ موافقة الوزارة	تاريخ نهاية تطبيق أدوات البحث	2021-06-30	الزمن المتوقع لاكتمال البحث	8 أشهر

عينة البحث	طلبة المدرسة الثانوية، بين سن 12 الى 17 عاما
ملخص البحث	⌘ تهدف الدراسة إلى التحقق من العلاقة بين أمان التعلق تجاه الشخصيات الأبوية (الأم، الأب، الخادم الأجنبي المباشر) وكيف تتوسط استراتيجيات تنظيم العاطفة بين سلوك اضطراب فرط الحركة ونقص الانتباه عند مشاركة شخصية أبوية ثانوية. الهدف الأساسي هو التحقق في علاقة أمان التعلق بأرقام المرفقات (الأم، الأب، الخادم الأجنبي المباشر) بسلوك اضطراب فرط الحركة ونقص الانتباه. الهدف الثانوي هو التحقق في التأثيرات الوسيطة لاستراتيجية تنظيم المشاعر بين أمان التعلق وسلوك ADHD. سيشارك المراهقون في مقياس استراتيجيات تنظيم التأثير على الحالة المزاجية (MARS)، مقياس البيئة الأسرية (FES)، استبيان معدل ارتباط الوالدين والأقران (IPPA-M)، ونظام التقييم السلوكي للأطفال (BASC-3-SR). سيتلقى الوالدان الاستبانة الديموغرافي واستمارة الموافقة. سيكون هناك نسخة عربية فصحى حديثة للمدارس الحكومية ومعظم المشتملين باللغة العربية. سيكون هناك موقعان لجمع البيانات: في المدارس الحكومية والخاصة وخدمات الصحة النفسية للأطفال (CMHS) التابعة لمؤسسة حمد الطبية (HMC).
أهداف البحث	1. تهدف الدراسة إلى بحث العلاقة ما بين سلوك التعلق لدى الأبناء والأمن النفسي وما بين استراتيجيات التفاعل الاجتماعي لهؤلاء الأبناء وكذلك بين سلوك اضطراب فرط الحركة ونقص الانتباه عند مشاركة العاملة المنزلية للوالدين تربية الأبناء كمتغير وسيط تجاه (الأم، الأب، العاملة المنزلية الأجنبية)
أسئلة البحث	1. أسئلة حول جودة العلاقة مع الأم والأب والعاملة المنزلية الأجنبية. 2. أسئلة حول بيئة المنزل
منهج البحث وأدواته	⌘ IPPA-M ⌘ BASC-3 SR ⌘ FES ⌘ MARS

المرفقات المطلوبة:

1. خطاب من الجهة المشرفة على الباحث.
2. أداة البحث [illegible]

3

RESEARCH CONSENT FORM

1. Title of research

Foreign Domestic Worker - the Invisible Attachment Figure: Emotion Regulation as a Mediator between Attachment Security and ADHD in Adolescents

2. Principal Investigator

Ahmed Mohammed, is from the University of Pais Vasco UPV/EHU (University of the Basque Country) and Hamad Medical Corporation (HMC)

3. Why are we inviting you to join this research?

The investigator and colleagues at Hamad Medical Corporation (HMC) and University of the Basque are conducting this research.

We are inviting your child to join because we would like the insight of adolescents on their relationships with their mother, father, and domestic worker. Additionally, we seek to further understand if there is a relationship with the quality of our relationships on our emotional and behavioral wellbeing. To do this we would like to recruit adolescents from the ages of 12 to 17 and get their perspective through 2 sessions of questionnaires.

4. What should you know about this research?

- The project is for high school students from ages 12 to 17 years old and we are hoping your child will be able to help us out. The way you can help us out is by answering some questions about your demographic and home environment where your child will answer questions on their relationships with their mother, father and domestic worker. You should answer them on your own without anyone seeing your answers.
- Whether or not you allow your child to join is both your decision (you can accept or refuse no matter who is inviting you to participate)
- Please feel free to ask questions or mention concerns before deciding, or during or after the research
- You can say yes but change your mind later
- We will not hold your decision against you

5. Who can you talk to?

If you have questions or concerns, or if you think the research has hurt you, talk to the research team at: contact the primary investigator Ahmed Mohammed (email: ahmed.a.mohd@gmail.com Phone: (+974-77776414).

RESEARCH CONSENT FORM

- HMC Institutional Review Board (HMC-IRB) Chair at 5554 6310
- HMC-IRB Office at 4025 6440 (from Sunday to Thursday between 7:00am-3:00pm) or email at irb@hamad.qa

6. Why are we doing the research?

This study is directed at adolescents from 12 to 17 years old and we are hoping you will allow your child to help us out. The way you can help us out is by answering some questions about how your child feels about their mother, father and domestic worker. You should answer them on your own without anyone seeing your answers.

7. How long will the research take?

This research will consist of two sessions of questionnaires for your child and one demographic questionnaire will be sent to you, the parents. Both session should take around 45 minutes to an hour for your child. We expect the research to last for these two sessions but the research will be open to take participants from September 2020 till November 2021

8. How many people will take part?

We plan to study 50 boys and 50 girls from outpatient participants from the CAMHS center. The research will include 400 boys and 400 girls that are from private and public schools randomly in Doha.

9. What happens if you take part?

If you agree to join, we will ask you to do the following:

For those joining from the clinic:
- The research assistant will ask for the parents' permission for the participant to join and hand the consent form to them.
- To have the both parents of the child complete the demographic questionnaire.
- The participant will complete the questionnaires IPPA-M, MARS, and BASC-3-SR in one session that will scheduled at the clinic that should take 2 sessions, each 45 minutes to an hour.

For those joining from the schools:
- The teachers will distribute the consent and demographic questionnaires to the participants to give to their parents
- The parents of the child complete the demographic questionnaire
- The child will complete the questionnaires IPPA-M, MARS, and BASC-3-SR in one session in class that should take 2 sessions, each 45 minutes to an hour.

10. Could the research be bad for you?

There is no physical, legal, privacy, social, and economic risk for this study. We are asking about psychological and behavioral wellbeing. If there is a risk to trigger any unforeseen trauma regarding feelings towards parental figures, please make this aware or decline participation.

11. Could the research be good for you?

Possible benefits are to the community for furthering our understanding of how the dynamic of having an additional parental figure, such as domestic worker, with the parents affecting the emotional and behavioral outcomes of adolescents. Additionally, understanding the effect of these parental figures on ADHD patients may provide crucial information on helping these individuals with ADHD.

12. What happens to information about you?

We will make efforts to secure information about you and your child. This includes using a code to identify you in our records instead of using your name or any identifiable data. We will not identify you personally in any reports or publications about this research.

We cannot guarantee complete secrecy, but we will limit access to information about you. Only people who have a need to review information will have access. These people might include:

- Members of the research team representatives whose work is related to the research or to protecting your rights and safety.
- Representatives of the Ministry of Public Health Qatar who make sure the study is done properly and that your rights and safety are protected.

13. What if you don't want to join?

You can say no and we will not hold it against you.

14. What if you join but change your mind?

You can stop participating at any time and we will not hold it against you.
However, if you stop you should know that your information that we have collected will be destroyed and we will not contact you regarding this project.

15. What else should you know?

The investigator or sponsor may stop the study or take you out of the study at any time, even if you would like to continue. This could happen because there is other factors that may disrupt the data that we are investigating, for example, if there are known health and mental difficulties that will conflict with extracting the data.

16. Additional Choices

We would like your permission to contact you about participating in second phase that will be held with the same questionnaires after 6 months from the day of your participation. You may still join this study even if you do not permit future contact. You may also change your mind about this choice. Please initial your choice below:

_____YES, you may contact me

_____NO, you may NOT contact me

RESEARCH CONSENT FORM

Signature Page for Capable Adult

Volunteer

I voluntarily agree to join the research described in this form.

Printed Name of Volunteer

Signature of Volunteer Date

Person Obtaining Consent

I document that:

- *I (or another member of the research team) have fully explained this research to the volunteer.*
- *I have personally evaluated the volunteer's understanding of the research and obtained their voluntary agreement.*

Printed Name of Person Obtaining Consent

Signature of Person Obtaining Consent Date

Witness (if applicable)

I document that the information in this form (and any other written information) was accurately explained to the volunteer, who appears to have understood and freely given Consent to join the research.

Printed Name of Witness

Signature of Witness Date

RESEARCH CONSENT FORM

Signatures: Adult Unable to Consent

Legally Authorized Representative

I voluntarily agree for the person named below to join the research described in this form.

Printed Name of Volunteer

Printed Name of Representative Relationship

Signature of Representative Date

Person Obtaining Consent

I document that:

- *I (or another member of the research team) have fully explained this research to the representative.*
- *I have personally evaluated the representative's understanding of the research and obtained their voluntary agreement.*

Printed Name of Person Obtaining Consent

Signature of Person Obtaining Consent Date

Witness (if applicable)

I document that the information in this form (and any other written information) was accurately explained to the representative, who appears to have understood and freely given consent.

Printed Name of Witness

Signature of Witness Date

RESEARCH CONSENT FORM

Signatures: Research with Children

Parent(s) or Guardian

I voluntarily agree for my child to join the research described in this form

Printed Name of Child

Printed Name of Parent or Guardian

Signature of Parent or Guardian Date

Printed Name of Parent

Signature of Parent Date

Person Obtaining Consent

I document that:
- *I (or another member of the research team) have fully explained this research to the parent(s).*
- *I have personally evaluated parental understanding of the research and obtained their voluntary agreement.*

Printed Name of Person Obtaining Consent

Signature Date

Witness (if applicable)

I document that the information in this form (and any other written information) was accurately explained to the parent(s), who appear(s) to have understood and freely given consent.

Printed Name of Witness

Signature of Witness Date

RESEARCH CONSENT FORM

Signatures: Research with Children

Parent(s) or Guardian

I voluntarily agree for my child to join the research described in this form

Printed Name of Child

Printed Name of Parent or Guardian

Signature of Parent or Guardian Date

Printed Name of Parent

Signature of Parent Date

Person Obtaining Consent

I document that:
- *I (or another member of the research team) have fully explained this research to the parent(s).*
- *I have personally evaluated parental understanding of the research and obtained their voluntary agreement.*

Printed Name of Person Obtaining Consent

Signature Date

Witness (if applicable)

I document that the information in this form (and any other written information) was accurately explained to the parent(s), who appear(s) to have understood and freely given consent.

Printed Name of Witness

Signature of Witness Date

Version Date: [Insert Version Date] Page 7 of 9

Appendix A: Specimen Storage Guidance

Instructions: **If you are collecting biological specimens, please select the appropriate choice(s) below and place them in the form according to the instructions. Delete this appendix from the form before uploading.**

If you will only use samples for the purposes of this study, add study-specific information to the following paragraph and paste it at the end of Section 12:

> Your samples will be kept and used in Qatar only. Your samples will be used for the purposes of this study only. Any samples left over will be destroyed at the end of the study.

If you want to use samples for future research, add study-specific information to the following paragraphs and place them at the end of Section 12:

> During the study, your samples will be kept and used in Qatar only. We would like to keep any samples left over at the end of the study for one year for future research.
>
> We will store these leftover samples without a link to your identity. Leftover samples will be used by the study team only. Your leftover samples will be used for the same research related to foreign domestic workers and ADHD behavior only.
>
> You can change your mind and withdraw your samples from the study by contacting us before June 2021. After that, we will not know which samples belong to you and we will not be able to remove them from the study. You may join this study even if you do not allow this future use. You can mark your choice at the end of this form. If you do not allow storage of your samples, we will destroy the sample at the end of the study.

In Section 12, we explained that we would like to use your samples for future research. Please indicate your choice by initialing the appropriate line below:

_____ **ALLOW** storage and use of my samples for future research

_____ **DO NOT ALLOW** storage or use of my samples for future research

Appendix B: Data Storage Guidance

Instructions: **If you plan to bank data for use in future research, please select the appropriate choice(s) below and place in the form according to the instructions. Delete this appendix from the form before uploading the form with your IRB application.**

If you will destroy all links between the data and volunteer identities before banking the data for future use, paste the following paragraph in Section 12:

> We plan to use data from this study in other projects in the future. This might include sharing the data with other researchers. Before we store the data for future use, we will destroy all links between your identity and the data about you.

If you will bank the data with a coded link between the data and volunteer identities, add study-specific information to the following paragraph and paste it in Section 12:

> We plan to use data from this study in other projects in the future. This might include sharing the data with other researchers. Although we will keep a link between your identity and the data about you [choose one: we will not provide that link to anyone we share the data with; we will destroy the link before providing data to anyone outside the research team].

*If you will contribute **genetic** data to any data repositories, such as the NIH GWAS, add the following to the paragraph you chose above:*

> Information from analyses of your samples and medical information will be put into databases along with information from other volunteers. This will help researchers around the world.
>
> These databases will not include your name, telephone number or other information that directly identifies you. [Briefly describe the databases you expect to contribute to, such as where they are hosted, if they are accessible via the internet, and who can access them.].

RESEARCH ASSENT FORM

Protocol Title: Foreign Domestic Worker the Invisible Attachment figure: Mediating Emotion Regulation between Attachment Security and ADHD in Adolescents

Principal Investigator: Ahmed Mohammed

We want to tell you about a research study we are doing. A research study is a way to learn more about something. We would like to find out more about how you feel about your mother, father and foreign domestic worker. You are being asked to join the study because you are a young adult who lives at home with both their parents and there is a foreign domestic worker helping at home.

If you agree to join this study, there will be two sessions. The first session will be paper based and will be done in class. At the first session, the questionnaires (IPPA, ERQ, and FES) will ask about how you feel about your mother, father and foreign domestic worker. The second session will be paper based questionnaires called BASC-3 will ask you how you feel generally about how you react to situations and how you certain situations make you feel and behave. Both sessions could take up to an hour. There is no risk to your physical and mental health. If there is any sense of harm please let us know and we can provide support accordingly.

There are no benefits to you from joining this research. However, possible benefits to others include a better understanding of those experiencing ADHD and problems with stress. This could help the society to further understand young people your age are feeling stress and the importance of our relationships at home.

You do not have to join this study. It is up to you. You can say okay now and change your mind later. All you have to do is tell us you want to stop. No one will be mad at you if you don't want to be in the study or if you join the study and change your mind later and stop.

We will also ask your parents for permission. You can say **NO** if you want, even if your parents say YES. Before you say **YES or NO** to being in this study, we will answer any questions you have. If you join the study, you can ask questions at any time. Just tell the researcher that you have a question.

If you have any questions about this study please feel free to contact *Ahmed Mohammed (mobile number: 77776414)*
If you sign your name below, it means that you agree to take part in this research study.

Assent of Volunteer		
I voluntarily agree to join the research described in this form		
Printed Name of Volunteer	Signature of Volunteer	Date
Person Obtaining Assent		
I document that: • *I (or another member of the research team) have explained this research to the volunteer* • *I have personally evaluated the volunteer's understanding of the research and obtained their voluntary agreement*		
Printed Name of Person Obtaining Assent	*Signature of Person Obtaining Assent*	Date

This document is English/Arabic on Front/Back side
Version Date: (Insert Version Date)

١

IPPA-M Questionnaire

التعليمات:

المشروع هو لطلاب المدارس الثانوية، ونحن نامل ان تكون قادرة على مساعدتنا. الطريقة التي يمكن ان تساعدنا هو من خلال الاجابة على بعض الأسئلة حول كيف تشعر حول أمك و/أو أبيك و العائلة المنزلية (الخاصة). يجب أن تجيب عليها بنفسك دون أن يرى أحد إجاباتك. يجب أن يستغرق هذا الاستبيان حوالي 15-20 دقيقة. قبل أن نبدأ، يجب أن تعرف أن هذا ليس إلزاميا. يمكنك أن تقرر عدم المشاركة قبل الإجابة على أي اسئلة.

تذكر: إذا كان لديك أسئلة عند اتمام الاستطلاع، فقط رفع يدك وسنحاول الاجابة عليها. واذا كان لديك اي اسئلة بعد الانتهاء من ذلك سنكون هنا للتحدث معك.

بعض التصريحات التالية تسأل عن مشاعرك عن أمك او الشخص الذي تصرف كأمك، والبعض الآخر يسأل عن والدك بينما يسأل آخرون عن خدامنا الخاص بك. إذا كان لديك أكثر من شخص واحد يتصرف كأم كأمك أو والدك (على سبيل المثال، الأم الطبيعية وزوجة الأب) الإجابة على الأسئلة لواحد كنت تشعر قد اثرت اكثر لك. الرجاء قراءة كل عبارة ودائرة رقم **واحد** الذي يوضح مدى صحة العبارة بالنسبة لك الآن.

أوافق بشدة	موافق	متحايد	لا أوافق	لا أوافق بشدة
5	4	3	2	1

رقم	الأسئلة					
1	امي تحترم مشاعري	1	2	3	4	5
2	اشعر ان امي تقوم بعمل جيد كأم	1	2	3	4	5
3	اتمنى لو كان لدي أم مختلفة	1	2	3	4	5
4	امي تفهمني كما انا	1	2	3	4	5
5	احب الحصول على وجهة نظر امي على الأشياء اذا قلق بشأن	1	2	3	4	5
6	اشعر انه لا فائدة من ترك مشاعري تظهر حول امي	1	2	3	4	5
7	عندما نناقش الأمور امي تهتم بوجهة نظري	1	2	3	4	5
8	امي تثق بحكمي	1	2	3	4	5
9	امي تساعدني على فهم نفسي بشكل افضل	1	2	3	4	5
10	انا أخبر امي عن مشاكلي ومشاكلي	1	2	3	4	5
11	امي تساعدني على التحدث عن مخاوفي	1	2	3	4	5
12	امي تهينني	1	2	3	4	5
13	عندما أكون غاضبا من شيء ما، تحاول امي أن تكون متفهمة	1	2	3	4	5
14	انا اثق بامي	1	2	3	4	5
15	يمكنني الاعتماد على امي عندما أحتاج للحصول على شيء من صدري	1	2	3	4	5
16	اذا كنت امي تعرف شيئا يزعجني، وقلت انها تسألني عن ذلك	1	2	3	4	5

بعض التصريحات التالية تسأل عن مشاعرك حول **والدك** أو الشخص الذي كان بمثابة والدك. إذا كان لديك أكثر من شخص واحد يتصرف كوالدك (على سبيل المثال، أب طبيعي وزوج الأم) الاجابة على الأسئلة لواحد فقط تشعر قد أثرت أكثر لذلك الرجاء قراءة كل عبارة ودائرة رقم **واحد** الذي يوضح مدى صحة العبارة بالنسبة لك الآن.

لا أوافق بشدة	لا أوافق	محايد	موافق	أوافق بشدة
1	2	3	4	5

رقم	الأسئلة					
1	والدي تحترم مشاعري	1	2	3	4	5
2	أشعر أن والدي تقوم بعمل جيد كأب	1	2	3	4	5
3	أتمنى لو كان لدي أب مختلفة	1	2	3	4	5
4	والدي تقبلني كما أنا	1	2	3	4	5
5	أحب الحصول على وجهة نظر والدي على الأشياء أنا قلق بشأن	1	2	3	4	5
6	أشعر أنه لا فائدة من ترك مشاعري تظهر حول والدي	1	2	3	4	5
7	عندما نناقش الأمور والدي يهتم بوجهة نظري	1	2	3	4	5
8	والدي تثق بحكمي	1	2	3	4	5
9	والدي يساعدني على فهم نفسي بشكل أفضل	1	2	3	4	5
10	أنا أخبر والدي عن مشاكلي ومشاكلي	1	2	3	4	5
11	والدي تساعدني على التحدث عن صعوباتي	1	2	3	4	5
12	والدي يفهمني	1	2	3	4	5
13	عندما أكون غاضباً من شيء ما، يحاول والدي أن يكون متفهماً	1	2	3	4	5
14	أنا أثق بوالدي	1	2	3	4	5
15	يمكنني الاعتماد على والدي عندما أحتاج للحصول على شيء من صدري	1	2	3	4	5
16	إذا كان والدي يعرف شيئاً يزعجني، يسألني عن ذلك	1	2	3	4	5

4

بعض التصريحات التالية تسأل عن مشاعرك حول العاملة المنزلية (الخادمة العاملة). اذا كان لديك أكثر من خادمة الاجابة على الأسئلة لواحدة كنت تشعر قد أثرت أكثر لك. الرجاء قراءة كل عبارة ودائرة رقم **واحد** الذي يوضح مدى صحة العبارة بالنسبة لك الآن.

لا أوافق بشدة	لا أوافق	محايد	موافق	أوافق بشدة
1	2	3	4	5

رقم	الأسئلة					
1	أشعر أن خادمتي تقوم بعمل جيد كأم	1	2	3	4	5
2	أتمنى لو كان لدي خادمة مختلفة	1	2	3	4	5
3	خادمتي تقبلني كما أنا	1	2	3	4	5
4	أحب الحصول على وجهة نظر خادمتي على الأشياء أنا قلق بشأن	1	2	3	4	5
5	أشعر أنه لا فائدة من ترك مشاعري تظهر حول خادمتي	1	2	3	4	5
6	عندما نناقش الأمور خادمتي يهتم بوجهة نظري	1	2	3	4	5
7	خادمتي تثق بحكمي	1	2	3	4	5
8	خادمتي يساعدني على فهم نفسي بشكل أفضل	1	2	3	4	5
9	أنا أخبر خادمتي عن مشاكلي ومشاكلي	1	2	3	4	5
10	خادمتي تساعدني على التحدث عن صعوباتي	1	2	3	4	5
11	خادمتي تفهمني	1	2	3	4	5
12	عندما أكون غاضبا من شيء ما، يحاول خادمتي أن يكون متفهمة	1	2	3	4	5
13	أنا أثق بخادمتي	1	2	3	4	5
14	يمكنني الاعتماد على خادمتي عندما أحتاج للحصول على شيء من صدري	1	2	3	4	5
15	إذا كانت خادمتي تعرف شيئا يزعجني، تسألني عن ذلك	1	2	3	4	5
16	أشعر أن خادمتي تقوم بعمل جيد كأم	1	2	3	4	5

1

BARCODE:

IPPA-M Questionnaire

Instructions

The project is for high school students and we are hoping you will be able to help us out. The way you can help us out is by answering some questions about how you feel about your mother, father and khadama. You should answer them on your own without anyone seeing your answers. This questionnaire should take you around 15-20 minutes. Before we start, you must know that this is not compulsory. You can decide not to participate before answering any questions.

Remember: if you have questions when you are taking the survey, just raise your hand and we will try to answer them. And, if you have any questions after you are done we will be here to talk to you.

Some of the following statements ask about your feelings about your mother or the person who has acted as your mother, others ask about your father while other asks about your khadama. If you have more than one person acting as your mother or your father (e.g., a natural mother and a step-mother) answer the questions for the one you feel has most influenced you. Please read each statement and circle the ONE number that tells how true the statement is for you now.

Below is a description of different what in which parents may behave. Read each carefully and circle the number that best describes the frequency with which you take part in these activities.

2

Some of the following statements ask about your feelings about your mother or the person who has acted as your mother, others ask about your father while other asks about your peers. If you have more than one person acting as your mother or your father (e.g., a natural mother and a step-mother) answer the questions for the one you feel has most influenced you. Please read each statement and circle the ONE number that tells how true the statement is for you now.

Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree
1	2	3	4	5

No.	Questions					
1	My mother respects my feelings	1	2	3	4	5
2	I feel my mother does a good job as a mother	1	2	3	4	5
3	I wish I had a different mother	1	2	3	4	5
4	My mother accepts me as I am	1	2	3	4	5
5	I like to get my mother's point of view on things I'm concerned about	1	2	3	4	5
6	I feel it's no use letting my feelings show around my mother	1	2	3	4	5
7	When we discuss things, my mother cares about my point of view	1	2	3	4	5
8	My mother trusts my judgment	1	2	3	4	5
9	My mother helps me to understand myself better	1	2	3	4	5
10	I tell my mother about my problems and troubles	1	2	3	4	5
11	My mother helps me to talk about my difficulties	1	2	3	4	5
12	My mother understands me	1	2	3	4	5
13	When I am angry about something, my mother tries to be understanding	1	2	3	4	5
14	I trust my mother	1	2	3	4	5
15	I can count on my mother when I need to get something off my chest	1	2	3	4	5
16	If my mother knows something is bothering me, she asks me about it	1	2	3	4	5

3

Some of the following statements ask about your feelings about your father or the person who has acted as your father. If you have more than one person acting as your father (e.g., a natural father and a step-father) answer the questions for the one you feel has most influenced you. Please read each statement and circle the ONE number that tells how true the statement is for you now.

Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree
1	2	3	4	5

No	Questions					
1	My father respects my feelings	1	2	3	4	5
2	I feel my father does a good job as a father	1	2	3	4	5
3	I wish I had a different father	1	2	3	4	5
4	My father accepts me as I am	1	2	3	4	5
5	I like to get my father's point of view on things I'm concerned about	1	2	3	4	5
6	I feel it's no use letting my feelings show around my father	1	2	3	4	5
7	When we discuss things, my father cares about my point of view	1	2	3	4	5
8	My father trusts my judgment	1	2	3	4	5
9	My father helps me to understand myself better	1	2	3	4	5
10	I tell my father about my problems and troubles	1	2	3	4	5
11	My father helps me to talk about my difficulties	1	2	3	4	5
12	My father understands me	1	2	3	4	5
13	When I am angry about something, my father tries to be understanding	1	2	3	4	5
14	I trust my father	1	2	3	4	5
15	I can count on my father when I need to get something off my chest	1	2	3	4	5
16	If my father knows something is bothering me, he asks me about it	1	2	3	4	5

4

Some of the following statements ask about your feelings about your closest khadama. If you have more than one khadama answer the questions for the one you feel has most influenced you. Please read each statement and circle the ONE number that tells how true the statement is for you now.

Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree
1	2	3	4	5

No	Questions					
1	My khadama respects my feelings	1	2	3	4	5
2	I feel my khadama does a good job as a mother	1	2	3	4	5
3	I wish I had a different khadama	1	2	3	4	5
4	My khadama accepts me as I am	1	2	3	4	5
5	I like to get my khadama's point of view on things I'm concerned about	1	2	3	4	5
6	I feel it's no use letting my feelings show around my khadama	1	2	3	4	5
7	When we discuss things, my khadama cares about my point of view	1	2	3	4	5
8	My khadama trusts my judgment	1	2	3	4	5
9	My khadama helps me to understand myself better	1	2	3	4	5
10	I tell my khadama about my problems and troubles	1	2	3	4	5
11	My khadama helps me to talk about my difficulties	1	2	3	4	5
12	My khadama understands me	1	2	3	4	5
13	When I am angry about something, my khadama tries to be understanding	1	2	3	4	5
14	I trust my khadama	1	2	3	4	5
15	I can count on my khadama when I need to get something off my chest	1	2	3	4	5
16	If my khadama knows something is bothering me, she asks me about it	1	2	3	4	5

BARCODE:

Family Environment Scale (FES)

تعليمات

يوجد 90 تصريح في هذا الكتيب. انها تصريحات عن العائلات. عليك ان تقرر اي من هذه العبارات صحيحة بالنسبة لعائلتك وانها خاطئة. ضع كل ما تتناوله من العلامات في المربع الأيمن. إذا كانت تعتقد أن العبارة صحيحة أو صحيحة في الغالب X إذا كانت تعتقد أن العبارة خطأ أو خطأ في الغالب من عائلتك ، اضع علامة "صح" في المربع اليمنى X اعائلتك ، اكتب "خطأ" في المربع اليمنى

إذا كانت العبارة صحيحة ؟ قد تشعر أن بعض العبارات صحيحة لبعض أفراد الأسرة وخاطئة بالنسبة للآخرين. ضع علامة إذا كانت العبارة خاطئة لمعظم الأعضاء. إذا كان الأعضاء منقسمين بالتساوي ، حدد ؟ بالنسبة لمعظم الأعضاء. ضع علامة الاختلاج العام الأقوى وأجب وفقًا لذلك

تذكر - نريد أن نعرف كيف تبدو عائلتك بالنسبة لك. لذلك لا تحاول معرفة كيف يرى الأعضاء الآخرون عائلتك ، ولكن اعطنا انطباعك العام عن عائلتك لكل بيان.

	السئلة	خطأ	صح
١	أفراد أسرتي يساعد بعضهم بعضا في كثير من الأحيان.		
٢	غالبا ما يحتفظ كل فرد في الأسرة بمشاعر لنفسه.		
٣	لعالي من قدر كبير من الصراع في محيط أسرتنا.		
٤	أفراد أسرتي لا يفعلون الأشياء من تلقاء أنفسهم.		
٥	من المهم في أسرتي أن نفعل الأشياء على أفضل صورة ممكنة.		
٦	كثيرا ما يدور الحديث بين أفراد الأسرة حول المشكلات السياسية والاجتماعية		
٧	تصل أفراد أسرتي إلى قضاء معظم العطلات نهاية الأسبوع المسائية داخل المنزل.		
٨	يحضر أفراد أسرتي كثيراً من الاجتماعات و المناسبات الدينية.		
٩	يتم التخطيط للأنشطة المختلفة التي القوم بها الأسرة بطريقة جيدة.		
١٠	نادرا ما يلتزم افراد الأسرة بالترتيب و النظام		
١١	كثيراً ما نشعر بالملل داخل المنزل.		
١٢	كل فرد في الأسرة لديه الفرصة ليقول كل ما يريد قوله.		
١٣	نادرا ما يظهر الغضب بشكل صريح على أفراد الأسرة		
١٤	أجد دائما تشجيعا قويا من أسرتي كي أكون مستقلا		
١٥	تحقيق التقدم والرقي من الأمور الهامة بالنسبة لأسرتي.		
١٦	نادرا ما تذهب افراد اسرتي لمشاهدة السيارات أو حضور الاحتفالات.		
١٧	كثيرا ما يأتي الأصدقاء لتناول الطعام أو الزيارة الأسرة		
١٨	نادرا ما يؤدي أفراد الأسرة الصلاة في مواعيدها		

١٩	يحافظ كل فرد في الأسرة على ترتيب الأشياء و نظامها.		
٢٠	يوجد قدر قليل من القواعد و الأنظمة التي يتبعها أفراد الأسرة.		
٢١	يبذل كل فرد في الأسرة كل ما يستطيع من جهد فيما يقوم به من اعمال المنزل.		
٢٢	يفكر أفراد أسرتي قبل أن يقولوا ما يريدون قوله.		
٢٣	يعتصب أفراد الأسرة أحيانا لدرجة انهم يحطمون الأشياء التي أمامهم.		
٢٤	كل فرد في الأسرة يفعل الأشياء في تلقاء نفسه.		
٢٥	مقدار الدخل الذي يحصل عليه كل فرد ليس من الأمور الهامة في أسرتي.		
٢٦	من الأمور الهامة عند أسرتي أن يتعلم أفرادها أشياء جديدة ومختلفة.		
٢٧	لا يوجد في أسرتي من يهتم كثيرا بممارسة الألعاب الرياضية		
٢٨	كثيرا ما يدور نقاش بين أفراد الأسرة حول المعتقدات الدينية للمناسبات الدينية		
٢٩	تواجد صعوبة كبيرة في الحصول على الأشياء التي تحتاج إليها في عائلتنا.		
٣٠	فرد واحد في الأسرة هو الذي يتخذ معظم القرارات.		
٣١	يوجد شعور قوي بالانتماء للأسرة عند أفراد أسرتي.		
٣٢	يتناقش أفراد الأسرة المشكلات الشخصية لكل فرد في الأسرة		
٣٣	أفراد أسرتي لا يفقدون أعصابهم مطلقا.		
٣٤	كل فرد في الأسرة يتمتع بقدر كبير من الحرية.		
٣٥	تعطي أسرتي اهتماما كبيرا للمنافسة.		
٣٦	لا يوجد اهتمام كبير بالأمور الثقافية في أسرتي.		
٣٧	كثيرا ما تذهب الأسرة إلى السينما أو المسرح أو السيارات أو المعسكرات.		
٣٨	نحن لا نعتقد في وجود الجنة والنار في أسرتي.		
٣٩	المحافظة على المواعيد من الأمور التي تهتم بها أسرة اهتماما كبيرا.		
٤٠	توجد طريق تقليدية معروفة لا تتغير لعمل الأشياء في منزلنا.		
٤١	نادرا ما يتطوع أحد أفراد الأسرة بعمل مطلوب في المنزل.		
٤٢	عندما نشعر بالرغبة في القيام بشيء ما فإننا نقوم في الحال.		
٤٣	كثيرا ما يوجد أفراد الأسرة النقد لبعضهم البعض.		
٤٤	لا يوجد سوى قدر ضئيل من الخصوصيات لكل فرد في الأسرة.		
٤٥	يحرص دائما و يشدد أن نفعل الأشياء بطريقة أفضل في المرة التالية.		
٤٦	لا تدور بين أفراد أسرتي مناقشات هادئة إلا في النادر.		
٤٧	لكل فرد في أسرتي هواية أو اكثر.		
٤٨	يعتنق أفراد أسرتي أفكارا صارمة عن الصواب والخطأ.		
٤٩	يتحول أفراد أسرتي من رأي إلى آخر بكثرة.		
٥٠	يوجد تأكيد شديد على اتباع القواعد و عدم الخروج عليها في محيط أسرتي		
٥١	يساند أفراد أسرتي بعضهم بعضا مساندة حقيقية		
٥٢	يشعر جميع أفراد الأسرة بالقلق والانزعاج عندما يشتكي أحد الأفراد من شيء.		
٥٣	يسبب أفراد أسرتي الأذى لبعضهم البعض أحيانا.		
٥٤	نادرا ما يعتمد كل من أفراد أسرتي على نفسه عندما تنشأ مشكلة من المشكلات.		
٥٥	نادرا ما يشعر أفراد أسرتي باهتمام بالترقية في وظيفة أو بالدرجات المدرسية.		
٥٦	بعض أفراد أسرتي يحيد العزف على آلة موسيقية		
٥٧	أفراد الأسرة لا يشتركون كثيراً في الأنشطة الترويحية خارج مجال العمل أو المدرسة		

٥٨	في أسرتنا نعتقد بوجود بعض الأشياء التي يجب أن نؤمن في الاختيار لجرد وأن الدين.		
٥٩	نحرص أفراد الأسرة على التأكد من أن غرفهم نظيفة و مرتبة.		
٦٠	كل فرد في الأسرة له الحق في اتخاذ القرارات المتعلقة بالأسرة.		
٦١	يوجد قدر ضئيل من الروح الجماعية بين أفراد أسرتي.		
٦٢	الأمور التي تتعلق بالنقود و المصروفات تناقش صراحة في محيط أسرتي.		
٦٣	عندما يحدث خلاف بين أفراد الأسرة نحاول جاهدين تسوية الأمور والمحافظة على الهدوء بالمنزل		
٦٤	أفراد أسرتي يشجع بعضهم بعضا بشدة للدفاع عن حقوقهم		
٦٥	في أسرتي لا نبذل جهدا كبيرا لتحقيق قدر النجاح		
٦٦	يتردد أفراد الأسرة كثيراً على المكتبات العامة		
٦٧	يذهب أفراد الأسرة أحيانًا لسماع المحاضرات أو الدروس عن الحوارات أو السيول.		
٦٨	لكل فرد في أسرتي أفكار مختلفة عن الآخر فيما يتعلم بالصواب والخطأ.		
٦٩	واجبات كل فرد و مسئولياته محددة بوضوح في محيط أسرتي		
٧٠	كل فرد من أفراد الأفراد الآخرين		
٧١	في أسرتنا يساند كل فرد الأفراد الآخرين		
٧٢	عادة يأخذ كل منا جانب الحذر فيما يقوله للآخرين من أفراد الأسرة.		
٧٣	كثيرا ما يحاول كل فرد في أسرتنا أن يهتم بنفسه وأن يبعد عن الآخرين.		
٧٤	من الصعب أن ينفرد أحد أفراد الأسرة بنفسه دون أن يجرح ذلك مشاعر الآخرين.		
٧٥	"العمل قبل اللعب" هي القاعدة التي تسير عليها أسرتي.		
٧٦	مشاهدة التلفزيون أكثر أهمية من قراءة الكتب عند أفراد أسرتي.		
٧٧	كثيراً ما يخرج الفرد أسرتي في المنزل.		
٧٨	القرآن الكريم كتاب بالغ الأهمية في منزلنا.		
٧٩	التصرف في النقود لا يتم بعناية في أسرتي.		
٨٠	ليست هناك مرونة في القواعد والأنظمة في محيط أسرتي.		
٨١	كل فرد في أسرتي يجد الاحترام و الانتباه الذي يحتاج إليه من الأفراد الآخرين في الأسرة .		
٨٢	كثيرا ما تدور مناقشات تلفازية بين أفراد أسرتي.		
٨٣	نحن نعتقد في أسرتنا أن الفرد لا يستطيع أن يكسب شيئا من مجرد رفع الصوت.		
٨٤	لا نجد تشجيعا حقيقيا للتعبير عن أنفسنا في محيط أسرتي.		
٨٥	يقارن أفراد أسرتي أنفسهم بالآخرين بالنسبة للتفوق في العمل أو في المدرسة.		
٨٦	معظم أفراد أسرتي يحبون الموسيقى وأنواع الأخرى.		
٨٧	الشيء الرئيسي في أسرتي هو مشاهدة التلفزيون أو الاستماع إلى الراديو.		
٨٨	نعتقد في أسرتي أن الفرد الذي يخطئ يجب أن يعاقب.		
٨٩	يقوم أفراد أسرتي بتنظيف المائدة و الأطباق بعد الانتهاء من تناول الطعام.		
٩٠	يقترض في أفراد أسرتي أن يلتزم التزاما صارما بالتعليمات والتقاليد		

BARCODE:

Family Environment Scale (FES)

Instructions:

There are 90 statements in this booklet. They are statements about families. You are to decide which of these statements are true of your family and which are false. Make all your marks in the right box. If you think the statement is True or mostly True of your family, make an X in the box labeled 'True'. If you think the statement is False or mostly False of your family, make an X in the box labeled False.

You may feel that some of the statements are true for some family members and false for others. Mark T if the statement is true for most members. Mark F if the statement is false for most members. If the members are evenly divided, decide what is the stronger overall impression and answer accordingly.

Remember, we would like to know what your family seems like to you. So do not try to figure out how other members see your family, but do give us your general impression of your family for each statement.

Questions	True	False
1. Family members really help and support one another.		
2. Family members often keep their feelings to themselves.		
3. We fight a lot in our family.		
4. We don't do things on our own very often in our family.		
5. We feel it is important to be the best at whatever you do.		
6. We often talk about political and social problems.		
7. We spend most weekends and evenings at home.		
8. Family members attend church, synagogue, or Sunday School fairly often.		
9. Activities in our family are pretty carefully planned.		
10. Family members are rarely ordered around.		
11. We often seem to be killing time at home.		
12. We say anything we want to around home.		
13. Family members rarely become openly angry.		
14. In our family, we are strongly encouraged to be independent.		
15. Getting ahead in life is very important in our family.		
16. We rarely go to lectures, plays or concerts.		
17. Friends often come over for dinner or to visit.		
18. We don't say prayers in our family.		
19. We are generally very neat and orderly.		

20. There are very few rules to follow in our family.		
21. We put a lot of energy into what we do at home.		
22. It's hard to "blow off steam" at home without upsetting somebody.		
23. Family members sometimes get so angry they throw things.		
24. We think things out for ourselves in our family.		
25. How much money a person makes is not very important to us.		
26. Learning about new and different things is very important in our family.		
27. Nobody in our family is active in sports, Little League, bowling, etc.		
28. We often talk about the religious meaning of Christmas, Passover, or other holidays.		
29. It's often hard to find things when you need them in our household.		
30. There is one family member who makes most of the decisions.		
31. There is a feeling of togetherness in our family.		
32. We tell each other about our personal problems.		
33. Family members hardly ever lose their tempers.		
34. We come and go as we want to in our family.		
35. We believe in competition and "may the best man win."		
36. We are not that interested in cultural activities.		
37. We often go to the movies, sports events, camping, etc.		
38. We don't believe in heaven or hell.		
39. Being on time is very important in our family.		
40. There are set ways of doing things at home.		
41. We rarely volunteer when something has to be done at home.		
42. If we feel like doing something on the spur of the moment we often just pick up and go.		
43. Family members often criticize each other.		
44. There is very little privacy in our family.		
45. We always strive to do things just a little better the next time.		
46. We rarely have intellectual discussions.		
47. Everyone in our family has a hobby or two.		
48. Family members have strict ideas about what is right and wrong.		
49. People change their minds often in our family.		
50. There is a strong emphasis on following rules in our family.		
51. Family members really back each other up.		
52. Someone usually gets upset if you complain in our family.		
53. Family members sometimes hit each other.		
54. Family members almost always rely on themselves when a problem comes up.		
55. Family members rarely worry about job promotions, school grades, etc.		
56. Someone in our family plays a musical instrument.		

57. Family members are not very involved in recreational activities outside work or school.		
58. We believe there are some things you just have to take on faith.		
59. Family members make sure their rooms are neat.		
60. Everyone has an equal say in family decisions.		
61. There is very little group spirit in our family.		
62. Money and paying bills is openly talked about in our family.		
63. If there's a disagreement in our family, we try hard to smooth things over and keep the peace.		
64. Family members strongly encourage each other to stand up for their rights.		
65. In our family, we don't try that hard to succeed.		
66. Family members often go to the library.		
67. Family members sometimes attend courses or take lessons for some hobby or interest (outside of school).		
68. In our family each person has different ideas about what is right and wrong.		
69. Each person's duties are clearly defined in our family.		
70. We can do whatever we want to in our family.		
71. We really get along well with each other.		
72. We are usually careful about what we say to each other.		
73. Family members often try to one-up or out-do each other.		
74. It's hard to be by yourself without hurting someone's feelings in our household.		
75. "Work before play" is the rule in our family.		
76. Watching TV is more important than reading in our family.		
77. Family members go out a lot.		
78. The Bible is a very important book in our home.		
79. Money is not handled very carefully in our family.		
80. Rules are pretty inflexible in our household.		
81. There is plenty of time and attention for everyone in our family.		
82. There are a lot of spontaneous discussions in our family.		
83. In our family, we believe you don't ever get anywhere by raising your voice.		
84. We are not really encouraged to speak up for ourselves in our family.		
85. Family members are often compared with others as to how well they are doing at work or school.		
86. Family members really like music, art and literature.		
87. Our main form of entertainment is watching TV or listening to the radio.		
88. Family members believe that if you sin you will be punished.		
89. Dishes are usually done immediately after eating.		
90. You can't get away with much in our family.		

BARCODE:

Emotion Regulation Questionnaire

Instructions: We would like to ask you some questions about your emotional life. In particular how you control, regulate, and manage your emotions. The questions below will ask about the emotional experience that you feel within yourself. Also there will be questions on how you show your emotions in the way you talk, gesture, or behave./ Please be aware some questions will seem similar but keep in mind that they are different.

For each item, please answer using the following scale:

1 (strongly disagree)	2	3	4 (Neutral)	5	6	7 (Strongly Agree)

No.	Questions							
1	When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about.	1	2	3	4	5	6	7
2	I keep my emotions to myself.	1	2	3	4	5	6	7
3	When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about.	1	2	3	4	5	6	7
4	When I am feeling positive emotions, I am careful not to express them.	1	2	3	4	5	6	7
5	When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm.	1	2	3	4	5	6	7
6	I control my emotions by not expressing them.	1	2	3	4	5	6	7
7	When I want to feel more positive emotion, I change the way I'm thinking about the situation.	1	2	3	4	5	6	7
8	I control my emotions by changing the way I think about the situation I'm in.	1	2	3	4	5	6	7
9	When I am feeling negative emotions, I make sure not to express them.	1	2	3	4	5	6	7
10	When I want to feel less negative emotion, I change the way I'm thinking about the situation.	1	2	3	4	5	6	7

1

BARCODE:

Emotion Regulation Questionnaire

تعليمات: سوف أن نسألك بعض الأسئلة حول حياتك العاطفية، على وجه الخصوص، كيف يمكنك التحكم (إدارة، قود، وتنظيم وإدارة) العواطف الخاصة بك. الأسئلة أدناه تنطوي على حالتين منميزتين من حياتك العاطفية واحد هو تجربتك العاطفية أو ما كنت تشعر وكذلك في الداخل الآخر هو التعبير العاطفي الخاص بك، أو كيف تظهر مشاعرك في الطريقة التي تتحدث بها، للناء، أو تتصرف. وعلى الرغم من أن بعض الأسئلة التالية قد تبدو متشابهة لبعضها البعض، فإنها تختلف بطرق هامة.

لكل بند، يرجى الإجابة باستخدام المقياس التالي:

1 (لا أوافق بشدة)	2	3	4 (محايد)	5	6	7 (أوافق بشدة)

No.	Questions	1	2	3	4	5	6	7
1	عندما أريد أن أشعر بعاطفة أكثر إيجابية (مثل الفرح أو التسلية)، أغير ما أفكر فيه							
2	أحتفظ بمشاعري لنفسي							
3	عندما أريد أن أشعر أقل عاطفة سلبية (مثل الحزن أو الغضب)، وأنا أغير ما أفكر فيه							
4	عندما أشعر بمشاعر إيجابية، أحرص على عدم التعبير عنها							
5	عندما أواجه وضعا مرهقا، أجعل نفسي أفكر في الأمر بطريقة تساعدني على البقاء هادئا							
6	أنا أتحكم في مشاعري بعدم التعبير عنها							
7	عندما أريد أن أشعر بعاطفة أكثر إيجابية، أغير الطريقة التي أفكر بها في الوضع							
8	أتحكم في مشاعري بتغيير الطريقة التي أفكر بها في الوضع الذي أنا فيه							
9	عندما أشعر بمشاعر سلبية، أحرص على عدم التعبير عنها							
10	عندما أريد أن أشعر بعاطفة أقل سلبية، أغير الطريقة التي أفكر بها في الوضع							

BASC3

Self-Report
SRP–A

Adolescent
Ages 12-17

Cecil R. Reynolds, PhD · Randy W. Kamphaus, PhD

BARCODE:

Instructions

This form contains sentences that young people may use to describe how they think or feel or act. Read each sentence carefully. For the first group of sentences, you will have two answer choices: T or F.

Select **T** for **True** if you agree with a sentence.

Select **F** for **False** if you do not agree with a sentence.

Here is an example:

1. I like parties. (T) F

For the second group of sentences, you will have four answer choices: **N**, **S**, **O**, and **A**.

Select **N** if the sentence **never** describes you or how you feel.

Select **S** if the sentence **sometimes** describes you or how you feel.

Select **O** if the sentence **often** describes you or how you feel.

Select **A** if the sentence **almost always** describes you or how you feel.

Here is an example:

9. I enjoy doing homework. N S (O) A

If you wish to change an answer, mark an X through it and circle your new choice, like this:

N S (O) (A)

Give the best answer for you for each sentence, even if it is hard to make up your mind. There are no right or wrong answers. Please do your best, tell the truth, and answer every sentence.

Before starting, please fill in the information above these instructions.

PEARSON

ABCDEFGHIJ

PsychCorp

Product Number 28902

Remember: T = True F = False

1. I get along well with my parents. T F
2. I like everyone I meet. T F
3. I like who I am. T F
4. My friends have more fun than I do. T F
5. I don't like thinking about school. T F
6. My teacher cares about me. T F
7. I never get into trouble. T F
8. I have a hard time making friends. T F
9. People tell me I should pay more attention. T F
10. If I have a problem, I can usually work it out. T F
11. Often I feel sick in my stomach. T F
12. What I want never seems to matter. T F
13. I always go to bed on time. T F
14. Sometimes, when alone, I hear my name. T F
15. I have not seen a car in at least 5 minutes. T F
16. I worry about tests more than my classmates do. T F
17. I get mad at my parents sometimes. T F
18. It seems like I'm always sick. T F
19. I think that I have a short attention span. T F
20. I don't care about school. T F
21. I tell the truth every single time. T F
22. My teacher understands me. T F
23. I never seem to get anything right. T F
24. Other children are happier than I am. T F
25. Nothing ever goes right for me. T F
26. I wish I were different. T F
27. I accept myself for who I am. T F
28. I hate taking tests. T F
29. My classmates don't like me. T F
30. My parents are always right. T F
31. I like to take chances. T F
32. I worry a lot of the time. T F
33. I take a plane trip from New York to Chicago at least twice a week. T F
34. I have attention problems. T F
35. My parents have too much control over my life. T F
36. Doing my best is never good enough. T F
37. I feel good about myself. T F
38. I never break the rules. T F
39. No matter how much I study for a test, I am afraid I will fail. T F
40. I used to be happier. T F
41. My parents blame too many of their problems on me. T F
42. I have never been mean to anyone. T F
43. I get sick more than others. T F
44. I often worry about something bad happening to me. T F
45. I never quite reach my goal. T F
46. I just don't care anymore. T F
47. I have just returned from a 6-month trip on an ocean liner. T F
48. Things go wrong for me, even when I try hard. T F
49. I always do what my parents tell me. T F
50. I don't seem to do anything right. T F
51. I always do homework on time. T F
52. Other children don't like to be with me. T F
53. Most things are harder for me than for others. T F
54. I tell my parents everything. T F
55. Nothing about me is right. T F
56. My stomach gets upset more than most people's. T F
57. I'll often quit before I fail. T F
58. I can never seem to relax. T F
59. I have some bad habits. T F

Remember: N = Never S = Sometimes O = Often A = Almost always

60. I quit easily. N S O A
61. My parents listen to what I say. N S O A
62. I am in pain. N S O A
63. I am dependable. N S O A
64. My teacher trusts me. N S O A
65. Little things bother me. N S O A
66. My parents are proud of me. N S O A
67. I have trouble standing still in lines. N S O A
68. I feel like people are out to get me. N S O A
69. I get angry easily. N S O A
70. I feel lonely. N S O A

Remember: N = Never S = Sometimes O = Often A = Almost always

71.	I can solve difficult problems by myself	N	S	O	A	111.	I feel dizzy	N	S	O	A
72.	When I take tests, I can't think	N	S	O	A	112.	My friends come to me for help	N	S	O	A
73.	I like to ride in a car that is going fast	N	S	O	A	113.	I make mistakes	N	S	O	A
74.	I feel that nobody likes me	N	S	O	A	114.	My thoughts keep me awake at night	N	S	O	A
75.	I feel worried	N	S	O	A	115.	I do things for the thrill of it	N	S	O	A
76.	I hear things that others cannot hear	N	S	O	A	116.	Other people are against me	N	S	O	A
77.	I am disappointed with my grades	N	S	O	A	117.	I talk without waiting for others to say something	N	S	O	A
78.	I have trouble breathing	N	S	O	A	118.	I hear voices in my head that no one else can hear	N	S	O	A
79.	When I get angry, I want to break something	N	S	O	A	119.	I have trouble sleeping the night before a big test	N	S	O	A
80.	People say bad things to me	N	S	O	A	120.	I am reliable	N	S	O	A
81.	I like to take risks	N	S	O	A	121.	I worry but I don't know why	N	S	O	A
82.	I have a hard time slowing down	N	S	O	A	122.	I have trouble paying attention to what I am doing	N	S	O	A
83.	I feel guilty about things	N	S	O	A	123.	I feel out of place around people	N	S	O	A
84.	I feel uncomfortable around others	N	S	O	A	124.	I feel like I am worth living	N	S	O	A
85.	I am good at making decisions	N	S	O	A	125.	I see weird things	N	S	O	A
86.	People tell me to be still	N	S	O	A	126.	I fall at times	N	S	O	A
87.	My school feels good to me	N	S	O	A	127.	I feel as though my friends class me to do something	N	S	O	A
88.	Parents act as if they don't love me	N	S	O	A	128.	I get along well with others	N	S	O	A
89.	I like going places with my parents	N	S	O	A	129.	Others ask me to help them	N	S	O	A
90.	I have trouble paying attention to the teacher	N	S	O	A	130.	My teacher gets mad at me for no good reason	N	S	O	A
91.	Even when alone, I feel like someone is watching me	N	S	O	A	131.	I like the way I look	N	S	O	A
92.	My teacher is proud of me	N	S	O	A	132.	When I start talking, it is hard for me to stop	N	S	O	A
93.	Other kids have to be with me	N	S	O	A	133.	I try to do things myself before asking for help	N	S	O	A
94.	I can't seem to turn off my mind	N	S	O	A	134.	I feel depressed	N	S	O	A
95.	I forget to do things	N	S	O	A	135.	Even when I try hard, I fail	N	S	O	A
96.	I feel sad	N	S	O	A	136.	Other people find things wrong with me	N	S	O	A
97.	I have trouble sitting still	N	S	O	A	137.	I like my parents	N	S	O	A
98.	I am jealous of others	N	S	O	A	138.	I get nervous	N	S	O	A
99.	I'm happy with who I am	N	S	O	A	139.	I threaten to hurt others when I get angry	N	S	O	A
100.	I get so nervous I can't breathe	N	S	O	A	140.	I talk while other people are talking	N	S	O	A
101.	School is boring	N	S	O	A	141.	I want to do better, but I can't	N	S	O	A
102.	I get blamed for things I can't help	N	S	O	A	142.	People think I'm strange	N	S	O	A
103.	My parents are early to talk to	N	S	O	A	143.	I get upset when I have to take a test	N	S	O	A
104.	Tests make me nervous	N	S	O	A	144.	I am left out of things	N	S	O	A
105.	People tell me to slow down	N	S	O	A	145.	My parents like to be with me	N	S	O	A
106.	I get mad at others	N	S	O	A	146.	I worry when I go to bed at night	N	S	O	A
107.	I feel safe at school	N	S	O	A	147.	People tell me to try harder	N	S	O	A
108.	I am lonely	N	S	O	A	148.	I am easily distracted	N	S	O	A
109.	My mother and father help me if I ask them to	N	S	O	A	149.	Ideas just race through my mind	N	S	O	A
110.	My kids bother me	N	S	O	A	150.	I get bored in school	N	S	O	A

Please continue to the back page.

Remember: N = Never S = Sometimes O = Often A = Almost always

151.	I feel like others do not like the way I do things	N	S	O	A	171.	I am someone you can rely on	N	S	O	A
152.	I like my teacher	N	S	O	A	172.	I find changes in things exciting	N	S	O	A
153.	I feel jealous	N	S	O	A	173.	My arms and legs move	N	S	O	A
154.	I'm a good person	N	S	O	A	174.	When I get angry, I want to hurt someone	N	S	O	A
155.	I like to date others or do things	N	S	O	A	175.	I get along with my teacher	N	S	O	A
156.	I do things over and over and can't stop	N	S	O	A	176.	People tell me that I am lazy	N	S	O	A
157.	I am proud of my parents	N	S	O	A	177.	My parents let me	N	S	O	A
158.	I have trouble controlling my thoughts	N	S	O	A	178.	Other people seem to ignore me	N	S	O	A
159.	Teachers look for the bad things that you do	N	S	O	A	179.	I feel like I have no friends	N	S	O	A
160.	I stay awake for 24 hours without getting tired	N	S	O	A	180.	People get mad at me, even when I don't do anything wrong	N	S	O	A
161.	I get nervous when things do not go the right way for me	N	S	O	A	181.	I feel that I have to get up and move around	N	S	O	A
162.	I feel like I want to quit school	N	S	O	A	182.	My parents expect too much from me	N	S	O	A
163.	I am liked by others	N	S	O	A	183.	I worry about what is going to happen	N	S	O	A
164.	Someone wants to hurt me	N	S	O	A	184.	I hate school	N	S	O	A
165.	I am blamed for things I don't do	N	S	O	A	185.	I like to be the first one to try new things	N	S	O	A
166.	I yell when I get angry	N	S	O	A	186.	I get phone calls from people in movie scenes	N	S	O	A
167.	I feel like my life is getting worse and worse	N	S	O	A	187.	My mother and father like my friends	N	S	O	A
168.	I have confidence in myself	N	S	O	A	188.	I do things that my friends are afraid to do	N	S	O	A
169.	I have a hard time concentrating	N	S	O	A	189.	People think I am fun to be with	N	S	O	A
170.	Teachers are unfair	N	S	O	A						

Please be sure you have marked all items.

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BASC3

Behavior Assessment System for Children, Third Edition (BASC™-3) BASC-3 Parent Rating Scales – SRP-A Ages 12-17

BARCODE:

التعليمات:

- يحتوي هذا النموذج على عدد من العبارات الخاصة بالشباب الصغار، والتي يمكن ان تصف كيف يفكرون، او يشعرون او يؤدوا بعض الأدوار، او يتصرفون.
- يرجاء قراءة كل عبارة بدقة متناهية، وبتأني.
- في الجزء الأول من العبارات، عليك باختيار الاجابة بصح او خطأ. تلك عليك أن تضع (صح) عند العبارة التي تعتقد أنها صحيحة، أو أن تضع (خطأ) عند العبارة التي تعتقد أنها خاطئة، ولا تواقق عليها. وإليك مثالاً على ذلك:

(1) احب المطلات (ص) (خ)

اما في الجزء الثاني من العبارات، عليك اختيار إجابة من أربعة:

- اختار لا إذا كانت العبارة لا تصف مشاعرك أو تصفك.
- اختار بعض الأحيان إذا كانت العبارة تصفك أو تصف شعورك بعض الأحيان (يحدث ذلك بعض الأحيان)
- اختار غالبا إذا كانت العبارة تصفك أو تصف شعورك بأن ذلك تشعر به أو يصف اغلب الأحيان
- اختار دائما إذا كانت العبارة تصفك أو تصف شعور بان ذلك تشعر كل الأوقات.

إليك مثالاً على ذلك:

(2) استمتع بعمل واجبات المنزلية. لا بعض الأحيان غالبا دائما

لو كانت لرغب في ان تغير اجابتك، ضع علامة X على الإجابة، ثم ضع دائرة ◯ حول الاجابة الصحيحة.

(2) ✗ بعض الأحيان ◯ غالبا دائما

اختار الاجابة الأنسب لك في كل مرة، حتى ولو كان من الصعب عليك الاختيار. أو أن تختار الأنسب لك. وكن متأكد تماما انه لا توجد اجابة صحيحة، أو اجابة خاطئة. الرجاء ان تعمل ما في وسعك ان تكون صادقاً وأميناً في اجابتك، ولا تترك اي عبارة بدون إجابة.

قبل ان تبدا في الإجابة، اكتب جميع المعلومات المطلوبة في الورقة أعلاه.

تذكر الجزء الأول الاجابة بـ (صح)، (خطا)

1	علاقتي جيدة مع والدي	(ص) (خ)
2	احب كل شخص اقابله	(ص) (خ)
3	احب نفسي كما انا	(ص) (خ)
4	يستمتع أصدقائي بحياتي اكثر مني	(ص) (خ)
5	لا أحب التفكير بالمدرسة	(ص) (خ)
6	يهتم معلمي بي	(ص) (خ)
7	لم اقع ابدا في مشكلات	(ص) (خ)
8	لدي صعوبة بالغة في عمل صداقات	(ص) (خ)
9	يخبرني الاخرون بأن علي أن اكون اكثر انتباها	(ص) (خ)
10	اذا كانت لدي مشكلة، فانني أعمل على حلها	(ص) (خ)
11	غالبا ما اشعر بالم في معدتي	(ص) (خ)
12	ما اتمناه او أريده لا أجده ابدا مهما	(ص) (خ)
13	اذهب للنوم في الوقت المحدد دائما	(ص) (خ)
14	بعض الأحيان، عندما اكون وحدي اسمع اسمي	(ص) (خ)
15	لم أشاهد بسيارة في الست اشهر الماضية	(ص) (خ)
16	لدي قلق مستمر من الاختبارات و الامتحانات اكثر من زملائي في الصف	(ص) (خ)
17	اغضب بشدة من والدي في بعض الأحيان	(ص) (خ)
18	اشعر انني امرض بصورة مستمرة	(ص) (خ)
19	اعتقد أن لدي نقص انتباه	(ص) (خ)
20	لا اهتم بالمدرسة	(ص) (خ)
21	اقول الصدق في لحظة او مرة	(ص) (خ)
22	يفهمني معلمي	(ص) (خ)
23	يبدو انني لا اقوم بأي شيء بصورة سليمة أو صحيحة	(ص) (خ)
24	اشعر بأن الأطفال الآخرين اكثر سعادة مني	(ص) (خ)
25	لا شيء يسير بصورة صحيحة لي	(ص) (خ)
26	اتمنى لو كنت شخصا مختلفا	(ص) (خ)
27	اتقبل نفسي كما انا	(ص) (خ)
28	أكره اجراء الاختبارات و الامتحانات	(ص) (خ)
29	زملائي في الصف لا يحبونني	(ص) (خ)
30	والدي دائما على حق	(ص) (خ)
31	احب أن احصل على قرض	(ص) (خ)
32	اشعر بقلق مستمر من الوقت	(ص) (خ)
33	انتقل من بلد إلى بلد اخر مرتين في الأسبوع	(ص) (خ)
34	لدي مشاكل في الانتباه	(ص) (خ)
35	طوال حياتي يتحكم والدي بصورة زائدة طول الوقت	(ص) (خ)
36	بالرغم من انني اعمل كل ما يوسعني لكن ذلك ليس كافيا	(ص) (خ)
37	اشعر بأنني في حالة جيدة	(ص) (خ)
38	ابدا انا لا أكسر القوانين	(ص) (خ)
39	بغض النظر عن مقدار دراستي للاختبارات، فانا اشعر بأنني سافشل	(ص) (خ)
40	تمنيت أن أكون سعيداً	(ص) (خ)

الجزء الثاني: تذكر ضع دائرة ◯ حول الإجابة المناسبة: لا- بعض الأحيان -غالبا- دائما

60. أتخلى عما أقوم به بسهولة	لا	بعض الأحيان	غالبا دائما
61. يستمتع والدي لما أقوله	لا	بعض الأحيان	غالبا دائما
62. أنا في حالة ألم	لا	بعض الأحيان	غالبا دائما
63. أنا شخص غير مستقل	لا	بعض الأحيان	غالبا دائما
64. يثق بي معلمي	لا	بعض الأحيان	غالبا دائما
65. تقلقني بعض الأشياء الصغيرة	لا	بعض الأحيان	غالبا دائما
66. يفتخر بي والدي	لا	بعض الأحيان	غالبا دائما
67. لدي مشكلة في الوقوف في الطابور	لا	بعض الأحيان	غالبا دائما
68. أشعر بأن الناس تتصيد لي (لا تحبني)	لا	بعض الأحيان	غالبا دائما
69. أشعر بالغضب سريعاً	لا	بعض الأحيان	غالبا دائما
70. أشعر بالوحدة	لا	بعض الأحيان	غالبا دائما
71. أحل كل مشاكلي الصعبة لوحدي	لا	بعض الأحيان	غالبا دائما
72. لا أستطيع التفكير عندما أدخل الاختبارات أو الامتحانات	لا	بعض الأحيان	غالبا دائما
73. أحب ركوب سيارة تسير بسرعة	لا	بعض الأحيان	غالبا دائما
74. أشعر بأن لا أحد يحبني	لا	بعض الأحيان	غالبا دائما
75. أشعر بقلق	لا	بعض الأحيان	غالبا دائما
76. أسمع أشياء لا يسمعها الآخرون	لا	بعض الأحيان	غالبا دائما
77. أشعر بخيبة أمل من درجاتي	لا	بعض الأحيان	غالبا دائما
78. لدي مشاكل في التنفس	لا	بعض الأحيان	غالبا دائما
79. عندما أشعر بالغضب، أريد أن أكسر الأشياء التي أمامي	لا	بعض الأحيان	غالبا دائما
80. يقول الأشخاص الآخرين أشياء سيئة عني	لا	بعض الأحيان	غالبا دائما
81. أحب المخاطرة	لا	بعض الأحيان	غالبا دائما
82. من الصعب من أحدا (أشعر بالهدوء)	لا	بعض الأحيان	غالبا دائما
83. أشعر بالذنب تجاه بعض الأشياء	لا	بعض الأحيان	غالبا دائما
84. أشعر بعدم الارتياح، عندما أكون مع الآخرين	لا	بعض الأحيان	غالبا دائما
85. أنا شخص جيد في اتخاذ القرارات	لا	بعض الأحيان	غالبا دائما
86. يخبرني الناس بأن لا أتحرك	لا	بعض الأحيان	غالبا دائما
87. تشعرني مدرستي بالراحة	لا	بعض الأحيان	غالبا دائما
88. يتجاهلني الناس، وكأنهم لا يسمعوني	لا	بعض الأحيان	غالبا دائما
89. أحب الذهاب إلى الأماكن برفقة والدي	لا	بعض الأحيان	غالبا دائما
90. لدي مشاكل في الانتباه لشعلم الداء الدرس	لا	بعض الأحيان	غالبا دائما
91. حتى عندما أكون وحدي، أشعر كأن أحدا ما يراقبني	لا	بعض الأحيان	غالبا دائما
92. يفتخر بي أستاذي	لا	بعض الأحيان	غالبا دائما
93. يكره الأطفال الآخرون أن يكونوا معي	لا	بعض الأحيان	غالبا دائما
94. لا أستطيع التحكم بطلي	لا	بعض الأحيان	غالبا دائما
95. أنسى عمل بعض الأشياء	لا	بعض الأحيان	غالبا دائما
96. أشعر بالحزن	لا	بعض الأحيان	غالبا دائما
97. لدي مشاكل في الجلوس	لا	بعض الأحيان	غالبا دائما
98. أغار من كل شخص	لا	بعض الأحيان	غالبا دائما
99. أنا سعيد أن أكون أنا	لا	بعض الأحيان	غالبا دائما
100. أتفرقز بسرعة لدرجة التي لا أستطيع التنفس	لا	بعض الأحيان	غالبا دائما

41. يلقي والدي اللوم علي بأنني سبب مشاكلهم	(ص)	(خ)	
42. لا أعطي لأحد شيئا	(ص)	(خ)	
43. أمرض أكثر من غيري	(ص)	(خ)	
44. أشعر بقلق مستمر من أن شيئاً سيئاً سيحدث لي	(ص)	(خ)	
45. أبدأ لا أتخلى عن تحقيق أهداف	(ص)	(خ)	
46. أنا فقط لا أهتم لأحد	(ص)	(خ)	
47. لقد عدت موخرا من رحلة عابرة للمحيطات استمرت لتسعة أشهر	(ص)	(خ)	
48. حتى عندما أحاول كل ما بوسعي القيام بشيء ما أقوم به بطريقة خاطئة	(ص)	(خ)	
49. أقوم بعمل كل ما يطلبه والدي مني	(ص)	(خ)	
50. يبدو أنني لا أقوم بشيء جيد أبداً	(ص)	(خ)	
51. أقوم بعمل واجباتي المدرسية المنزلية بالوقت المحدد	(ص)	(خ)	
52. لا يحب الأطفال الآخرين أن يصاحبوني	(ص)	(خ)	
53. يبدو لي القيام بأغلب الأشياء صعباً مقارنة بزملائي	(ص)	(خ)	
54. أقول لوالدي كل شيء عني	(ص)	(خ)	
55. لا شيء في حياتي صحيح(جيد)	(ص)	(خ)	
56. تزعجك معدتي دائماً إذا ما قارنتها بغير من الأشخاص	(ص)	(خ)	
57. يمكن أن أتسبب من عمل شيء ما بدلاً من شعوري بالإحباط والفشل	(ص)	(خ)	
58. أبدو أنني غير مرتاح أبداً	(ص)	(خ)	
59. لدي عادات سيئة	(ص)	(خ)	

101	أشعر بالملل من المدرسة (المدرسة مملة)	لا	بعض الأحيان غالبا دائما
102	يلومني الآخرون على كل شيء لأنني لا أستطيع القيام بالمساعدة	لا	بعض الأحيان غالبا دائما
103	من السهل التحدث لوالدي	لا	بعض الأحيان غالبا دائما
104	أشعر بالعصبية والتوترة من الاختبارات / الامتحانات	لا	بعض الأحيان غالبا دائما
105	يخبرني الآخرون بالهدوء والتمهل	لا	بعض الأحيان غالبا دائما
106	أشعر بالغضب من الآخرين	لا	بعض الأحيان غالبا دائما
107	أشعر بالأمان في المدرسة	لا	بعض الأحيان غالبا دائما
108	أنا شخص وحيد	لا	بعض الأحيان غالبا دائما
109	يساعدني والدي ووالدتي عندما أطلب منهم ذلك	لا	بعض الأحيان غالبا دائما
110	أتزعج من شكلي	لا	بعض الأحيان غالبا دائما
111	أشعر بالدوخة (الدوار)	لا	بعض الأحيان غالبا دائما
112	يقل علي اصدقائي لمساعدتي	لا	بعض الأحيان غالبا دائما
113	أقوم بأخطاء كثيرة	لا	بعض الأحيان غالبا دائما
114	أفكاري تبقيني مستيقظا في الليل	لا	بعض الأحيان غالبا دائما
115	أفعل الأشياء من أجل التشويق والمتعة	لا	بعض الأحيان غالبا دائما
116	الأشخاص الآخرون حذري	لا	بعض الأحيان غالبا دائما
117	أتكلم دون أن أعطي فرصة للآخرين في الكلام	لا	بعض الأحيان غالبا دائما
118	أسمع أصواتاً في رأسي لا يسمعها الآخرون	لا	بعض الأحيان غالبا دائما
119	لدي مشكلات في النوم كلما كان لدي اختبار / امتحان	لا	بعض الأحيان غالبا دائما
120	أنا شخص نو لغة	لا	بعض الأحيان غالبا دائما
121	أشعر بالقلق لكن لا أعلم لماذا هذا القلق	لا	بعض الأحيان غالبا دائما
122	لدي مشكلات في الانتباه لما أقوم به من أفعال	لا	بعض الأحيان غالبا دائما
123	أشعر وكأنني لست مع الآخرين في نفس المكان	لا	بعض الأحيان غالبا دائما
124	أشعر أن هذه الحياة لا تستحق أن أعيشها	لا	بعض الأحيان غالبا دائما
125	أرى أشياء غريبة	لا	بعض الأحيان غالبا دائما
126	أفشل في عمل كل الأشياء	لا	بعض الأحيان غالبا دائما
127	أحب أن أقوم بالأشياء التي يدفعني زملائي للقيام بها	لا	بعض الأحيان غالبا دائما
128	أنا أتماشى (أتوافق) مع الآخرين	لا	بعض الأحيان غالبا دائما
129	يسألني الآخرون أن أساعدهم	لا	بعض الأحيان غالبا دائما
130	يشعر معلمي (أساتذتي) بالغضب مني دون أي سبب يذكر	لا	بعض الأحيان غالبا دائما
131	أحب شكلي (أو مظهري)	لا	بعض الأحيان غالبا دائما
132	عندما أبدأ في الكلام يكون من الصعب علي أن أتوقف عن الكلام	لا	بعض الأحيان غالبا دائما
133	أحب أن أقوم بالأشياء بنفسي قبل أن أسأل الآخرين المساعدة	لا	بعض الأحيان غالبا دائما
134	أشعر بالاكتئاب	لا	بعض الأحيان غالبا دائما
135	حتى عندما أحاول أن أقوم بكل ما بوسعي فإنني أفشل	لا	بعض الأحيان غالبا دائما
136	يشتد الآخرون أخطائي (يبحث الآخرون عن أخطائي)	لا	بعض الأحيان غالبا دائما
137	أحب والدي	لا	بعض الأحيان غالبا دائما
138	أشعر بالعصبية والتوترة بسرعة	لا	بعض الأحيان غالبا دائما
139	عندما أصاب بالغضب أهدد الآخرين	لا	بعض الأحيان غالبا دائما
140	أستمر بالكلام حتى عندما يتكلم الآخرون	لا	بعض الأحيان غالبا دائما
141	أحاول أن أقوم بكل ما في وسعي لكن لا أستطيع ذلك	لا	بعض الأحيان غالبا دائما
142	يشعر الآخرين بأنني شخص غريب	لا	بعض الأحيان غالبا دائما
143	أشعر بخيبة الأمل كلما كان لدي اختبار / امتحان	لا	بعض الأحيان غالبا دائما
144	لقد تركت كل شيء	لا	بعض الأحيان غالبا دائما
145	يحب والدي أن يكونا معي	لا	بعض الأحيان غالبا دائما
146	أشعر بالقلق عندما أذهب للنوم	لا	بعض الأحيان غالبا دائما
147	يخبرني الآخرون أن علي أبذل جهدا أكثر	لا	بعض الأحيان غالبا دائما
148	أنا شخص من السهل استثارته	لا	بعض الأحيان غالبا دائما
149	تتسارع الأفكار في رأسي	لا	بعض الأحيان غالبا دائما
150	أشعر بالملل في المدرسة	لا	بعض الأحيان غالبا دائما
151	أشعر بأن الآخرين لا يحبون الطريقة التي أتصرف بها	لا	بعض الأحيان غالبا دائما
152	أحب معلمي	لا	بعض الأحيان غالبا دائما
153	أشعر بالقلق	لا	بعض الأحيان غالبا دائما
154	أنا شخص جيد ومحترم	لا	بعض الأحيان غالبا دائما
155	عندما أقوم بعمل ما أحب أن أتحدى الآخرين	لا	بعض الأحيان غالبا دائما
156	أفعل الشيء مرارا وتكرارا ولا أستطيع التوقف	لا	بعض الأحيان غالبا دائما
157	أنا فخور جدا بوالدي	لا	بعض الأحيان غالبا دائما
158	أجد صعوبة في السيطرة على الأفكار التي في رأسي	لا	بعض الأحيان غالبا دائما
159	ينظر معلمي دائما الى الأشياء السلبية التي لدي	لا	بعض الأحيان غالبا دائما
160	أبقى مستيقظا على مدى 24 ساعة من غير أن أشعر بالتعب	لا	بعض الأحيان غالبا دائما
161	أشعر بالغضب والعصبية عندما لا تسير الأمور كما أريدها	لا	بعض الأحيان غالبا دائما
162	أشعر بأنني أريد أن أترك المدرسة والدراسة	لا	بعض الأحيان غالبا دائما
163	يحبني الآخرون	لا	بعض الأحيان غالبا دائما
164	أشعر بأن هناك أحد يريد إيذائي	لا	بعض الأحيان غالبا دائما
165	يلومني الآخرون على أشياء لم أقم بها	لا	بعض الأحيان غالبا دائما
166	أسرع بوجه الآخرين عندما أشعر بالغضب	لا	بعض الأحيان غالبا دائما
167	أشعر بأن حياتي تسوء أكثر فأكثر	لا	بعض الأحيان غالبا دائما
168	أشعر بالثقة بالنفس	لا	بعض الأحيان غالبا دائما
169	لدي مشكلات صعبة في التركيز	لا	بعض الأحيان غالبا دائما
170	المعلمون غير عادلين	لا	بعض الأحيان غالبا دائما
171	أنا شخص يمكن الاعتماد عليه	لا	بعض الأحيان غالبا دائما
172	الأشياء الخطرة تثير السعادة والمتعة لدي	لا	بعض الأحيان غالبا دائما
173	لا أحد يفهمني	لا	بعض الأحيان غالبا دائما
174	عندما أشعر بالغضب، أشعر بأنني أريد إيذاء الآخرين	لا	بعض الأحيان غالبا دائما
175	أرافق أصدقائي (معلمي) دائما	لا	بعض الأحيان غالبا دائما
176	يخبرني آخرون بأنني شخص مزعج	لا	بعض الأحيان غالبا دائما
177	يثق والدي بي	لا	بعض الأحيان غالبا دائما
178	يهملني الآخرون، ولا يكترثون لي	لا	بعض الأحيان غالبا دائما
179	أشعر بأن لا أصدقاء لدي	لا	بعض الأحيان غالبا دائما
180	يشعر الآخرون بالغضب مني حتى ولو لم أسبب الأذى لهم	لا	بعض الأحيان غالبا دائما

181	أشعر بأن علي أن أقوم من مكاني وأدور حول المكان	لا	بعض الأحيان	غالباً دائماً
182	يتوقع مني والدي كثيراً	لا	بعض الأحيان	غالباً دائماً
183	أشعر بالقلق من الأشياء التي يمكن أن تحدث	لا	بعض الأحيان	غالباً دائماً
184	أكره المدرسة	لا	بعض الأحيان	غالباً دائماً
185	أحب أن أكون أول شخص يمكن أن يجرب شيئاً جديداً	لا	بعض الأحيان	غالباً دائماً
186	أتلقى اتصالات من أشخاص مهمين كالممثلين المشهورين	لا	بعض الأحيان	غالباً دائماً
187	والدي ووالدتي يحبون أصدقائي	لا	بعض الأحيان	غالباً دائماً
188	يخاف أصدقائي من الأشياء التي أقوم بها	لا	بعض الأحيان	غالباً دائماً
189	يظن الأشخاص الآخرين بأنني شخص ممتع وجدير بصحبته (صداقته)	لا	بعض الأحيان	غالباً دائماً

BARCODE:

البيانات الديموغرافية

الآباء الأعزاء،

أنا أحمد محمد، طالب دكتوراه في جامعة إقليم الباسك/ جامعة إقليم الباسك (UPV) أجري مشروعا بشأن رفاه المراهقين في البيئة المنزلية. سوف تسأل أطفالك كيف يشعرون تجاه أنفسهم في الاستبيان المرفق في الدراسة الاستقصائية يجب أن يجيب عليها كلا الوالدين.

كما أن هناك عدة أمور مهمة جدا يجب أن تضعها في الاعتبار قبل أن تقرر الإجابة على هذا الاستبيان

1. ليس عليك القيام بذلك
2. يمكنك أنت وطفلك أن تقرر عدم المشاركة
3. لا توجد عواقب سلبية لعدم الإجابة على هذا الاستطلاع
4. في حالة قبولك بالإجابة على الاستبيان ستكون إجابتك سرية، كما أن الباحث لن يشارك هذه الإجابات لأي طرف ثالث.
5. ستحذف كل المعلومات التي تشير إلى هويتك، وستستبدل برقم تسلسلي لحماية هويتك

تعليمات

يرجى وضع دائرة حول الإجابات التي تختارها، في المكان المناسب للإجابة. ونحن نشجع على الإجابة على جميع الأسئلة للحصول على معلومات دقيقة تعمل على تحسين دقة أبحاثنا. إذا كان لديكم أي أسئلة لا تترددوا في الاتصال بنا (البريد الإلكتروني: ahmed.a.mnhd@gmail.com الهاتف: (+974-77776414). بعد الانتهاء من هذا الاستبيان يرجى إعادته إلى مساعد الباحث الذي سلمها لكم. اشكركم على حسن تعاونكم ووقتكم.

أسئلة عامة:

1. ما هو تاريخ ولادة طفلك؟ (DD/MM/YYY)		
2. ما مكان ولادة طفلك؟		
3. أين كان يعيش طفلك بين سن 0-3 سنوات؟		
4. أين كان يعيش طفلك بين سن 4-6 سنوات؟		
5. أين كان يعيش طفلك بين سن 7 سنوات وحتى الآن سنوات من العمر؟		
6. جنس الطفل	أنثى	ذكر
7. مكان الإقامة الحالية الخاصة بك	فيلا	شقة / مجمع سكني
8. هل مكان الإقامة الحالية الخاصة بك فيها تتمتع بمساحات في الهواء الطلق لممارسة الأنشطة المختلفة	نعم	لا

- **يرجى الإجابة على هذه الأسئلة بالأرقام:**

9. كم عدد أفراد أسرتك تقريبا حاليا؟	
10. كم طفلا لديك في الأسرة؟	
11. كم عدد الخدم (العمالة المنزلية) الذين يعيشون في مسكنك حاليا؟	

الأم:

- الأسئلة التالية هي لأم الطفل الذي يشارك في الدراسة:

12. ما تاريخ ميلاد الأم؟ (DD/MM/YYYY)	(___/___/____)
13. ما جنسية الأم؟	
14. ما مهنة الأم الحالية؟ الرجاء تحديد المسمى الوظيفي	

- **يرجى وضع دائرة حول الإجابة المناسبة:**

15. ما أعلى مستوى تعليمي؟	المدرسة الابتدائية/الإعدادية	المرحلة الثانوية/الشهادة الثانوية	درجة البكالوريوس/ مرحلة البكالوريوس	الدراسات العليا / درجة الماجستير	دراسات الدكتوراه أو أعلى	
16. ما الراتب الذي تحصل عليه الأم؟	لا راتب	10,000- فما أقل	10,000-20,000	20,000-30,000	30,000-40,000	أكثر من 40,000

17. هل هناك تاريخ من المشاكل الصحية في جانب الأم من الأسرة؟	نعم	لا
18. إذا كانت الإجابة بنعم، يرجى تحديد المشاكل الصحية الطبية المعروفة الشائعة في جانب الأم من الأسرة في الفراغ أدناه:		

19. هل هناك تاريخ لمشكلات الصحة النفسية من جانب الأم من الأسرة؟	نعم	لا
20. هل هناك تاريخ لمشكلات القلق النفسي؟	نعم	لا
21. هل هناك تاريخ لمشكلات الاكتئاب النفسي؟	نعم	لا
22. هل هناك تاريخ لمشكلات النشاط الزائد ونقص الانتباه في الأسرة من جانب الأم؟	نعم	لا
23. إذا كانت الإجابة بنعم، يرجى تحديد مشكلات الصحة النفسية المعروفة الشائعة من جانب الأم في الأسرة في الفراغ أدناه		

37. هل هناك تاريخ لمشكلات الصحة النفسية من جانب أسرة الأب؟	نعم	لا
38. هل هناك تاريخ لمشكلات القلق النفسي؟	نعم	لا
39. هل هناك تاريخ لمشكلات الاكتئاب النفسي؟	نعم	لا
40. هل هناك تاريخ لمشكلات النشاط الزائد ونقص الانتباه في أسرة الأب؟	نعم	لا
41. إذا كنت الإجابة بنعم، يرجى تحديد مشكلات الصحة النفسية الموجودة الشائعة من جانب الأم في الأسرة في المربع أدناه.		

الأسئلة التالية تدور حول الوقت الذي يقضيه الأب مع طفلها:

- **تعليمات إضافية: فكر في الشهر الحالي وكيف قضيته مع طفلك.**
- كم وجبة غداء أعدتها لطفلك خلال الأيام التي تقضيها مع طفلك في الأسبوع:

42. إفطار	0	1	2	3	4	5
43. غداء	0	1	2	3	4	5
44. عشاء	0	1	2	3	4	5

- كم عدد الوجبات خلال عطلة نهاية الأسبوع التي قضيتها مع طفلك:

45. إفطار	0	1	2
46. غداء	0	2	3
47. عشاء	0	2	3

تعليمات: في حالة وجود عدة جليسات منزليات (خادمات") يرجى الاجابة عن العاملة المنزلية (الخادمة) التي تتعامل مع طفلك أي التي لديها أكبر اتصال مع طفلك.

- **العاملة المنزلية (الخادمة الأساسية التي تقوم برعاية طفلك):**

48. ما مدة إقامة العاملة لديك (الخادمة)؟ يرجى تحديد الوقت في الأشهر	
49. كم عدد الأطفال التي تقوم هذه العاملة بخدمتهم؟	
50. ما تاريخ ميلاد العاملة المنزلية (الخادمة التي ترعى الأطفال)؟ (DD/MM/YYYY)	
51. ما جنسية العاملة المنزلية (الخادمة التي تقوم برعاية أطفالك)؟	

الأسئلة التالية تدور حول الوقت الذي تقضيه الأم مع طفلها:

- **تعليمات إضافية: فكر في الشهر الحالي وكيف قضيته مع طفلك.**
- كم وجبة غداء أعدتها لطفلك خلال الأيام التي تقضيها مع طفلك في الأسبوع:

24. إفطار	0	1	2	3	4	5
25. غداء	0	1	2	3	4	5
26. عشاء	0	1	2	3	4	5

- كم عدد الوجبات خلال عطلة نهاية الأسبوع التي تحضرها مع طفلك:

27. إفطار	0	1	2
28. غداء	0	2	3
29. عشاء	0	2	3

الأب:

30. ما تاريخ ميلاد الأب؟ (DD/MM/YYYY)	(__/__/____)
31. ما جنسية الأب؟	
32. ما مهنة الأب الحالية؟ الرجاء تحديد المسمى الوظيفي	

- **يرجى وضع دائرة حول الإجابة المناسبة:**

33. ما أعلى مستوى تعليمي للأب؟	المدرسة الابتدائية/الإعدادية	المرحلة الثانوية/الشهادة الثانوية	درجة البكالوريوس/ مرحلة البكالوريوس	الدراسات العليا / درجة الماجستير	دراسات الدكتوراه أو أعلى
34. ما الراتب الذي يحصل عليه الأب؟	لا دخل	10,000-أقل	10,000- 20,000	20,000- 30,000	30,000- 40,000	أكثر من 40,000

35. هل هناك تاريخ من المشاكل الصحية في جانب الأب من الأسرة؟	نعم	لا
36. إذا كانت الإجابة بنعم، يرجى تحديد المشاكل الصحية الطبية الشعورية الشائعة في جانب الأم من الأسرة في المربع أدناه.		

- **ضع دائرة حول الإجابة المناسبة:**

52. ما أعلى مستوى تعليمي للعاملة المنزلية التي ترعى طفلك؟	المدرسة الابتدائية/الإعدادية	المتوسطة الثانوية/الشهادة الثانوية	درجة البكالوريوس/ متوسطة البكالوريوس	الدراسات العليا / درجة الماجستير	الدكتوراه أو أعلى	
53. ما الراتب الذي تحصل عليه؟	أقل من 1500	1500 -2000	2000 -2500	2500-3000	3000-4000	أكثر من 4000

الأسئلة التالية تدور حول الوقت الذي تقضيه العاملة المنزلية (الخادمة التي تقوم برعاية طفلك) مع طفلك:

- **تعليمات إضافية: فكر في الشهر الحالي وكيف قضت العاملة المنزلية مع طفلك (التي تقوم برعاية طفلك)**

- كم عدد وجبات الغذاء التي أعدها العاملة المنزلية لطفلك خلال الوقت الذي تقضيه معه في الأسبوع

54. إفطار	0	1	2	3	4	5
55. غذاء	0	1	2	3	4	5
56. عشاء	0	1	2	3	4	5

- **كم عدد الوجبات التي تُطعمه العاملة المنزلية مع طفلك خلال عطلة نهاية الأسبوع (التي ترعى طفلك دائما):**

57. إفطار	0	1	2
58. غذاء	0	2	3
59. عشاء	0	2	3

- **العاملة المنزلية الثانية**

60. ما مدة إقامة العاملة المنزلية الثانية لديكم (الخادمة)؟ برجى تحديد الوقت في الأشهر	
61. ما مدى اعتمادك عليها؟	1- 2- 3- 4- 5- 6- 7- 8- 9- 10
62. كم عدد الأطفال التي تقوم هذه العاملة بخدمتهم؟	
63. ما تاريخ ميلاد العاملة المنزلية الثانية (الخادمة التي ترعى الأطفال)؟(DD/MM/YYYY)	
64. ما جنسية العاملة المنزلية الثانية (الخادمة التي تقوم برعاية أطفالك)؟	

- **ضع دائرة حول الإجابة المناسبة:**

65. ما أعلى مستوى تعليمي للعاملة المنزلية التي ترعى طفلك؟	المدرسة الابتدائية/الإعدادية	المتوسطة الثانوية/الشهادة الثانوية	درجة البكالوريوس/ متوسطة البكالوريوس	الدراسات العليا / درجة الماجستير	الدكتوراه أو أعلى	
66. ما الراتب الذي تحصل عليه؟	أقل من 1500	1500 -2000	2000 -2500	3000-2500	3000-4000	أكثر من 4000

الأسئلة التالية تدور حول الوقت الذي تقضيه العاملة المنزلية الثانية مع طفلك (الخادمة التي تقوم برعاية طفلك):

- **تعليمات إضافية: فكر في الشهر الحالي وكيف قضت العاملة المنزلية مع طفلك (التي تقوم برعاية طفلك)**

- كم عدد وجبات الغذاء التي أعدها العاملة المنزلية الثانية لطفلك خلال الوقت الذي تقضيه معه في الأسبوع

67. إفطار	0	1	2	3	4	5
68. غذاء	0	1	2	3	4	5
69. عشاء	0	1	2	3	4	5

- كم عدد الوجبات التي تُطعمه العاملة المنزلية الثانية مع طفلك خلال عطلة نهاية الأسبوع

70. إفطار	0	1	2
71. غذاء	0	2	3
72. عشاء	0	2	3

شكراً لإجابتكم على الأسئلة
ونثمن كثيراً مشاركتكم.

Foreign domestic workers (FDWs) may be a source of instrumental support to the children they care for, but we know very little of the effects of their presence on their charges' emotional and behavioral well-being. This doctoral dissertation focuses on attachment security to the primary (mother and father) and secondary proxy (FDW) parental figures in Qatar's children, adolescents, and young people. Investigating its effects on emotion regulation (ER), hyperactivity, and attention problems may provide insight into the role of adolescents' attachment security as related to such secondary attachment figures. To achieve this objective, three empirical studies were designed. Study 1 is a meta-analytic investigation that examines the relationship between attention-deficit/ hyperactivity disorder (ADHD) forms and emotion (dys)regulation strategies, considering a broad spectrum of possible manifestations across samples and exploring the effects of different moderators. Study 2 covers the validation in Modern Standard Arabic of an instrument to assess attachment to parents and to a commonplace secondary figure in Qatar: the FDW, also known as Khadama. Finally, Study 3 utilizes a mediation analysis to investigate if ER mediates the relationship between attachment security to both primary (mother and father) and secondary parental figures and ADHD symptoms (hyperactivity and attention problems). Based on 172 selected studies, Study 1 demonstrated the positive association between ADHD and emotion dysregulation, forming the base to investigate other external, but proxy, factors like attachment security that may account for the development of adolescents' ER strategies. In Study 2, the Arabic Inventory of Parent and Domestic Worker Attachment was administered to a sample of 387 adolescents living in Qatar and proved a valid and reliable option to investigate the attachment security adolescents acquire in their interaction with primary parental figures and FDWs. Study 3 was tested in a sample of 286 Arabic-speaking adolescents. It demonstrated that attachment security to parents had an association with ADHD symptoms (negative) and ER strategies (negative for cognitive reappraisal and positive for expressive suppression). However, ER strategies did not mediate the relationship between attachment security and ADHD symptoms. Intriguing gender effects were revealed, the most pressing of which is that attachment security to the FDW predicted hyperactivity among girls, as it has been discussed that girls spend more time with FDWs owing to gendered activity organization. Practical recommendations and future research scope are discussed.

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