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Arab immigrant Muslim mothers' perceptions of children's attention deficit hyperactivity disorder (ADHD)

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ARAB IMMIGRANT MUSLIM MOTHERS' PERCEPTIONS OF CHILDREN'S ATTENTION DEFECIT HYPERACTIVITY DISORDER (ADHD)

by

Manar Mahmoud Al-Azzam

An Abstract

Of a thesis submitted in partial fulfillment
of the requirements for the Doctor of
Philosophy degree in Nursing
in the Graduate College of
The University of Iowa

December 2011

Thesis Supervisors: Assistant Professor Sandra Daack-Hirsch

ABSTRACT

ADHD is a common behavioral problem among children and adolescents and has been studied extensively. However, this disorder is still understudied in ethnic, immigrant minorities in the U.S. such as Arab families. Thus, this descriptive, qualitative study was important and needed because a gap exists in the literature concerning Arab immigrant mothers' perceptions of the children's behavioral problems such as ADHD and the implications of such child behavioral problems within the Arab immigrant family. The available literature has focused on other minorities in the United States and not Arab minorities. Accordingly, this study focused on and took a qualitative approach in order to gain an in-depth understanding of how Arab immigrant mothers perceive, describe and respond to children behavioral problems. The main purpose of this study was to elicit mothers' perceptions of and responses to behavioral problems in children, especially those behaviors associated with ADHD, in a purposeful sample comprised of Arab immigrant Muslim mothers.

The findings of this study indicate that generally, mothers used several terms to describe problematic behaviors in children, words like "active", "overactive", "spoiled", "concentration problems,"…etc. Also, mothers reported several strategies for how they would respond to a child's behaviors if the child exhibited behavioral problems as well as the use of many resources available for handling a child with behavioral problems. Mothers reported various issues they considered to be triggers that would cause them to seek help for a child's behaviors. Moreover, mothers emphasized the issues of social stigma, lack of knowledge, and lack of resources as problems that would hinder them from seeking professional mental health assistance for treating behavioral problems for children in the mothers' country of birth. The results indicated that the mothers' unfavorable attitudes toward seeking formal mental health services are most likely to be affected by cultural and traditional beliefs about mental health problem. Interestingly,

mothers reported that their attitudes toward children's behavioral problems differ when in the U.S. than the generally accepted attitudes held in their home countries.

This study added new knowledge and also provided information to social scientists, health care providers, mental health professionals, educators, and policy makers to better understand the needs of Arab immigrant families with children who may suffer from behavioral problems/ADHD. Finally, this study provided information for future researchers who wish to study child behavioral problems/ADHD with immigrant families other than Arabs.

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Graduate College
The University of Iowa
Iowa City, Iowa

CERTIFICATE OF APPROVAL

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PH.D. THESIS

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This is to certify that the Ph.D. thesis of

Manar Mahmoud Al-Azzam

has been approved by the Examining Committee
for the thesis requirement for the Doctor of Philosophy
degree in Nursing at the December 2011 graduation.

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To my Khaled, who supports and inspires me. To my children, Jumana, Jana and Huda.
To my Mom and Dad.

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I am thankful to my parents who nurtured me with faith and genuine desire to become a successful individual. Special thanks to my caring and supportive husband Khaled and my children Jumana, Jana and Huda whose patience, love, and support have been the best companions in this long and difficult journey. A huge thank you and love go to my friends for their prayers and support.

ABSTRACT

ADHD is a common behavioral problem among children and adolescents and has been studied extensively. However, this disorder is still understudied in ethnic, immigrant minorities in the U.S. such as Arab families. Thus, this descriptive, qualitative study was important and needed because a gap exists in the literature concerning Arab immigrant mothers' perceptions of the children's behavioral problems such as ADHD and the implications of such child behavioral problems within the Arab immigrant family. The available literature has focused on other minorities in the United States and not Arab minorities. Accordingly, this study focused on and took a qualitative approach in order to gain an in-depth understanding of how Arab immigrant mothers perceive, describe and respond to children behavioral problems. The main purpose of this study was to elicit mothers' perceptions of and responses to behavioral problems in children, especially those behaviors associated with ADHD, in a purposeful sample comprised of Arab immigrant Muslim mothers.

The findings of this study indicate that generally, mothers used several terms to describe problematic behaviors in children, words like "active", "overactive", "spoiled", "concentration problems,"…etc. Also, mothers reported several strategies for how they would respond to a child's behaviors if the child exhibited behavioral problems as well as the use of many resources available for handling a child with behavioral problems. Mothers reported various issues they considered to be triggers that would cause them to seek help for a child's behaviors. Moreover, mothers emphasized the issues of social stigma, lack of knowledge, and lack of resources as problems that would hinder them from seeking professional mental health assistance for treating behavioral problems for children in the mothers' country of birth. The results indicated that the mothers' unfavorable attitudes toward seeking formal mental health services are most likely to be affected by cultural and traditional beliefs about mental health problem. Interestingly,

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CHAPTER 1. INTRODUCTION: ARAB MUSLIM MOTHERS' PERCEPTIONS OF CHILDREN'S ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)

Attention Deficit Hyperactivity Disorder (ADHD) is a complex disease characterized by core symptoms of hyperactivity, inattention, and impulsivity, affecting children across every socioeconomic status, ethnic, and regional group (Barkley, 2006). An estimated 40–60% of children with ADHD have comorbidities such as anxiety, depression, and learning disabilities (Barkley, 2003). Fifty percent of ADHD cases are associated with disruptive and aggressive behaviors characteristic of oppositional defiant disorder (ODD) and conduct disorder (CD) (APA, 2000). ADHD may serve as a developmental precursor to increasingly problematic behavioral outcomes because children with ADHD are at significantly higher risk for substance abuse, delinquency, and persistent problems with social relationships, as well as academic and job performance difficulties (Barkley & Murphy, 2006; Herpertz et al., 2005; Kendall, Leo, Perrin, & Hatton, 2005). ADHD is a serious public health disorder that significantly impacts a person's emotional, social, and cognitive functioning over the course of a lifespan. ADHD is a complex disorder, with genetic and environmental risk factors contributing to its onset (Barkley, 1998; Karam et al., 2009; Parens & Johnston, 2009). Recent literature reports that multimodal treatments appear to be effective in treating ADHD.

ADHD is one of the most prevalent behavioral disorders of childhood. However, researchers have reported that the prevalence of ADHD varies across countries, with a worldwide prevalence estimated to range between 2.2% and 17.8% (Skounti, Philalithis, & Galanakis, 2007). One of the explanations for this variability in the occurrence of ADHD is that the perception of ADHD differs across cultures (Bussing, Schoenberg, Rogers, Zima, & Angus, 1998; Livingston, 1999; Parens & Johnston, 2009; Polanczyk &

Jensen, 2008; Rohde et al., 2005). Further, whether individuals and communities perceive the behaviors associated with ADHD as problematic depends on a given culture's acceptance of the problem behaviors associated with ADHD and their occurrence in children (Livingston, 1999; Reid, 1995; Rohde et al., 2005; Farah et al., 2009; Faraone, Sergeant, Gillberg, & Biederman, 2003).

Prevalence of ADHD in the Arab World

ADHD has received comprehensive attention in the United States and Europe, but less is known about ADHD in other parts of the world. For example, in the Arab world there is a shortage of studies that address children's behavioral problems in general and ADHD in specific (Al Hamed, Taha, Sabra, & Bella, 2008; Al-Sharbati, Al-Adawi, Ganguly, Al-Lawatiya, & Al-Mshefri, 2008; Alyahri & Goodman, 2008; Elhamid, Howe, & Reading, 2009). The prevalence of ADHD symptoms in Arab samples varies considerably between 0.5% to 14.9% (Karam et al., 2009). These rates were based on a limited number of studies conducted in Arab countries and using different methodologies. There is limited information available about the risk factors, cultural factors, and families' perceptions of children's behavioral problems within the Arab community (Karam et al., 2009). Also, while ADHD is studied in some countries comprising the Arab world (UAE, Oman, Lebanon, Egypt, Saudi Arabia, and Qatar), in many other countries there have been no efforts to study this type of disorder (e.g., Jordan, Bahrain, Palestine, Morocco, and Algeria). Therefore, little is known about childhood behavioral problems such as ADHD in this part of the world.

Children in Arab culture

In Arab culture, family is the strongest social unit and is the base on which society is built. The dominant values of the Arab family are honor, loyalty, obligations, responsibility, and unity (Abudabbeh, 1996; Tadmouri, Al Ali, & Al Khaja, 2004) . Literature findings indicate that the Arab family serves as the primary and basic

institution in which beliefs, norms, values, and traditions are taught and shared between generations (Barakat, 1993; Patai, 1983; Patai, 2002). Family relatedness and obedient, respectful behavior in children are important childrearing values and socialization goals among Arab parents. In an Arab society, children are raised according to cultural norms and traditions that are necessary for their developmental milestones (Hattar-Pollara & Meleis, 1995). Further, there is an expectation for these children to show high levels of respect and obedience toward others and to demonstrate behaviors that evidence a proper upbringing. Any display of disrespectful behavior reflects poorly not only on the individual but, perhaps more importantly, on the family. A child's behavior is considered a direct reflection of parenting within the Arab culture. When children misbehave, the perception is that their parents possess poor parenting skills and do not know how to raise a child appropriately.

Culture and ADHD

The perception of ADHD behavioral symptoms varies considerably across cultures (Bussing, Schoenberg, Rogers et al., 1998; Livingston, 1999; Parens & Johnston, 2009; Polanczyk & Jensen, 2008; Rohde et al., 2005). Findings as presented in the literature suggest that cultural factors might contribute to the identification of ADHD in its clinical manifestations (Livingston, 1999; Reid, 1995; Rohde et al., 2005; Farah et al., 2009; Faraone et al., 2003). Behavior considered problematic and necessitating medical attention in one culture may be perceived as the typical normal behavior of an active child in another. Thus, to completely understand how to identify and treat ADHD, it must be studied from within a cultural perspective. Research suggests that "culturally-relevant" factors, like beliefs and values regarding child behavior, impact the way members of various ethnic and cultural groups view and respond to problematic behavior in children (Barkley, 2006; Eiraldi, Mazzuca, Clarke, & Power, 2006).

Research indicates that ADHD exists in a variety of cultures and ethnic groups, and "is not simply a product of western industrialized societies" (Faraone et al., 2003). However, in the United States, families from ethnic minorities do not recognize the symptoms and the diagnosis of ADHD in children to the same extent as do families of nonminority children (Bailey, 2005). Some of the proposed barriers for ADHD recognition in ethnic minorities in the U.S. include lack of knowledge, language barriers, cultural factors, fear of social stigma, and financial burden of treatment (Bailey & Owens, 2005; Rothe, 2005). In some cultures, the behaviors associated with ADHD may be viewed by the family and the community as misbehaviors rather than as problems needing medical attention. Such a view may impact the child's prognosis as well as the early detection of any abnormal behavior, which may result in more severe and chronic conditions. Hence, there is a great need for understanding the cultural norms and values of ethnic and minority groups in terms of how these groups perceive and approach children who exhibit behavioral problems, especially ADHD, in the United States (Bailey & Owens, 2005; Rothe, 2005).

ADHD is a behavioral problem that needs to be addressed from multiple perspectives, expanding from that of the individual to include viewpoints of culture, family, and environment (APA, 2000; Barkley, 2006; Kendall, Leo, Perrin, & Hatton, 2005b; Livingston, 1999). For example, understanding the cultural foundations shaping the perception of ADHD is important because the ideas and values foundational to the demands made in the homes, schools, and communities of people differ among ethnic and cultural groups (Khamis, 2006; Livingston, 1999). Thus, it is recommended that ADHD be re-examined in terms of the role of culture and its impact on the assessment, diagnosis, and treatment of ADHD (Khamis, 2006).

Research aimed at understanding parental beliefs is one way to elucidate how members of a culture perceive and respond to problematic behavior in children. Studying behavioral problems among ethnic groups in the United States will aid in the

development of culturally sensitive intervention and educational programs aimed at addressing problematic child behavior while decreasing critical mental health disparities among ethnic groups (Bailey, 2005; Bengi-Arslan, Verhulst, Ende, & Erol, 1997; Bussing, Schoenberg, & Perwien, 1998; Bussing, Gary, Mills, & Wilson Garvan, 2003; Kendall & Hatton, 2002; Kendall, Leo, Perrin, & Hatton, 2005b).

In summary, health care providers need to recognize and understand the factors that may influence Arab families' attitudes toward childhood behavioral problems and specifically ADHD. Since Arab culture tends to play a significant role in shaping an Arab individual's attitudes and behavior, particularly when it comes to children's mental health, mental health professionals in general need to be knowledgeable about their Arab clients by understanding their cultural values, beliefs, and practices.

Conceptual Framework

The ecological framework, developed by Urie Bronfenbrenner (1979), will be used as a lens to view how immigrant Arab Muslim mothers perceive children's ADHD. This framework suggests that a context of multiple interacting ecological systems that are embedded within one another, ranging from micro- to macro-levels (microsystem, mesosystem, exosystem, macrosystem), provides a model for understanding the experience of immigrant Arab Muslim mothers' understanding of ADHD. In this framework, the child is at the center and the child's behavior is the result of repeated, reciprocal interactions between the child and these multiple ecological systems over time. It proposes that the microsystem (family) is the most influential determinant of child development (Bronfenbrenner & Morris, 2006). Mothers' beliefs about children's behaviors are influenced by a mother's broader culture, which plays a significant role in shaping the parenting process. Thus, if Arab immigrant mothers have beliefs about ADHD and child behavioral problems that are influenced by their culture, then these

beliefs may influence how they explain, describe, and manage the signs and symptoms of ADHD.

Study Terms Operational and Conceptual Definition

Immigrant Arab-Muslim Mothers' Perceptions of ADHD:

Conceptually, the term "perception" is generally defines as defined as "the process of attaining awareness or understanding of sensory information." Operationally, the perception of ADHD among immigrant Arab Muslim mothers is defined by the words Arab-Muslim mothers use to describe how they feel about children's behavioral problems associated with ADHD and how these mothers (based on their perceptions) respond to these behaviors.

Attention Deficit Hyperactivity Disorder (ADHD):

Operationally, ADHD is defined as a neurobiological, neurobehavioral, and developmental disorder that affects a child's ability to function properly at his/her developmental stage and may lead to functional impairment of daily activities as a result of the hyperactivity, impulsivity, and inattention features of this disorder (Barkley, 2006).

Conceptually, ADHD is defined as a behavioral problem that may impact a child's ability to function properly according to his/her age, with a concomitant reaction, often negative, on family and caretaker dynamics.

Immigrant Arab-Muslim Mothers:

For the purpose of this study:

Conceptually, an immigrant Arab-Muslim mother is defined as a female of Arab ancestry, who follows the rules of Islam.

Operationally, an immigrant Arab-Muslim mother is defined as a mother who migrated from or was born to individuals from an Arab country (Saudi Arabia, Kuwait, Bahrain, Qatar, United Arab Emirates, Oman, Yemen, Jordan, Iraq, Syria, Lebanon,

Palestine, Egypt, Sudan, Libya, Tunisia, Algeria, and Morocco) and who follows the rules religion of Islam. Additionally, such women are at least18 years of age, are first-generation United States residents, and have children between the ages of 5 and 12 years old.

Statement of the Problem

The Arab American Institute estimates 3.5 million Arab immigrants reside in the 50 states of the U.S. (Arab American Institute, 2003). Arab immigrant parents typically come from countries where ADHD and childhood behavioral problems are not culturally recognized to a culture (U.S.) where an understanding of ADHD and childhood behavioral problems is well established. Immigrant parents tend to hold on to their culturally-rooted childrearing values while trying to adopt the mainstream values of the new culture.

There is a scarcity of studies addressing children's behavioral problems in this ethnic group in the United States (Faragallah, Schumm, & Webb, 1997; Nassar-McMillan, Hakim-Larson, & Hakim-Larson, 2003). Moreover, it is not known how Arab immigrant Muslim mothers understand ADHD, how they perceive such child behavioral problems, nor how they respond in case they notice any inappropriate behaviors among their children. Also, Arab immigrant families in the U.S. are increasing. Hence, it is necessary to conduct a study that explores the perceptions of Arab parents (mothers in specific) about childhood ADHD in this growing population. Such knowledge is important in planning child mental health and related services that would benefit Arab immigrant families. The literature emphasizes the importance of early recognition and identification of the signs and symptoms for ADHD to provide intervention and prevent further complication. Thus, the development of culturally sensitive education and intervention programs for these families will help them better identify and manage their children's behavioral issues.

The purpose of this study was to elicit mothers' perceptions of and responses to behavioral problems in children, especially those behaviors associated with ADHD, in a purposeful sample of Arab immigrant Muslim mothers. Mothers are considered the primary caregivers of children and the ones who spend the majority of time with children in the Arab culture. Thus, the overall assumption of this study was that knowledge of parental beliefs and perceptions of child behavior problems such as ADHD is fundamental to better understanding, identifying, and managing these problems in Arab children. This information should aid in the development of culturally appropriate prevention and intervention programs for Arab immigrants in the United States. Consequently, this study will address the following specific aims:

Study Aims

1. Explore how Arab immigrant Muslim mothers describe and manage children who display externalizing behaviors (e.g., inattention, impulsivity, hyperactivity, and oppositional attitudes).
2. Examine Arab immigrant Muslim mothers' understanding and perceptions of the diagnosis of ADHD.
3. Compare Arab immigrant Muslim mothers' perceptions of the diagnosis and management of ADHD with western cultural practices in diagnosis and management.

Summary

ADHD is a common behavioral problem among children and adolescents and has been studied extensively. However, this disorder is still understudied in ethnic, immigrant minorities in the U.S. such as Arab families. Thus, this descriptive, qualitative study was important and needed because a gap exists in the literature concerning Arab immigrant mothers' perceptions of their children's behavioral problems such as ADHD and the implications of such child behavioral problems within the Arab immigrant family. The

available literature has focused on other minorities in the United States and not Arab minorities. Accordingly, this study focused on and took a qualitative approach in order to gain an in-depth understanding of how Arab immigrant mothers perceive child behavioral problems. Since ADHD has been reported in many immigrant families other than Arab families, this study added new knowledge to this neglected area, and it also provided information to social scientists, health care providers, mental health professionals, educators, and policy makers to better understand the needs of Arab immigrant families with children who may suffer from behavioral problems/ADHD. Finally, this study provided information for future researchers who wish to study child behavioral problems/ADHD with immigrant families other than Arabs.

CHAPTER 2. REVIEW OF THE LITERATURE

The review of literature begins with an overview of ADHD. This review summarizes the current knowledge about the causes of ADHD, epidemiology factors, diagnostic procedures, and treatment modalities. Next, a systematic literature review of studies conducted in the Arab world concerning ADHD is presented. Then, the Arab culture and the perception of children's mental health among Arab families are discussed. At the end of this chapter, a summary of the conceptual framework that will be used to guide the study and how it relates to this study is presented.

Attention Deficit Hyperactivity Disorder (ADHD)

Attention Deficit Hyperactivity Disorder (ADHD) is a neurobiological, neurobehavioral disorder that affects the child's ability to function properly at his or her developmental stage (APA, 2000; Barkley, 2006). ADHD may lead to the functional impairment of daily activities as a result of the hyperactivity, the impulsivity, and the inattention that are the primary behavioral symptoms of this disorder (Barkley, 2006). Children with ADHD often exhibit excessive and repeatedly inappropriate motor activity, poor concentration, high levels of distractibility, and poorly regulated, impulsive behavior. According to the fourth edition of DSM-IV-TR, "The essential feature of Attention-Deficit/Hyperactivity Disorder is a persistent pattern of inattention and/or hyperactivity-impulsivity that is more frequent and severe than is typically observed in individuals at a comparable level of development"(APA, 2000 p.85). Attention Deficit Hyperactivity Disorder has three subtypes, according to the DSM-IV-TR classification system. The first subtype is the predominantly hyperactive-impulsive type, where six or more of the symptoms are in the hyperactivity-impulsivity categories (APA, 1994; APA, 2000) (Table 1). The second subtype is the predominantly inattentive type, where the majority of the symptoms are in the inattention category. The third subtype is the combined hyperactive-impulsive and inattentive type; in order to diagnose a child with

this type there has to be six or more symptoms of inattention and six or more symptoms of hyperactivity-impulsivity present (see Table 1).

The worldwide prevalence of ADHD ranges between 2.2% and 17.8% (Skounti, Philalithis, & Galanakis, 2007). Comorbidities such as anxiety, depression, and/or learning disabilities have been reported in 40–60% of children with ADHD (Barkley & Murphy, 2006). Disruptive and aggressive behaviors like oppositional defiant disorder (ODD) and conduct disorder (CD) are associated in approximately 50% of ADHD cases (APA, 1994). Signs and symptoms of ADHD vary between hyperactivity, inattention, and impulsivity, and it affects children across race, ethnicity and socioeconomic status (SES) (Barkley & Murphy, 2006). Children with ADHD are at a higher risk for substance abuse, delinquency, and persistent problems with social relationships, as well as academic or job performance, compared to those who are not affected with ADHD (Barkley & Murphy, 2006; Kendall, Leo, Perrin, & Hatton, 2005a).

There is no one known specific cause for ADHD (Barkley, 1998; Karam et al., 2009; Parens & Johnston, 2009). Scientists try to explain the cause of this disease using various models or approaches. These include biological, neuropsychobiological, trauma-based, and environmentally-based models, or a combination of these models. Furthermore, the treatment for children with ADHD includes a combination of counseling, behavior management, family therapy, and medication to manage the core symptoms and the associated problems (Barkley, 1998; Malhi & Singhi, 2001). These areas are discussed in further details later in this section.

The diagnosis of ADHD usually does not occur until the child is seven to ten years old; however, the initial ADHD symptoms can be noticed as early as three years of age (Barkley, 2006; Greenhill, Posner, Vaughan, & Kratochvil, 2008). For many children, ADHD behaviors are not noticed until children enter elementary school. Experts tried to explain such phenomena by stating that almost all toddlers and preschoolers exhibit behaviors or symptoms that exemplify ADHD as part of their normal

development. However, children with ADHD do not grow out of these behaviors and symptoms reach an abnormal degree as they grow up. In order to diagnose a child with ADHD, the symptoms have to be present before the age of seven, and the child must show evidence of at least six core symptoms impacting the child's ability in at least two settings (such as home and school). However, severe impairment in one setting might be sufficient for the purpose of diagnosis (Parens & Johnston, 2009). The DSM-IV-TR core criteria for ADHD are listed in Table 1.

Table 1. DSM-IV-TR Criteria for ADHD.

A. Either 1 or 2 1) Six (or more) of the following symptoms of inattention have persisted for at least six months to a degree that is maladaptive and inconsistent with developmental level: *Inattention* a) Often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities b) Often has difficulty sustaining attention in tasks or play activities c) Often does not seem to listen when spoken to directly d) Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions) e) Often has difficulty organizing tasks and activities f) Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework) g) Often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools) h) Is often easily distracted by extraneous stimuli i) Is often forgetful in daily activities 2) Six (or more) of the following symptoms of hyperactivity-impulsivity have persisted for at least six months to a degree that is maladaptive and inconsistent with developmental level: *Hyperactivity* a) Often fidgets with hands or feet or squirms in seat b) Often leaves seat in classroom or in other situations in which remaining seated is expected c) Often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness) d) Often has difficulty playing or engaging in leisure activities quietly e) Is often "on the go" or often acts as if "driven by a motor") Often talks excessively *Impulsivity* g) Often blurts out answers before questions have been completed h) Often has difficulty awaiting turn i) Often interrupts or intrudes on others (e.g., butts into conversations or games)
B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before seven years of age.
C. Some impairment from the symptoms is present in two or more settings (e.g., at school, work, or home).
D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.
E. The symptoms do not occur exclusively during the course of a pervasive developmental disorder, schizophrenia, or other psychotic disorder and are not better accounted for by another mental disorder (e.g., mood disorder, anxiety disorder, dissociative disorder, or personality disorder).

Source: APA, 2000, p.92–93

The age of onset for ADHD is before the age of seven (APA, 2000; Kessler et al., 2005), and the condition continues into adulthood for the majority of boys and around one third of girls (Kessler et al., 2005). The presentation of ADHD symptoms changes from childhood to adolescence and into adulthood (Armstrong & Nettleton, 2004; Harpin, 2005; Woodard, 2006). Studies indicated that younger children with ADHD experienced behavioral disturbances like "excessive motor restlessness" and "poor social skills," and when they reach school age, academic problems become more apparent. On the other hand, adolescents express more aggressive disturbances such as "delinquency," "unsafe driving practices," and "increasing risk of substance abuse." In adults, problems with occupational failure and relationship difficulties may emerge and become more sophisticated in their complexity, adding to and compounding the other problems of having ADHD into maturity (see Table 2). It is important to note that the symptom presentation in individuals with ADHD varies depending on the type of ADHD, the presence of comorbid conditions, and environmental factors (Armstrong & Nettleton, 2004; Barkley, 2006).

Table 2. Attention Deficit Hyperactivity Disorder Symptoms Across the Lifespan.

Developmental Stage	Symptoms
Preschool	Executive motor activity or mobility, low frustration tolerance, impulsivity, inability to sustain attention, distractibility, poorly organized behavior, aggressiveness, noncompliance, inappropriate or demanding behaviors, negative social behavior, less adaptive behavior.
School age	Symptoms similar to those in preschool-aged children, with the emergence of academic difficulties, rejection by peers, oppositional behavior, lying, stealing, poor self-esteem, poor sleep patterns.
Adolescence	Inattention, impulsiveness, inner restlessness, continued academic difficulties, problems with authority, increased risky behavior (e.g., smoking, substance abuse, early sexual activity, driving accidents/traffic violations), excessively aggressive and antisocial behavior, overall feelings of worthlessness.
Adulthood	Exacerbation of underlying psychiatric conditions, frequent job changes and job losses, multiple marriages, problems with the law, substance abuse.

Source: Vierhile, Robb, Ryan-Krause, 2009. P.s7

Etiology

Recent studies reveal that ADHD is a complex disorder with genetic and environmental risk factors contributing to its onset (Brophy, Hawi, Kirley, Fitzgerald, & Gill, 2002; Brown, 2008; Faraone et al., 2005; Khan & Faraone, 2006; Kirley et al., 2002;

Kustanovich et al., 2003; Mick & Faraone, 2008; Ogdie et al., 2004; Brookes et al., 2006; Thapar, O'Donovan, & Owen, 2005; Waldman & Gizer, 2006). Twenty independent twin studies reviewed by Faraone et al. (2005), indicated that the heritability rate was estimated to be 76%. No single gene has been identified as a primary cause for ADHD, rather it has been suggested that several genes contribute to ADHD symptoms (Faraone et al., 2005; Reiff & Tippins, 2004). Approximately seven genes have been documented thus far in the literature with statistically significant association with ADHD, specifically the dopamine 4 and 5 receptors, the dopamine transporter gene, the dopamine-hydroxylase gene, the serotonin transporter gene, the serotonin 1B receptor, and the synaptosomal-associated protein-25 gene (Faraone et al., 2005; Khan & Faraone, 2006).

Nongenetic neurobiological causes of ADHD have also been suggested (Nigg, 2006). These include perinatal stress and low birth weight (Mick, Biederman, Prince, Fischer, & Faraone, 2002), traumatic brain injury (Max et al., 2004), and maternal smoking during pregnancy (Mick, Biederman, Faraone, Sayer, & Kleinman, 2002). There is some evidence that morphological and structural changes in the frontal lobe area of the brain may contribute to ADHD behaviors. Patients who have sustained head trauma and frontal lobe damage exhibit deficits in executive function, self-regulation, and self-monitoring, which are hallmarks of ADHD (Barkley & Murphy, 2006; Starkstein, Jorge, Mizrahi, & Robinson, 2006). Severe early emotional deprivation was reported by researchers as a possible nongenetic neurobiological cause of ADHD (Kreppner, O'Connor, & Rutter, 2001; Stevens et al., 2008). Early deprivation must be severe, the type that occurs in institutional rearing or child maltreatment. There is no evidence that ordinary variations in child-rearing practices contribute to the etiology of ADHD.

Several child, family, and environmental risk factors (e.g., low SES, living in economically stressed neighborhoods, poor family functioning) that play important roles in the severity of ADHD symptoms have been reported in the literature (APA, 2004). While ADHD has been looked at as an “environmentally dependent disorder,” because

environmental demands and expectations may decrease or increase the severity of symptoms, the literature has failed to provide evidence that ADHD is caused by poor parenting practices, family stresses, or diet (Barkley, 2006). However, those factors may increase the severity of ADHD symptoms. Moreover, the severity of ADHD symptoms is related to family SES. For example, children from families with lower SES have higher severity of ADHD symptoms (Barkley, 2006). In a study conducted by Boyle and Lipman (2002), they found that low SES was associated with higher rates of ADHD symptoms. The same results were reported in three studies conducted in the Arab world (Al Hamed, Taha, Sabra, & Bella, 2008; Attia, Tayel, Mounier, Ahmed, & Abo-Rass, 2000; Bener, Al Qahtani, Teebi, & Bessisso, 2008) ADHD is a complex disorder, and factors that contribute to its etiology are still under investigation. Over the years, a variety of hypotheses have emerged related to the causes of ADHD, such as claims that food additives, lead toxins, sugar, yeast, or poor child rearing methods lead to ADHD. However, these beliefs have not been supported by convincing evidence (Barkley, 2006). Accordingly, future research should include uncovering more information about the etiology of ADHD.

Prevalence and Epidemiology

The estimates of the prevalence of ADHD worldwide vary, depending on the study methodology, diagnostic criteria, populations studied, sample size, cultural perceptions, informants, and instruments used (Cantwell, 1996; Karam et al., 2009; Faraone et al., 2003; Froehlich et al., 2007; Goldman, Genel, Bezman, & Slanetz, 1998; Polanczyk, de Lima, Horta, Biederman, & Rohde, 2007; Rohde et al., 2005). Among school-aged children, the prevalence estimates ranged from 1.5% to 19.9 %, with a pooled prevalence rate of 5.23% (Barbaresi et al., 2002; Baumgaertel, Wolraich, & Dietrich, 1995; Breton et al., 1999; Cuffe, Moore, & McKeown, 2005; Gadow, Sprafkin, & Nolan, 2001; Polanczyk et al., 2007; Polanczyk & Jensen, 2008).

One of the hypotheses behind the broad range of ADHD prevalence is the significant changes in terminology and definitional indicators of ADHD over time (Cuffe et al., 2005; Polanczyk et al., 2007; Polanczyk & Jensen, 2008). The present Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV-TR and International Classification of Diseases (ICD)-10 criteria for the diagnosis of ADHD provide extremely similar lists of symptoms, but recommend diverse ways of determining a diagnosis. For instance, the required criteria for the diagnosis of ADHD using ICD-10 is the evidence of a minimum number of symptoms in all three dimensions (inattention, hyperactivity, and impulsivity). Also, the ICD-10 requires that the symptoms must be identified within each of two or more settings. On the other hand, DSM-IV requires a minimum of six symptoms in one or two dimensions (inattention and hyperactivity–impulsivity), and does not require the presence of full symptoms and impairment in each setting to make the diagnosis (APA, 2000).Therefore, the prevalence of ADHD is higher using DSM classifications than those of ICD(Cuffe et al., 2005; Polanczyk & Jensen, 2008).

Many studies have been implemented in different countries to estimate the prevalence of ADHD among school age children. It is worth mentioning that the reported prevalence rates are hard to compare due to the factors listed above; however, the findings of these studies support the fact that ADHD does exist in different countries and across cultures. In a cross-sectional study of a U.S. population of 8–15- year-olds, the results indicated that 8.7% of the sample met the DSM-IV-TR diagnostic criteria for the diagnosis of ADHD (Froehlich et al., 2007). In the same study, the prevalence rate of ADHD among girls was 5.4% and for boys 11.8%. In India, the results from a study conducted by Bhatia et al. (1991) indicate that the prevalence rate in children ranged from 29.2% for those in the 11–12 age group to 27.7% for those children between the ages of 9–10. The researchers in this study used DSM-III criteria for ADHD symptoms. The sample consisted of 1000 children between the ages of 3–12 years old. China

reported high prevalence rates using the DSM-III criteria. Leung et al. (Bhatia, Nigam, Bohra, & Malik, 1991; Leung et al., 1996) conducted a study in 1996 using DSM-III criteria for 3069 school-aged children, and found that the prevalence rate varied between 6.1% and 8.9%. In Russia and Britain, the prevalence rates were reported as 1.3% and 1.4%, respectively (Ford, Goodman, & Meltzer, 2003; Goodman, Slobodskaya, & Knyazev, 2005). The reported rates in the studies listed above cannot be compared to the prevalence rates in western countries due to the previously-stated factors and because of the absence of recent studies in these countries reporting the current prevalence rates of ADHD in children.

Different percentages have been reported in Arab countries where the prevalence rates vary between 0.5% and 14.9% (Karam et al., 2009). A systematic review of literature produced in Arab countries indicates that there is variability in the prevalence rates of ADHD across these studies, reflecting a completely diverse methodology among them. The same issue of diverse methodology is reported across studies from different countries across the world. For example, Rohde et al. (2005), in their systematic literature review found that across seven studies conducted in Brazil, the prevalence rates were variable, ranging from 1.5% to 18%, indicating a diversity in methodological use, including variable use of screening instruments, and interpretive disparity of the formal criteria found in the DSM-IV and/or the ICD-10.

Prevalence rates among males have been reported across literature studies as higher than those rates reported in females, with ratios ranging from 2:1 to 9:1(APA, 2000; Ramtekkar, Reiersen, Todorov, & Todd, 2010; Rucklidge, 2010). One commonly accepted explanation for the observed difference is that, in general, males are more likely to exhibit aggressive and antisocial behavior compared to females (Barkley, 2006). In a meta-analysis study conducted in 2002 by Gershon, lower rates of hyperactivity, impulsivity, and inattention symptoms were reported in girls compared to boys. Moreover, girls across the reviewed studies had lower levels of “aggression” and

"delinquency," but interestingly, intellectual impairment was greater in girls compared to boys. Girls with ADHD reported more internalizing problems such as depression and anxiety than did boys with ADHD (Gershon, 2002).

Parental Perception of Childhood ADHD

The perception of ADHD varies across cultures (Bussing, Schoenberg, Rogers, Zima, & Angus, 1998; Livingston, 1999; Parens & Johnston, 2009; Polanczyk & Jensen, 2008; Rohde et al., 2005). How parents understand the symptoms of ADHD, how they ascribed meaning to the signs and symptoms of ADHD, and how they respond and manage their children's behaviors is highly associated with the parents' cultural background (Oh & Kendall, 2009;Livingston, 1999; Reid, 1995; Rohde et al., 2005; Karam et al., 2009; Faraone, Sergeant, Gillberg, & Biederman, 2003).

In the studies attempting to investigate parental perception of the problematic behaviors associated with ADHD, researchers tried to emphasize how the parents of children with ADHD explain this disorder. For example, in a study conducted by Brook and Boaz (2005), they interviewed 66 parents of adolescents who were diagnosed with ADHD; the results indicated that 71% of the parents felt judged by family members, teachers, and the general community with respect to their ability to discipline their children and teach them appropriate behavior. The same results were reported among African American populations in the qualitative study conducted in 2007 by Olaniyan and colleagues, who explored parents' perceptions of childhood ADHD. In their study, they implemented five focus groups comprised of African American parents. One of the reported results was that the majority of the participants attributed the behaviors to poor parenting and inappropriate disciplinary practices.

In a 2005 study, Perry and colleagues explored how Latino parents managed their children's ADHD within the sociocultural context of their everyday lives. The participants emphasized that in their culture, children who misbehave and have bad

behaviors are negatively stigmatized. Further, parents stated that older generation family members and friends viewed the problematic behaviors associated with ADHD as the result of parenting problems rather than as behavioral problems.

Despite the dearth of studies in the matter of parent perception of ADHD, the available literature supports ADHD as a behavioral problem that should be addressed from multiple perspectives beyond that of the individual, and should include such factors as culture, family, and environment (APA, 2000; Barkley, 2006; Kendall, Leo, Perrin, & Hatton, 2005b; Livingston, 1999). Moreover, understanding the cultural foundations shaping the perception of ADHD is important because there are cultural differences in the demands of the environment in the homes, schools, and communities of people from different ethnic and cultural groups (Khamis, 2006; Livingston, 1999). Thus, it is recommended that ADHD be re-examined contextually, and greater consideration given to the role of culture and its impact on the assessment, diagnosis, and treatment of ADHD (Khamis, 2006).

Comorbidities

ADHD is a disorder that co-exists with other conditions, and such comorbidities increase with age among individuals having ADHD (Biederman & Faraone, 2006; Harpin, 2005; Woodard et al., 2006). Comorbidities contribute to the difficulty in diagnosing ADHD in adolescents and adults. According to the literature, as many as 80% of school-age children with ADHD also have at least one co-existing condition, with an average of 1.4 additional disorders (Wilens et al., 2002). Among these co-existing conditions are disruptive behaviors including oppositional (OD) and conduct disorders (CD), anxiety disorders, depression, low self-esteem, learning disabilities, language disorders, and substance abuse (APA, 2000; Barkley, 2006; Brown, 2000; Cuffe, McCullough, & Pumariega, 1994; Ford et al., 2000; Kessler et al., 2006; Rommelse et al., 2009; Weinstein et al., 2000; Weinstein, Staffelbach, & Biaggio, 2000).

Wilens et al. (2002) studied a sample of preschoolers and school-age children with ADHD, and found that 33% of the school-age children and 28% of the preschool children exhibited symptoms of two or more anxiety disorders, such as phobias, posttraumatic stress disorder (PTSD), and obsessive-compulsive disorder (OCD). Moreover, 33–39% of the sample studied in the large multimodal treatment study of ADHD reported evidence of having anxiety disorders along with ADHD (March et al., 2000; Newcorn et al., 2001). In their on-going longitudinal study of 976 children between the ages of one and ten years, Peterson et al. (2001) found that there was a consistent relationship between ADHD and depression across four follow-up periods from childhood to young adulthood. In this study, the researchers followed the participants after the initial interview, and again at 8, 10 and 15 years of age.

Common comorbidities of ADHD are behaviors that are congruent with oppositional and defiant behaviors, conduct problems, aggression, and antisocial behaviors (Al-Sharbati, Al-Adawi, Ganguly, Al-Lawatiya, & Al-Mshefri, 2008; Alobaidi & Ali, 2009; APA, 2000; Barkley, 2006; Biederman et al., 2009; Wilens et al., 2002). These behaviors are displayed as stubbornness, refusals to obey those in authority, acts of defiance, and expressions of verbal hostility toward others. Studies suggest that an average of 55% of children and adolescents with ADHD meet full diagnostic criteria for OD or CD (Angold, Costello, & Erkanli, 1999; Peterson, Pine, Cohen, & Brook, 2001; Wilens et al., 2002), which adds to the diagnostic complexity of ADHD.

Disease Impairment/Burden

As a result of associated emotional and behavioral problems, ADHD may interfere with nearly every aspect of a child's life. ADHD impacts family and sibling relationships, peer relationships, and academic performance (APA, 2000; Barkley, 2006; Kendall, Leo, Perrin, & Hatton, 2005b). Children exhibit difficulties with planning, staying on task, task completion, and may exhibit social behaviors that lead to peer

dislike or rejection (Hurt, Hoza, & Pelham, 2007; Mrug, Hoza, Pelham, Gnagy, & Greiner, 2007).

In terms of school performance, children with ADHD often have problems with school academics and are described as underperforming when compared with their classmates who do not have ADHD (Abdeldayem & Selim, 2005; Al-Sharbati, Al-Adawi, Ganguly, Al-Lawatiya, & Al-Mshefri, 2008; Al-Sharbati, Al-Hussaini, & Antony, 2003; Al-Sharbati, Zaidan, Dorvlo, & Al-Adawi, 2010; APA, 2000; Barkley, 2006; Bener, Al Qahtani, Teebi, & Bessisso, 2008; Kendall, Leo, Perrin, & Hatton, 2005b). As a result of the associated problems in children with ADHD, "School underachievement and misbehavior are the most frequent characteristics that lead to the assessment, diagnosis, and treatment of ADHD" (Bain, 1991, p.135). Furthermore, children with ADHD are often fidgety, have difficulty staying seated, behave as if being driven by a motor, blurt out answers without waiting to be called on, interrupt others, and experience difficulty in taking turns. In addition, ADHD affects school performance because affected children have difficulties with paying attention to details given in directions and staying focused on assigned tasks. Often these children lose important items and are disorganized. They make careless mistakes and avoid tasks that require sustained attention (APA, 2000; Barkley, 2006; Sullivan, 2008).

Moreover, having a child with ADHD adds tremendous stress to family functioning, and many studies reveal that ADHD negatively impacts parent-child and parent-parent relationships, and is associated with higher rates of marital conflict, divorce, and economic strains (Gerdes & Hoza, 2006; Hoza et al., 2000; Johnston, Murray, Hinshaw, Pelham, & Hoza, 2002; Kendall, Leo, Perrin, & Hatton, 2005a; Seipp & Johnston, 2005; Sukhodolsky et al., 2005). Unfortunately, maladaptive and counterproductive parenting strategies may be developed in attempts to deal with these problems (Barkley, 2006).

In many families, relationships between mothers in particular and their ADHD-affected children appear to be targets for the stress associated with the disorder. Several studies found more depression in mothers of children with ADHD compared to non-ADHD controls (Johnston et al., 2002; Gerdes et al., 2007). Moreover, Hoza and Owens et al., (2000) stated that mothers have lower self-esteem and lower perceptions of self-efficacy in parenting skills compared to fathers because they shoulder more of the childcare than fathers. Having a child with ADHD does have an impact on the mental and emotional health of parents, who often feel mentally depleted, desperate, depressed, and in need of guidance and education about the disease and how to deal with their children.

ADHD has major life-long economic effects for individuals, families, and communities (Biederman & Faraone, 2006; Pelham, Foster, & Robb, 2007; Vierhile, Robb, & Ryan-Krause, 2009). It has been reported that the societal cost of ADHD in children and adolescents is $42.5 billion annually (Pelham et al., 2007). Moreover, the annual medical costs are higher for children and adults with ADHD compared to those who do not have ADHD (approximately $1500 higher for children; for adults, about $3000) (Matza, Paramore, & Prasad, 2005). The total loss of workforce productivity associated with the presence of ADHD was estimated to be between $67 billion and $116 billion (Biederman & Faraone, 2006), resulting in decreased household incomes for individuals and families with ADHD.

Assessment of ADHD

The literature emphasizes the importance of an early and accurate diagnosis for ADHD to provide appropriate interventions. The diagnosis of ADHD has been complicated by several barriers. For instance, the high rate of psychiatric comorbidities in children with ADHD may contribute to the under- or over-diagnosis of ADHD (Vierhile et al., 2009). Diagnostic difficulties often result when clinicians have limited recognition of children at risk of ADHD, or who cannot differentiate between ADHD symptoms and

comorbid conditions. Patients with ADHD should be cautiously evaluated to rule out any co-existing conditions and carefully examined to detect the presence of ADHD symptoms.

Another reported barrier is that in some situations, parents are not able to recognize that a child might have behavioral problems and therefore may not seek help from health care providers (Sayal, Goodman, & Ford, 2006). Moreover, previous research also suggests that parents are uncertain as to whether and where to seek treatment (Bussing, Gary, Mills, & Wilson Garvan, 2003; Kendall, Leo, Perrin, & Hatton, 2005b).

Several key steps must be considered in the screening, evaluation, and diagnostic process for children and adolescents with suspected ADHD. In their guidelines for evaluation, the American Academy of Child and Adolescent Psychiatry (AACAP) and the American Academy of Pediatrics (AAP) focus on the importance of considering the screening process for ADHD as part of any well-child visit (Pliszka, Bernet, & Bukstein, 2007; Vierhile et al., 2009). Clinicians should ask explicit questions about any presence of the main symptoms of ADHD (inattention, impulsivity, and hyperactivity), and, together with families, decide if such symptoms are interfering in children's lives (Pliszka et al., 2007). Clinicians can then refer affected children and their families to appropriate resources.

The evaluation process for children and adolescents with probable symptoms of ADHD should include assessment for inattention, impulsivity, distractibility, and hyperactivity at home and in school settings, along with environmental factors and the SES of the family (Langberg, Froehlich, Loren, Martin, & Epstein, 2008; Pliszka et al., 2007). One of the major components of this fundamental process is the patient's history. Detailed interviews related to ADHD symptoms with the child and the parents should be included throughout the evaluation process, and should address the duration, frequency, severity, and age of onset of each ADHD symptom (Barkley, 2006; Vierhile et al., 2009).

In addition, a family history of mental/behavioral problems should be sought during the interview because of the significant genetic components in the etiology of ADHD (Faraone et al., 2005; Pliszka et al., 2007). Since academic performance, family functioning, peer relationships, and self-esteem are reported in the literature to be affected by ADHD, assessment of these areas should also be included in the evaluation process. The child's medical history, including an evaluation of hearing and vision, should be considered in the assessment process (Barkley, 2006). Also, clinicians should seek feedback about symptoms from the child's school and especially teachers, since teachers are the crucial source of information about school behaviors and performance (Langberg et al., 2008; Nass, 2005; Pliszka et al., 2007).

Standardized behavior rating scales with well-established norms for children can be completed by parents and teachers and are valuable in obtaining more specific information about a child's behavior. See Table 3 for a summary of some screening tools that have been used in primary health care settings (AAP, 2008; APA, 2000; Langberg et al., 2008; Pliszka et al., 2007). However, clinicians should pay close attention to information provided by parents and teachers and be aware of the subjective nature of such observations and their interpretations. For instance, parents' responses might be influenced by several factors such as attitudes and beliefs about ADHD (stigma), social backgrounds, observational skills, and personal agendas (Langberg et al., 2008; Nass, 2005). Also, information provided by teachers should be considered in terms of how long and well the teacher has known the student (Nass, 2005). Therefore, clinicians should validate parents' and teachers' input by asking specific questions and doing comprehensive assessments of patients.

Table 3. Summary of Selected ADHD Diagnostic Screening Tools Used in Primary Care Setting.

Screening Tool	Age Range	Description	Citation
Connors Rating Scale Revised (CRS-R)	3–17 years	• Developed to assess for wide variety of common behavior problems including ADHD. • Based on DSM-IV criteria. • The revised scale updates age and sex normative data factor structure. • There are short and long, parent, teacher, and self-report versions. • It has a large normative base.	(Conners, Sitarenios, Parker, & Epstein, 1998)
Brown Attention Deficit Disorder Scale (BADDS) for children and adolescents	• 3–12 years, parent and teacher report • 8–12 years, self-report. • 12–18 years, self-report.	• BADDS measures executive functioning associated with ADHD and developmental impairments. • Based on DSM-IV criteria. • The scale should be administered in an interview format. • It has separate rating scales for different age groups. • Has a strong psychometric measure. • The only scale that accounts for inattentive behavior as a function of age.	(Brown & Whiteside, 2003)
Vanderbilt ADHD Rating Scale	6–12 years, parent and teacher forms.	• New scale, based on DSM-IV criteria. • Both parent and teacher forms. • Assesses for comorbidities and school functioning. • Has a strong psychometric measure. • Is not a self-report scale.	(Wolraich, 2003)
Swanson, Nolan, and Pelham IV (SNAP)	5–11 years, parent and teacher rating scales.	• Based on DSM-IV criteria. • Same scale can be used for both parents and teachers. • Measures comorbidities. • Published psychometric properties are lacking and normative data are sparse.	(Bussing, Fernandez, & Harwood, 2008)

In addition to the interviews conducted during the screening process, health care providers should perform psychological and neuropsychological testing, especially if they notice any abnormalities in cognitive abilities or lower than expected achievement levels in language and mathematics skills, which may be suggestive of the presence of learning disorders (Pliszka et al., 2007). Such tests are not widely used in the screening and diagnosis of ADHD (Nass, 2005; Pliszka et al., 2007).

In conclusion, the screening, evaluation, and diagnostic process for ADHD in children is complicated, and it should be thorough enough to capture the symptoms of ADHD but yet differentiate it from other comorbid conditions. The evaluation process should be age appropriate and the information should be collected across environmental settings. The child, parents, and teachers should be interviewed to better capture the child's behaviors in multiple, naturalistic settings. The office environment of ADHD diagnostics is not the ideal setting in which to observe children, who often function better in structured environments and in one-to-one interactions. Moreover, the impact of ethnic, cultural, and socioeconomic differences has not been adequately studied to determine whether and which questions are perceived differently by various subgroups of interviewees. Therefore, there is a need for more studies focusing on the reliability and validity of the interviews and the behavioral scales across ethnic and cultural groups.

Treatment Modalities

ADHD is a complex disorder with no simple, single treatment. Finding an effective and appropriate treatment plan for a child with ADHD is critical. Froehlich and colleagues (2007) reported the results from the National Health and Nutrition Examination Survey (NHANES) 2001–2004, which indicated that only 47.9% of children and adolescents who meet the DSM-IV criteria for ADHD had received an actual diagnosis for this condition, and only 32% of those who received a diagnosis had received treatment (Froehlich et al., 2007).

Recent research emphasizes the importance of using a multimodal treatment plan for children with ADHD, which should involve the child, family, and school. The multimodal plan should include a treatment combination of medication, family education, counseling, and the use of behavioral management programs.

The multimodal treatment approach has been the focus for clinicians since the Multimodal Treatment Study of children with ADHD (MTA) (Barkley, 2006). The MTA was conducted by the National Institute of Mental Health (Jensen et al., 1999). The study sample consisted of 579 children with ADHD who were between the ages of 7 and 9.9 years, and were studied over a 14-month period. The findings of this study add important information to understanding the effects of medication and combined treatments of ADHD (Jensen et al., 2001; Swanson et al., 2002).

It is notable that medication is the first choice by many clinicians in the treatment of ADHD. Medications help to reduce the severity of symptoms and help the individual gain back control. However, these drugs are not a cure for ADHD; they just help minimize the negative impact of the ADHD symptoms. And because ADHD is a condition with symptomology that changes over time, there is a need to evaluate and perhaps adjust medication types and dosages periodically, and at some point to stop the medication and observe any changes in the child's status. In addition, combining medications with nonpharmacological interventions may be the most beneficial approach to treating children with ADHD symptoms.

Clinicians have been using a wide variety of medications to treat patients with ADHD (see Table 4). The popular groups of medications are: amphetamine salts; DEX methylphenidate; methylphenidate, the active ingredient in Ritalin (American Academic of Pediatrics, 2008); Lisdexamfetamine; and automoxitine (Swanson, 2003; Vierhile et al., 2009). According to the literature, stimulant medicines are the most used medicines in clinical use today to treat ADHD (AAP, 2008; Reiff & Tippins, 2004). In 2006, Faroanne and colleagues conducted a meta-analysis study of 29 clinical trials of medications used

to treat ADHD. The study results indicate that stimulant medications were reported across studies as a more effective treatment for ADHD than nonstimulant medications (Faraone, Biederman, Spencer, & Aleardi, 2006).

Although medication treatments are effective in treating ADHD, poor adherence is one of the reported problems with this treatment option (Gau et al., 2006). In their study, Gau and colleagues reported several reasons for this, including requirements of multiple daily doses, inconvenience, medication misuse, and feelings of stigmatization for using medication. Having stable families, high levels of efficacy in caregiving, satisfaction with medications, and being younger in age were reported as factors associated with better adherence outcomes (Charach, Gajaria, Skyba, & Chen, 2008; Faraone, Biederman, & Zimmerman, 2007; Swanson, 2003).

Children can experience many side effects (see Table 4) when taking these medications (Biederman, 2002; Connor, 2002; Glaze, 2004; Pagel, 2005; Vetter et al., 2008). Therefore, it is important to monitor children on a regular basis when taking these medications. The side effects that have been reported in the literature include decreased appetite, insomnia, anxiousness, irritability and proneness to crying, increased heart rate and blood pressure, and nervous tics. Drug abuse and dependency were reported in as many as 20% of patients with ADHD who have been treated with stimulant medications (Kroutil et al., 2006; Wilens, Gignac, Swezey, Monuteaux, & Biederman, 2006).

When treating children with ADHD, it is crucial to include the family unit and the school in the treatment process. Such involvement can be achieved by incorporating a range of psychosocial and educational treatments. It is extremely important when working with patients and their families to educate them about ADHD to help them better understand the disorder and its symptomology. Such knowledge will help them in the process of coping and managing the disorder's burden (APA, 2000; Barkley, 2006).

Cognitive-behavioral therapy involving the patient, family, and teacher as a unified team focused on improving behavior management abilities has been reported as

an effective process if combined with other treatment modalities (Pliszka et al., 2007; Safren et al., 2005; Smith, Barkley, & Shapiro, 2006). Such an approach involves behavior modification techniques that help parents, teachers, and children learn specific methods and skills to manage children's behavior. Parents and teachers can then use these learned skills to change the home and learning environments of the affected children by modeling these skills in their daily interactions, always with the aim of improvement in children's behaviors. In time, children with ADHD will learn to use these skills in their interactions with other children and their peers.

Behavioral-parent training (BPT) is an effective approach in treating children with ADHD (Chronis, Chacko, Fabiano, Wymbs, & Pelham, 2004). BPT provides parents with behavior modification techniques that are based on social learning principles (Barkley, 2006; Barkley et al., 2000; Chronis, Chacko, Fabiano, Wymbs, & Pelham, 2004). Parents are taught to identify and manipulate the antecedents and the consequences of child behavior, how to target and monitor the disturbed behaviors of their children, use praise as a reward for their children's "prosocial" behaviors, give positive attention, and identify different techniques to reduce the incidences of unwanted behaviors (e.g., tangible rewards, time outs, ignoring unwanted behaviors, and nonphysical discipline techniques). Several studies have found BPT programs a success, as BPT employs techniques to help families of children with ADHD as well as their children. BPT has a therapeutic impact on parents and reduces overall parenting stress (Pisterman et al., 1992).

Psychosocial treatment is important because children with ADHD suffer from multiple problems in their daily lives, such as lower than expected academic performance and poor relationships with siblings, peers, and parents. These problems are all very serious and must be addressed as part of the whole treatment package. Also, family members' ADHD induced problems (including parental depression, substance abuse, and marital problems) should be addressed in the treatment process to enhance the success of

the treatment plan (Chronis, Chacko, Fabiano, Wymbs, & Pelham, 2004; Chronis, Jones, & Raggi, 2006).

Table 4. Summary of Selected Medications Used in Treating ADHD.

Trade Name	Active Ingredient	Approved Age Use	Daily Dosage	Duration of Effect (in hours)	Possible Side Effects
Adderall	D- and L-amphetamines (mixed salts of amphetamine)	3+	2–3	4–6	Abdominal pain, decreased appetite, headache, insomnia, nervousness, dizziness
Adderall XR	D- and L-amphetamines pulse delivery system	6+	Once daily	10–12	Abdominal pain, loss of appetite, headache, insomnia, nervousness, emotional lability, dizziness, weight loss, xerostomia
Concerta	Methylphenidate	6+	Once daily	12	Abdominal pain, decreased appetite, headache, dizziness, nervousness
Dexadrine, Dextrostat	D-amphetamine	3–16	2–3	4–6	Tachycardia, tremors, insomnia, abdominal pain, xerostomia, decreased appetite, headache, dizziness, weight loss
Focalin XL	Dex-methylphenidate	6+	Once daily	8–12	Abdominal pain, decreased appetite, headache, insomnia, nervousness, dizziness, anxiety, xerostomia
Metedate CD, Ritalin LA	Methyphnidate	6-15	1–2	6–8	Abdominal pain, nausea, decreased appetite, headache, insomnia, nervousness, dizziness
Ritalin SR, Metedate ER, Methylin ER	Methylphenidate	6+	1–2	5–8	Abdominal pain, nausea, decreased appetite, headache, insomnia, nervousness
Ritalin, Methylin, Focalin, Metedate	Methylphenidate	6–15	2–3	3–6	Abdominal pain, nausea, decreased appetite, fever, headache, insomnia, nervousness, dizziness, tachycardia, weight loss
Strattera	Atmoxetine	6+	1–2	24	Headache, abdominal pain, appetite loss, vomiting, cough

Source: Adapted from Biederman, 2002; Gephart, 2003; Vierhile et al., 2009.

Summary

ADHD is a complex disorder that impacts affected individuals and their families in all aspects of family and social life, including the worlds of academics and work, self-esteem and self-perception issues, and social, emotional, and family interactional dynamics. It is important that ADHD be acknowledged and diagnosed as early as possible. The start of treatment and interventions are critical steps for both the children and their families. Moreover, it is important that the ADHD disorder is understood by families, teachers, and the affected children themselves, because that may enhance the treatment process and its outcomes as well. Thus, it is crucial both to acknowledge that the child with ADHD has a disorder as well as to understand the nature of the disorder.

Systematic Literature Review: ADHD Studies in the Arab World

There is considerable variation across cultures in the perception of ADHD (Bussing, Schoenberg, Rogers et al., 1998; Livingston, 1999; Parens & Johnston, 2009; Polanczyk & Jensen, 2008; Rohde et al., 2005). While some cultures believe that hyperactivity is a normal characteristic for a specific developmental stage, others consider it a behavioral problem that needs medical attention (Farah et al., 2009; Faraone et al., 2003; Karam et al., 2009; Livingston, 1999).

The Arab world consists of 18 countries with a combined population of 358 million people straddling North Africa and Western Asia. Despite the fact that children comprise around 45% of the total population, there is a lack of awareness among the majority of parents and teachers about the psychosocial development of this particular population (Okasha, 2003). The Arab world is an example where little attention is given to the behavioral problems of children; among these problems is ADHD. The number of studies performed in this part of the world about ADHD appears limited. Thus, there is a need to better understand ADHD in the Arab countries.

ADHD has been the focus of recent research studies in Arab countries. An initial review of the previous literature indicates few studies on ADHD from the Arab countries (Al Hamed, Taha, Sabra, & Bella, 2008; Al-Haggar, El-Baz, Youseff, Othman, & Ali, 2006; Al-Sharbati, Al-Adawi, Ganguly, Al-Lawatiya, & Al-Mshefri, 2008; Attia, Tayel, Mounier, Ahmed, & Abo-Rass, 2000; Elhamid, Howe, & Reading, 2009; Farah et al., 2009; Zaghlawan, Ostrosky, & Al-Khateeb, 2007). Therefore a systematic literature review will be undertaken in this section to capture all the research and related literature available on ADHD in Arab countries (see Table 5).

Table 5. Summary of ADHD Studies Implemented in Arab Countries

Country	Author/Year	Sample Size, Gender, & Age Range	Study Design	Study Aim	Instruments Used	Informants	Prevalence of ADHD	Findings	Study Limitations
Qatar	Bener, Qahtani, & Abdelaal, 2006	*n*=1,541; 51.7% males, 48.3% females; ages 6–12 years	Cross-sectional, descriptive	To identify attention deficit hyperactivity disorders among primary school children in Qatar	Standardized Arabic version of the Conners' Classroom Rating Scale for ADHD symptoms	Teachers	Overall prevalence 9.4%	• Boys have higher prevalence. • No significance if the child was raised by one or two parents. • Higher scores of ADHD; low school performance.	No parent or child involvement
Qatar	Bener et al., 2008	*n*= 1,869 students; 947 boys, 922 girls; ages 6–12 years	Cross-sectional	(Eapen, Al-Sabosy, Saeed, & Sabri, 2004) to find the prevalence of attention deficit hyperactivity (ADHD) symptoms in a sample of primary school children in Qatar	Standardized Arabic version of the Conners' Teacher Rating Scale for ADHD symptoms;an Arabic questionnaire for sociodemographic data was also used	Teachers; parents provided information about age and behaviors (obedience, noisiness, high activity, nervousness, crying for any reasons, creating problems) using an Arabic questionnaire	Overall prevalence 11.1%, (boys at 16.7% and girls 5.4%	• Children who had higher scores for ADHD symptoms had poorer school performance. • 96.2% of the children with ADHD were classified as disobedient, 60.6% noisy and hyperactive, 36.5% very cranky, 37.5% troublesome, and 37.9% nervous. • socio-economic condition, number of children, school performance and poor relationship between parents were the main contributors toADHD.	No parent or child involvement
Egypt	Attia et al., 2000	*n*=1,350; ages 8–13 years	Cross-sectional		Conners' Rating Scales	Parents and teachers	Overall prevalence 7.48%,boys at 11.67% and girls 3.58%	Significant correlation between socioeconomic status and ADHD diagnosis	

Table 5. Continued.

Egypt	Al-Haggar et al., 2006	*n*=356 ADHD cases registered in pediatric genetics unit of Mansoura University Children's Hospital; ages 7–12 .	Retrospective epidemiological study	To obtain an overview of ADHD in delta regions of Egypt;to evaluate the diagnostic accuracy of ADHD in those regions	DSM-IV, Conners' Developmental approach	Teachers, parents, and children	ADHD diagnosis was confirmed in 283 children a(73 additional children were excluded, as they either did not show up or had other diagnoses; 211 boys and 72 girls	• Most cases were hyperactive/impulsive. • Inattentive cases constituted 39.04%. • Family history reported in 49.8% of the sample.	Small sample size
Egypt	Elhamid, Howe, & Reading, 2009	*n*=1,186; ages 6–12 years	Cross-sectional survey	To provide epidemiologic information about child mental health problems in Egypt	The Strengths and Difficulties questionnaire (an Arabic version of the SDQ multi-informant algorithm)	Parents and teachers	Hyperactivity disorder 0.7% (0.3–1.4)		No child involvement
Iraq	(Al-Obaidi & Ali, 2009)	*n*=1,043 children; 529 (50.4%) males, 517 (49.6%) females; ages 6–10 years	Not mentioned	To quantify the rate of ADHD among schoolchildren in Baghdad	A scale based on DSM IV criterea devised by local experts	Parents and teachers	Teachers reported 110 (10.5%) children having ADHD symptoms, with a male:female ratio of 1.8:1. Parents reported 62 (5.9%) children, with a male:female ratio of 2.2:1.	• Teachers reported that 48% presented with a combined type, with 31% predominantly hyperactive-impulsive and 21% predominantly inattentive. • Parents reported a combined type was found in 29 children, with 17 predominantly hyperactive-impulsive, and 16 predominantly inattentive.	The design was not mentioned. A small sample size was used, lowering accurate representation.

Table 5. Continued.

Jordan	Zaghlawan et al., 2007	*n*= 60 third- and fourth-grade students at risk for ADHD; 33 boys and 27 girls; ages 8–9 years	A pretest-posttest control group design	To investigate the efficacy of using a response-cost strategy paired with the Differential Reinforcement of Incompatible Behavior (DRI) strategy in managing the inattentive behavior of 30 third- and fourth-grade students in Jordan	ADHD checklist developed by the researchers for the purpose of the study.	Trained teachers		Students who used the response-cost and DRI strategies reduced their inattentive behaviors significantly compared with students in the control group.	The sample participants had not been formally diagnosed with ADHD, but were instead so categorized using a checklist developed by the research team.
Oman	Al-Sharbati et al., 2003	*n*=212 patients who attended the Child Psychiatric Clinic at Sultan Qaboos University Hospital in Oman	Not mentioned	To find common behavioral problems in Omani youth, their comorbidities, treatments, and other variables	Conners' questionnaire, DSM-IV, Raven's Progressive Matrices Test (RPMT) for IQ	Parents and children	The majority (60%) of the patients exhibited hyperactivity.	• Aggression was reported in 49%. Stealing and lying were reported in 25% and 22%, respectively. • Approximately one-third suffered from headaches and abdominal pain. • The majority (62%) were of below-normal intelligence. • Anxiety affected 14%, depression 4%, and conduct disorders 8%.	The study design was not mentioned. The sample was not representative of the general population.

Table 5. Continued.

Oman	Al-Sharbati, Al-Lawatiya, Al-Adawi, & Martin, 2004	*n*=708 Omani schoolgirls ages 6–13 years	Cross-sectional	To examine the prevalence of ADHD in Omani schoolgirls in order to determine whether gender differences are shaped by socio-cultural or ecological factors	Conners' Teacher Rating Scale (CTRS), with a cut-off ≥15; Raven's Progressive Matrices Test (RPMT) for IQ; sociodemographic and academic data were collected through specific instruments (not mentioned)	Teachers and social workers	36 girls (5.1%) scored at least 15 on the CTRS and were considered hyperactive	• No significant difference was reported between the two groups in terms of birth order, total number of siblings, or parent educational levels. • The hyperactive group had significantly lower intelligence scores on the RPMT than did the control group.	No data were obtained from either the parents or clinical observations of the children.
Oman	Al-Sharbati, Al Adawi, Al-Hussaini, Al Lawati, & Martin, 2004	*n*=708 Omani schoolgirls ages 6–13 years	Cross-sectional	To assess the problem of ADHD among schoolgirls in the Sultanate of Oman	Conners' Teacher Rating Scale (CTRS) to measure ADHD symptoms; Raven's Progressive Matrices Test (RPMT) for IQ	Teachers and social workers assisted in providing child demographics and school achievement variables.	36 girls (5.1%) scored at least 15 on the CTRS and were considered hyperactive	• No significant difference was reported between the two groups in terms of birth order, total number of siblings, or parent educational levels. • The hyperactive group had significantly lower intelligence scores on the RPMT than did the control group.	No data were obtained from either the parents or clinical observations of the children.
Oman	Al-Sharbati, Al-Adawi, Ganguly, Al-Lawatiya, & Al-Mshefri, 2008	*n*=1,502 Omani schoolboys from eight randomly-selected schools	Cross-sectional	To quantify the prevalence of hyperactivity in schoolboys residing in the Arab/Islamic country of Oman	A shortened version of the Conners' Teacher Rating Scale; other ecologically valid assessment measures	Teachers and social workers assisted in providing child demographics and school achievement variables.	117 (7.8%) had a CTRS score > 15 and were considered hyperactive	• The prevalence of ADHD was strongly associated with conduct disorder, poor school performance, and behavioral disorders (such as aggression, stealing, and lying). • Sociodemographic variables such as a child's rank in school, number of siblings, and parental education were not significant.	No data was obtained from parents or clinical observations of the children. No operational definitions were given for some of the variables measured.

Table 5.Continued.

Oman	Al-Sharbati et al., 2010	*N*=1,406 schoolchildren who sought consultation at the Child and Adolescent Psychiatric Clinic.	retrospective-prospective	To screen for the presence of ADHD and to investigate psychosocial and educational histories relevant to the diagnosis of ADHD among children	A shortened version of the Conners' Teacher Rating Scale (CTRS); semi-structured interviews using the style and format of the Composite International Diagnostic Interview (CIDI)	Teachers accompanied family members to gather histories of any injuries and family information.	A total of 221 schoolchildren suffering from ADHD were identified according to DSM diagnosis criteria during a 12-month period.	• Males constituted 70% (*n*=154) of patients and females 30% (*n*=67). • The majority of cases (*n*=176, 79.6%) had comorbidities, learning disorders (103 cases), and failure to thrive in cognitive abilities (16 cases). Conduct disorders were present in eight cases. Twenty-nine cases had two comorbidities, and six had three or more. • 109 cases (49.3%) were not given any treatment. • Six cases were treated by a psychostimulant (methylphenidate), 32 (14.5%) by tricyclics, and 18 (8.1%) by other medications, such as antipsychotics.	
Palestine	Miller, el-Masri, Allodi, & Qouta, 1999	*n*=669 Palestinian children ages 6–12 and their families living in the Gaza Strip	Community-based, cross-sectional, and epidemiological surveys	To design and implement a community-based, cross-sectional epidemiological survey on school-age Palestinian children and their families living in the Gaza Strip	Ontario Child Health Scale (OCHS) and the Child Post-Traumatic Stress Reaction Index (CPTSRI); lifetime trauma exposure was assessed using the Health Reach Modified War Questionnaire	Parent, teacher, and/or youth reports	Prevalence rates for ADHD, based on parent or teacher reports, were 11.9% for boys and 8.5% for girls, with no significant difference between genders.	• Significant correlation was found between higher rates of lifetime trauma exposure by frequency and type, and higher prevalence rates of mental health problems. • There was a highly significant difference between genders in terms of ADHD prevalence rates.	Strength: the study emphasizes whether the rates were measured by parents, teachers, or children

Table 5.Continued.

Palestine	Khamis, 2006	*n*=1,000 children, 523 (52.3%) males and 477 (47.7%) females, ages 12–16	A stratified, random sample design	To investigate the prevalence of ADHD in school-age Palestinian children	Family data sheet. DSM-IV criteria. Child Psychological Maltreatment Scale (CPMS). Gender Inequities Scale (GIS). Family Ambiance Scale (FAS). Parental Support Scale (PSS). Harsh Discipline Scale (HDS). Economic pressure. Fulfillment of Child's Material Needs Scale (FCMNS). Behavior Disorders Inventory (BDI).	Teachers, parents, and children.	The prevalence of ADHD among school-age children is 34.5%.	• The prevalence ratio varied across the three ADHD subtypes. • ADHD had a significant effect on children's school performance. • The three subtypes of ADHD reported higher levels of parental psychological maltreatment, gender inequities, anxiety in proximal home environments, and lack of parental support.	The age of the children.

Table 5. Continued.

Saudi Arabia	Al-Haidar, 2003	*n*=417 patients under 19 years of age who were attending the clinic and were diagnosed with ADHD. Boys accounted for 77.4% and girls 22.6%.	Retrospective study	To review the experience of a child psychiatric clinic regarding comorbidity and treatment characteristics of children with ADHD	Wechsler Intelligence Scale, the Stanford-Binet Intelligence Scale, the Vinland Adaptive Behavioral Scale, and the DSM-IV for ADHD diagnosis. Psychotherapy offered included behavioral therapy and family counseling.	Informants were not specified.	ADHD was diagnosed in 25.5% of the patients.	• 28.3% of the children diagnosed with ADHD had coexistent expressive language disorders and 38.7% had coexistent mild mental retardation. • A psychostimulant (methylphenidate) was prescribed to 23.6% of the children, and antidepressants (primarily imipramine) were prescribed to 35.9%. • Behavioral therapy was the most commonly offered psychotherapy. Antidepressants were used more than psychostimulants. • Psychotropics had a more beneficial effect than psychotherapy.	It was unclear if an experiment was performed or if this was just a descriptive study.
Saudi Arabia Dammam	Al Hamed, Taha, Sabra, & Bella, 2008	*n*=1,287, ages 6–13	Cross-sectional	To determine the prevalence of ADHD among male primary school children	Modified Arabic version of the Attention Deficit Disorders Evaluation Scale (ADDES) school version, and parent questionnaires	Teachers and parents	Overall prevalence of combined ADHD was 16.4% (208), of hyperactivity-impulsivity 12.4% (157), and inattention disorders 16.3% (207).	• Parental levels of education and socioeconomic status was significant (low levels, high prevalence). • School boys whose mothers were housewives showed high prevalence rates for all three ADHD types as compared to children of working mothers.	No child involvement

Table 5. Continued.

Saudi Arabia	Hassan, Al-Haidar, Al-Alim, & Al-Hag, 2009	Guardians of 119 children	Not specified	To validate an Arabic version of an ADHD rating scale that would discriminate between children with ADHD who were otherwise normal versus those with non-ADHD diagnoses, including mental retardation	Standardized Arabic version of the ADHD Rating Scale	Parents of children who are either normal, have a diagnosis of ADHD, or a non-ADHD psychiatric disorder; clinicians	The ADHD rating scale (Arabic version) successfully differentiated between children having a normal ADHD diagnosis and those having non-ADHD psychiatric diagnoses	• The results indicate that ADHD is not restricted to a particular social strata, family type or size, or parental levels of education.	No children or teachers were included. Children's ages were not specified, except for the mean age. The rating scale was established according to DSM-III criteria. A small sample size was used.
UAE	Bu-Haroon, Eapen, & Bener, 1999	*n*=1,110 primary-school children, with 556 boys and 554 girls		To explore attention deficit–hyperactivity (ADH) symptoms in an Arab population	Conners' Teacher Rating Scale was used to examine ADH symptoms	Teachers	14.9%, based on teachers' ratings of children's behaviors	• Boys were more often reported as symptomatic than girls. Poor school performance was reported in those scoring above the cut-off limit. • No significance in age, socioeconomic status, nationality, parental education, quality of parental relationships, or polygamy. • children with deviant scores were more often raised by single parents	No involvement of parents and children; using just a screening instrument

Table 5. Continued.

UAE	V. Eapen et al., 2004	*n*=278 children visiting their primary care doctors in Al Ain, 50.7% boys and 137 49.3% girls, ages 6–18 years	Systematic psychiatric evaluation	To determine the prevalence and nature of child psychiatric morbidity in primary care settings in the United Arab Emirates	Schedule for Affective Disorders and Schizophrenia for School-Age Children—Epidemiological version (K-SADS-E), The DSM-IV, and semi-structured questionnaires targetting demographic data.	Children and parents	Obsessive-compulsive disorder was present in 11%, conduct disorder in 7%, and ADHD in 3% of those with a diagnosis.	• The most common diagnosis was anxiety disorder, followed by depression. • Statistically significant associations were found between DSM-IV cases and higher numbers of children from households where family relationship problems, physical illnesses, and family histories of psychiatric disorders were present. • No significant associations in age, nationality, socioeconomic status, parental education or occupation, scholastic performance or developmental delay in the child, or parental consanguinity were noted.	
Yemeni	Alyahri & Goodman, 2008	*n*=1,210, ages 7–10	Cross-sectional	To provide estimates of the prevalence of mental health disorders in children	Strengths and Difficulties Questionnaire, and the Development and Well-Being Assessment (DAWBA)	Parents and teachers	The prevalence of ADHD was 1.3%	• ADHD was much more common among males than females. • There were significant associations between ADHD and behavioral disorders.	No measures for ADHD and no child involvement

Method

A systematic literature review was undertaken to identify studies and articles that discuss ADHD in Arab countries. PubMed, CINAHL, PsycINFO, and Google scholars were searched using single and combined key terms. Keywords used were: attention deficit hyper activity disorder, hyperkinetic disorder, attention deficit disorder, ADHD, Arab countries, and behavior problems. The Arab countries included in the search were Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, United Arab Emirates (UAE), and Yemen. Studies using all methodological types were included. Fourteen total studies were identified that directly explored ADHD in Arab countries in some way. An additional six articles were found using reference citations from the initial search; these articles focused on childhood behavioral problems in general. Neither a time span nor any other limitation was used in the search due to the limited number of articles available on Arab countries and ADHD. Since the researcher's interest is ADHD in childhood, studies that discussed ADHD in adulthood were excluded, as well as those studies that discussed childhood behavioral problems but did not include any information about ADHD.

Results (by countries of the study)

In the state of Qatar, a cross-sectional study was conducted among 1,541 primary school children ages 6 to 12 to identify attention deficit hyperactivity disorders among primary school children (Bener, Qahtani, & Abdelaal, 2006). The sampling plan was stratified, with proportional allocation to include both public and private schools, aiming to ensure the sample accurately represented this category of the study. A questionnaire in Arabic was filled out by parents to collect sociodemographic data, including age, gender, nationality, parental level of education, and the parental occupation. The standardized Arabic version of the Conners' Teacher Rating Scale, completed by teachers, was used to screen for ADHD symptoms (cut-off ≥ 10) in students. The results revealed that 112 boys (14.1%) and 33 girls (4.4%) scored above the cut-off level for ADHD symptoms, with an overall prevalence of 9.4%. Additionally, a higher percentage of

children between six and nine years of age had ADHD symptoms. Also, the results showed a significant relationship between multiple marriages (polygamy) and scoring higher for ADHD symptoms. There was no significant difference in scores between children raised by single parents and those raised by both parents. Children who scored higher for ADHD symptoms had poorer school performance than those who scored lower.

Bener, Qahtani, Teebi, and Bessisso (2009) conducted a cross-sectional study in Qatar to examine the prevalence of ADHD symptoms in a sample of primary school children, investigating the behavior of children with and without ADHD symptoms in a highly consanguineous community (where there are first- and second-cousin marriages). The sample consisted of 2,500 primary school students between 6 and 12 years of age, and was randomly selected from primary schools run by the government. Teachers completed the standardized Arabic version of the Conners' Teacher Rating Scale (cut-off ≥15), and parents completed an Arabic questionnaire for sociodemographic variables such as age, gender, nationality, parental level of education, occupation, and observed behaviors in their children. The findings revealed that the prevalence rate of ADHD in boys was about 16.7% and among girls, 5.4%, with an overall prevalence of 11.1%. The difference between genders was statistically significant. A higher percentage was reported in children ages 6–9 (13.9%) compared to those aged 10–12 years (9.2%). Moderate and higher scores for ADHD symptoms were reported in 26.5% of the children with consanguineous parents. Poor academic performance was one of the reported characteristics in children who scored higher for ADHD. Among the behavioral patterns, disobedience was reported in 96.2% of the children; noisy and hyperactive behaviors in 60.6%; and attitudes described as very cranky in 36.5%, troublesome in 37.5%, and nervousness in 37.9%. These findings were significantly different compared to those children without ADHD. According to the study's findings, socio-economic conditions, number of siblings, school performance, and poor relationships between parents were reported as risk factors for ADHD. Moreover, according to the study's findings, consanguinity had no effect on children who scored above the cut-off levels.

Three studies were conducted in Egypt. One was a cross-sectional survey of 1,186 children 6–12 years of age in Minia, Egypt, with the goal of providing epidemiologic information about child mental health problems in Egypt (Elhamid, Howe, & Reading, 2009). The Arabic version of the extended Strength and Difficulty Questionnaire (SDQ) was filled out by the teachers and parents of each child to detect any mental health problems. In addition, a questionnaire was filled out by parents to collect sociodemographic data. The results revealed that the prevalence of hyperactivity disorder was 0.3% as reported by teachers and 1.4% as reported by parents, with an average percentage of 0.7%.

Al-Haggar et al. (2006) conducted a retrospective study to provide an overview of ADHD in the delta regions of Egypt by reviewing and re-analyzing cases registered in database files of the Pediatric Genetics Unit in Mansoura University Children's Hospital. The sample consisted of 356 ADHD cases between the ages of 7 and 12 years who had registered in that hospital over a 10-year period. Those cases were then re-evaluated using Conners' Rating Scales revised (validation was not reported) and the DSM-IV criteria for ADHD. Diagnosis of ADHD was confirmed in 283 cases (211 boys and 72 girls). Most cases were associated with hyperactivity/impulsivity and inattention (44.9%), but inattentive cases predominated, constituting 39.04% of those cases, while hyperactive/impulsive cases constituted 18.7%. A positive family history was reported in 49.8% of cases, mostly among inattentive and combined types of ADHD. Also, the researchers found that ADHD was more common among boys than girls in the three subtypes with a boy-to-girl ratio of 3:1.

In other research from Egypt, Attia, Tayel, Mounier, and Abo-Rass (2000) conducted a study among 1,350 primary school children in grades three through five. The Conners' Rating Scale was used and was completed by both teachers and parents (the cut-off was not specified). The prevalence of ADHD symptoms was reported as 11.67% for boys and 3.58% for girls, with an overall rate of 7.48%. Furthermore, the results revealed that the majority of those who scored high in ADHD symptoms (18.9%) belonged to families of low and very low socioeconomic classes.

In Iraq, a study was conducted to quantify the rates of ADHD among schoolchildren in Baghdad, the capital city (Al-Obaidi & Ali, 2009). The sample consisted of 1,043 children with an age range of six to ten years. Of this sample, 529 (50.4%) were males and 517 (49.6%) were females. The authors involved both parents and teachers in the assessment process. The design of the study was not mentioned, and information about the screening tool was not clearly identified; rather, the authors stated that the tool was devised by experts based on the DSM-IV criteria of ADHD. The study results indicate that according to the teachers' ratings, 110 (10.5%) children had symptoms of ADHD, with the ratio between males-to-females at 1.8:1. Also, combined types presented in 48% of those affected, with 31% having the predominantly hyperactive-impulsive type, and 21% presenting with the inattentive type. On the other hand, parents reported that 62 (5.9%) of the children had ADHD symptoms, with a male-to-female ratio of 2.2:1. A combined type was found among 29 children. The predominantly hyperactive-impulsive type was reported in 17 years and 16 years old. The study also revealed that there was a relationship between exposure to severe violence and instability and the prevalence of ADHD in Iraq. It is obvious that a discrepancy existed between teacher and parent ratings. In general, this study was the first and only one found to compare reportage from both teachers and parents of ADHD symptoms in their children.

In Jordan, a pretest-posttest control group design study was conducted to investigate the efficacy of using response cost paired with Differential Reinforcement of Incompatible Behavior (DRI) to manage the inattentive behavior of 30 students attending third and fourth grades (Zaghlawan et al., 2007). The sample was recruited from eight elementary schools (private and public) with resource rooms that were located in three school districts in Jordan's capital, Amman. Using a checklist developed by the research team and based on DSM-IV criteria to detect ADHD symptoms, the resource room teachers identified 154 students in the third and fourth grades who were at risk of having ADHD. The checklist was not validated; rather, it was piloted in a small sample (20 students) to test for reliability. Teachers who were trained for the purpose of the study filled out the checklist. After that, 60 students identified as having the

highest scores on the ADHD checklist were selected by the first author to participate in the study. The selected 60 students were then randomly assigned to either an experimental or a control group (30 students per group). Then the DRI was demonstrated to the experimental group, while the control group received the routine care. The findings of the study suggested that the DRI was effective in reducing inattentive behavior among students.

A recent retrospective-prospective study conducted in Oman screened for the presence of ADHD and investigated the psychosocial and educational history relevant for the diagnosis of ADHD among children (Al-Sharbati et al., 2010). A readily accessible sample of consecutive patients who came for child psychiatric consultations at the Sultan Qaboos University Hospital was used. The sample consisted of 1,406 schoolchildren who sought consultation at the Child and Adolescent Psychiatric Clinic. A two-phase screening process was undertaken in this study; in the first phase, the authors used the short version of Conners' Teacher Rating Scale to detect signs and symptoms of ADHD. During the second phase, children who scored high for ADHD symptoms were screened a second time using a semi-structured interview based on the style and format of the Composite International Diagnostic Interview (CIDI). The CIDI was developed to give a reliable and valid assessment of specific and general psychopathology, according to the definitions and criteria of ICD-10 and DSM-IV. After confirmation of the disease, the participants with ADHD were categorized according to the DSM-IV subtypes as inattentive, hyperactive-impulsive, and combined; second, each child was categorized based on comorbidities such as learning disorders, failure to thrive in cognitive abilities, and conduct disorders. A history of head injuries and information about consanguinity was obtained from accompanying family members.

The study results indicated that the majority (70%) of the ADHD cases were male. The ages ranged from 3–15 years. Combined signs of inattention and hyperactive-impulsive behavior were reported in 150 cases, while 45 cases showed signs of inattention only, and hyperactive-impulsive type were reported in 26 cases. Of the 150 cases 139 were enrolled in regular schools, 41 were preschoolers, 35 were not enrolled in school, and six were attending special-needs

schools. Seventy-two cases (33%) had sustained prior head injuries; in five of these cases, there was no evidence of ADHD before the accident. Among parents, 48% (*n*=106) were in consanguineous marriages (first- and second-cousin marriages). Comorbidity was reported in 79.6%. In terms of the treatment venues, 109 children were not given any treatment, six patients were treated by psychostimulants, and 18 by other medications such as antipsychotics (atypical or typical) or anticonvulsants.

Two cross-sectional studies were implemented in Oman, one among 708 schoolgirls aged 6–13 years (Al-Sharbati, Adawi, Al-Hussaini, Lawati, & Martin, 2004), the other targeting 1,502 schoolboys aged 6–14 years (Al-Sharbati, Al-Adawi, Ganguly, Al-Lawatiya, & Al-Mshefri, 2008). For both studies, teachers completed the Conners' Teachers Rating Scale (CTRS, cut-off ≥15) and provided their subjective views regarding aggression, stealing, and lying. Information about the children's demographic data and school performance was provided by school social workers to assess for psychosocial and academic correlates. The prevalence of ADHD symptoms among the schoolgirls was 5.1% and for schoolboys, 7.8. In addition to aggression, stealing and lying behaviors were found to be significantly correlated with high ADHD symptoms among Omani schoolboys and girls.

The hyperactive group in both studies had poor school achievement in both the first term of the current school year as well as failures during the previous year. The hyperactive group of Omani schoolgirls had significantly lower intelligence scores on the Ravens Progressive Matrices Test (RPMT) than did the control group. Paternal education level was lower for the hyperactive group of Omani schoolboys.

Al-Sharbati et al. (2003) conducted a study to obtain information about the most commonly treated mental health disorders among children and adolescents in Oman. They reported on the prevalence of behavioral problems and the comorbidities for these problems in patients seen in a single outpatient psychiatric facility. The sample consisted of 212 children who were seen at the child psychiatric clinic in Sultan Qaboos University Hospital and were followed for three months. Using the Conners' scale (cut-off ≥15) completed by the children's parents or

guardians, the patients were assessed for hyperactivity, treatment history, associated behavior problems, psychosomatic complaints, and consanguinity between parents. Intelligence was assessed clinically, while in borderline (undetermined cases where the existing signs and symptoms represented more than one disease) cases it was assessed by the RPMT. The results indicate that ADHD was common in all age groups, while anxiety was commonly seen from school age upwards. Also, 60% of the patients were hyperactive; among those the most common comorbidity was mental retardation (33%), borderline intelligence (18%), and 28% of the hyperactive cases had more than two disorders. Moreover, hyperactivity was a comorbid condition in all cases of conduct disorder (8%). In terms of intelligence, the study findings revealed that the majority (62%) were of below-normal intelligence. Other valued findings regarding risk factors include a family history of mental illnesses in 52% of the cases; moderate to severe head injuries were reported in 18% of the cases, and parental consanguinity in 52% of the patients.

A community-based, cross-sectional epidemiological survey of 669 school-age Palestinian children and their families living in the Gaza Strip was conducted by an international research team (Miller et al., 1999). A two-stage random sampling design was used to select 669 children from public and private schools. Several psychometric instruments were utilized for measuring mental health outcomes; these instruments included the Ontario Child Health Scale (OCHS) to measure conduct disorders, ADHD in all children, and the Child Post-Traumatic Stress Disorder Reaction Index for measuring post-traumatic stress disorder (PTSD) in children older than 12 years of age (those were referred to as the "youth" by the research team). These measures were completed by parents, teachers, and the youth themselves. ADHD symptoms were recognized if detected by at least one informant. The results indicate that the prevalence rates for ADHD in children 6–11years of age, as reported by parents or teachers, were 11.9% for boys and 8.5% for girls, with no significant difference between genders. On the other hand, the prevalence rates of ADHD among youth (ages 12 and above), based on parent and/or teacher and/or youth reports, were 16.7% for boys and 7.3% for girls, with a significant difference

between genders. A remarkable finding in this study was the comorbidity between ADHD and PTSD. The authors stated that "a significant correlation was found between higher rates of lifetime trauma exposure, by frequency and type, and higher prevalence rates of mental health problems."

In another study from Palestine, Khamis (2006) conducted a stratified random sample design study to investigate the prevalence of ADHD among 1,000 Palestinian school-age children (12–16 years old). The main focus of the study was to identify the variables that differentiate children with ADHD symptoms from children who did not. Such variables included children's characteristics, parents' sociodemographics, socioeconomic status (SES), family environments, and parental styles of influence. To measure for ADHD symptoms, the researcher used DSM-IV criteria, as well as the Behavior Disorders Inventory (it was constructed for the purpose of this study) to detect symptoms of conduct disorders, oppositional-defiant behaviors, anti-social behaviors, and unlikable personality characteristics. ADHD was detected in 34.5% of the children (most of whom were males). The resulting ratio varied across the three ADHD subtypes: 12% were of the combined type, 14.9% of the inattentive type, and 7.6% of the hyperactive-impulsive type. In terms of the ADHD burden, academic underachievement and anti-social behaviors were most likely to be present in children with ADHD; also, this same group was more likely to experience parental psychological maltreatment, gender inequities, anxiety in home environments, harsh disciplining, physical abuse, and lack of parental support as compared to those without ADHD.

Three studies were conducted in Saudi Arabia. The first one was a retrospective study conducted by Al-Haidar (2003) to investigate the comorbidity and treatment characteristics of children with ADHD, as well as sociodemographic data, degrees of mental retardation, and associated psychiatric disorders. The sample consisted of 416 patients (boys accounted for 77.4% and girls 22.6%) under 19 years of age who were attending the outpatient clinic at King Khaled University Hospital over a 10–year period. DSM-IV criteria were used to confirm any diagnoses. Of the cases, 25.5% were diagnosed with ADHD, either as the only diagnosis (12.7%), or in

combination with other psychiatric disorders (12.7%). Most of the patients had not attended school (63.2%), whereas some kind of education was reported in 30.2%, and 6.6% were attending special schools for children with mental disabilities. Fifty-three percent of the sample did not show any comorbid psychiatric disorders, while the most common associated disorders were expressive disorder (28.3%) and nocturnal enuresis (10.4%). Half of those diagnosed with ADHD did not show any degree of mental retardation, whereas 38.7% had mild, 12.3% had moderate, and 1.9% had severe levels of mental retardation. In terms of treatment, many psychotropic medications were prescribed for the 38.7% of those who were diagnosed with ADHD. While 8.5% received psychotherapy alone (behavioral therapy was the most commonly offered psychotherapy treatment), 52.8% received both medication along with psychotherapy as their form of treatment. The greatest improvement was reported in those who received medication, whereas those who received both medication and psychotherapy showed partial improvement, and not much improvement was shown by those who received psychotherapy alone.

The second study from Saudi Arabia was a cross-sectional study aimed at determining the prevalence of ADHD among male primary school children (Al Hamed, Taha, Sabra, & Bella, 2008). The sample was comprised of 1,287 male students aged 6–13 years from private and governmental schools. Two types of questionnaires were used to collect data; the modified Arabic Version of the Attention Deficit Hyperactivity Disorders Evaluation Scale (ADDES) school version, and a parental questionnaire to diagnose for the three subtypes of ADHD. The results revealed that the overall prevalence rate for the combined type of ADHD was 16.4%, hyperactivity-impulsivity 12.4%, and inattention type 16.3%. Schoolboys aged 9 to less than 11 years scored higher for the three types compared to other age groups. Those in the 11-–13-year-old age group had the lowest prevalence of all three types. In terms of socioeconomic status, the results revealed that lower SES was associated with higher prevalence rates of ADHD. Also, lower educational levels for both parents were significantly associated with the development of

ADHD. A high prevalence rate was reported among those whose mothers were housewives as compared to those whose mothers were working outside the home.

The third study was conducted to validate the Arabic version of the ADHD rating scale and determine its ability to discriminate between children with ADHD and those considered normal, as well as from those having other psychiatric diagnoses (Hassan et al., 2009). The study included 119 children, 3–13 years of age. The results revealed the ADHD rating scale successfully differentiated between children with a clinically proven ADHD diagnosis from both normal children and children with other psychiatric disorders, including mental retardation.

Bu-Haroon, Eapen, and Bener (1999) undertook a study in Shargah (UAE). The sample was comprised of 1,110 primary-school children attending governmental schools, excluding those with chronic physical illnesses and those with learning disabilities. The Conners' Teachers Rating Scale (cut-off ≥10) was used to examine for ADHD symptoms. The prevalence rate of ADHD symptoms among boys was 18.3% and among girls 11.4%, with an overall prevalence rate of 14.85%. Also, the results revealed that those who scored higher for ADHD symptoms were judged to have poorer school achievement.

In another study from the UAE, Eapen, Al-Sabosy, Saeed, and Sabri (2004) carried out a study to determine the prevalence of child psychiatric morbidity in primary care settings. The research team conducted a systematic psychiatric evaluation on a sample of 278 children aged 6–18 years when visiting their primary care physicians. The Affective Disorders and Schizophrenia for School-Age Children—Epidemiological version (K-SADS-E) was used to assess for the presence of psychiatric disorders. The K-SADS-E is a semi-structured diagnostic interview. During the interviews, the interviewers made a summary rating of each item on the scale based on the information provided by parents and their children. Then a best-estimate diagnosis was assigned by the principle investigator based on the DSM-IV classification. In this study, 120 patients (43%) received a DSM-IV disorder diagnosis (38% males and 62% females). Thirty-four percent of the cases had comorbid psychiatric conditions. The most common diagnoses, according to the study results, were anxiety disorders at 43% and depression at 20%. Obsessive-

compulsive disorder was reported in 11%, conduct disorder in 7%, and ADHD in 3%. The study results indicate that in general, several factors were highly associated with those who received a DSM-IV diagnosis, including being female, having higher numbers of children in households, relationship problems in families, physical illnesses, and family histories of psychiatric disorders.

Alyahri and Goodman (2008) undertook a cross-sectional study to provide estimates of the prevalence of child mental health disorders in Yemen. The sample consisted of 1,210 schoolchildren aged seven to ten years who were living either in the city or in rural areas. The assessment process in the study was comprised of two stages in the urban area, where everyone got the chance to participate in the initial screening phase, which included a lengthy diagnostic assessment process for those who screened positive. In rural areas, a one-phase survey was used in the assessment process, where one lengthy interview was conducted for each participant. The Strengths and Difficulties Questionnaire was used for screening purposes, and the Development and Well-Being Assessment was used to generate psychiatric diagnoses. The results indicate that the overall prevalence rate of any psychiatric disorder was 15.7%; thus, there was no significant difference between the urban and rural areas in terms of the prevalence of any DSM-IV diagnosis. Anxiety disorders were the most prevalent disorder among the sample, with a rate of 9.3%, followed by behavioral problems (7.1%) and ADHD (1.3%). A significant association was found between being a male and having a diagnosis with behavioral disorders and ADHD.

Discussion

The majority of the available studies from the Arab countries on ADHD focus on one aspect of ADHD: the prevalence rate. Other factors have been studied but with limited informational findings. Therefore, there is limited knowledge in terms of how to diagnose this disease; how to identify its signs and symptoms; the impact ADHD has on children, their families, and the community in general; risk factors; comorbidities; treatment regimens; and the prognosis of the disease itself. Furthermore, there is a shortage of available health and educational professionals trained to manage, identify, and deal with cases of ADHD. Also, there

is a shortage of valid, reliable, and culturally relevant Arabic psychiatric research instruments to be used in conjunction with the Arab population (Okasha, 2003).

Prevalence of ADHD in Arab Countries and Instruments Used

The majority of the studies were descriptive studies with little information mentioned about risk factors and disease burdens, except for two retrospective studies that focused on studying the comorbidity, treatment (Al-Haidar, 2003), and the accuracy of ADHD as a diagnosis (Al-Haggar et al., 2006). Moderately high prevalence rates of ADHD symptoms were reported in each of the Arab studies except for the study done by Elhamid, Howe, and Reading in 2009, where the prevalence rate for ADHD symptoms was 0.7%. An explanation for this seemingly low rate was that only one diagnosis per child was reported using the SDQ (Strength and Difficulties Questionnaire) instrument; thus, those who received a diagnosis of an emotional disorder or a conduct disorder (CD) might have had ADHD symptoms that were not included under the ADHD group, but rather were classified and thus hidden under CD or other emotional disorder diagnoses.

The overall prevalence rates varied widely between studies due to different factors including the nature of the population studied, instruments used, and informants. Whereas cultural factors were not elaborated on in any of the reviewed studies from Arab countries, Farah et al. (2009) substantiated that cultural factors are important reasons behind the variations in the reported prevalence rates of ADHD in the Arab world. The targeted populations varied across the reviewed studies between school samples (Al Hamed, Taha, Sabra, & Bella, 2008; Al-Sharbati et al., 2004; Al-Sharbati, Al-Adawi, Ganguly, Al-Lawatiya, & Al-Mshefri, 2008; Al-Sharbati, Al-Lawatiya, Al-Adawi, Martin, & Al-Hussaini, 2003; Al-Sharbati et al., 2010; Al-Obaidi & Ali, 2009; Attia et al., 2000; Bener, Qahtani, & Abdelaal, 2006; Bener et al., 2008; Bu-Haroon et al., 1999; Khamis, 2006; Miller et al., 1999), and special population samples including primary care samples (Eapen et al., 2004), clinical psychiatric samples (Al-Haggar et al., 2006;

Al-Haidar, 2003; Al-Sharbati et al., 2003; Alyahri & Goodman, 2008; Elhamid, Howe, & Reading, 2009), and trauma samples (Al-Obaidi & Ali, 2009; Miller et al., 1999).

In terms of the instruments used in these studies, the majority of the studies used the Conners' Teacher Rating Scale, which was completed by teachers only and lacked data from parents or the children themselves. Relying only on teachers' reportage is one of the weaknesses in these studies; teachers were limited to observing children in school environments, where children may be behaving differently than they otherwise would in their homes and other settings. Moreover, the CTRS does not capture all the various aspects of ADHD as a behavioral problem. Diagnosing a child with ADHD needs a comprehensive and thorough assessment for the child behaviorally, physically, and psychologically in different settings, including both school and home. Thus, the findings of these studies provide only preliminary indicators for ADHD diagnosis. These findings are also elaborated upon in the study done by Karam et al. (2009).

Only one study elaborated on the differences between prevalence rates reported by parents versus those reported by teachers (Al-Obaidi & Ali, 2009). Other studies (Elhamid, Howe, & Reading, 2009) included input from parents and teachers but they did not elaborate or explain the difference between parents' and teachers' reported rates of ADHD symptoms. While many of the studies showed that teachers and parents could report symptoms of ADHD from a checklist, it is not known if teachers and parents in the Arab nations recognized ADHD as a problem. This is why it was important to implement a qualitative study to seek such information.

The only experimental study was done by Zaghlawan et al. (2007), and this study had many limitations (e.g., small sample size, ADHD diagnostic checklist developed by the research team itself). While ADHD is not really recognized in Jordan as a disease and there are no professionals there to diagnose this disease efficiently and effectively, the determination of the existence of ADHD symptoms in the studied sample based on a researcher-devised checklist makes the study findings less reliable.

Given that school children were most often the targeted population samples for these studies and that those samples were tested only in school settings using the Conners' Teacher Rating Scale completed by teachers without parental input (except for providing required sociodemographic data), and that there was a distinct lack of clinical assessment for these children, the absence of accurate diagnosis of ADHD symptoms in these samples is a huge issue, and any available new information about this disease will directly impact progress in recognizing, addressing, treating, intervening, and helping those in need of help and support.

The fact that children in the community who do not attend school were excluded in these studies may reflect an inaccurate estimate of ADHD prevalence in the Arab world given that there are many children in different communities who do not attend school and instead work in different places (Farah et al., 2009). Furthermore, those children are at an increased risk of developing psychiatric disorders, mainly in the form of behavioral problems, due to the factors associated with having the status of being school drop-outs (Elhamid, Howe, & Reading, 2009).

Risk Factors

The risk factors investigated in the Arab studies were limited (see Table 6); this fact was also reported in the epidemiologic studies reviewed by Farah et al. (2009). Gender differences were reported in the results of 11 studies as a strong risk factor for ADHD, and this fact was confirmed in many international publications on ADHD. The prevalence rate of ADHD was higher in males than in females except for one study (Eapen et al., 2004), where being female was highly associated with ADHD symptoms. One explanation may be the small sample size used in this study and that the number of females in this study exceeded the number of males (Farah et al., 2009). Moreover, there are many reasons for greater vulnerability to ADHD in boys that have been reported in the literature. For example, the finding that adults tend to tolerate girls' hyperactive behaviors more often than they will that of boys (Gaub & Carlson, 1997). Also, intellectual impairment, inattention, and low levels of hyperactivity have been reported in girls with ADHD compared to boys with ADHD (Berry, Shaywitz, & Shaywitz, 1985).

The second reported risk factor was stress in the family environment, including bad relationships between parents and lack of parental support. Kamis (2006) emphasized the effects of the absence of parental support as a risk factor for ADHD, and included parental psychological maltreatment of children, gender inequities in the way parents deal with their children, harsh discipline, and physical abuse. Bener et al. (2008) found that bad relationships between parents were main contributor to ADHD. Bener et al. (2006) hypothesized that such poor inter-parental relationships could impact the way parents communicate and deal with life stressors and thus leave them less attentive to meeting the needs of their own children.

The significant correlation between low SES, parental education, and ADHD was reported in three studies (Al Hamed, Taha, Sabra, & Bella, 2008; Attia et al., 2000; Bener et al., 2008). It has been hypothesized that children from low socioeconomic statuses, whose parents have limited education or have low incomes, are not given the attention needed from their parents, leading to higher incidences of ADHD symptoms (Bener, Qahtani, & Abdelaal, 2006; Farah et al., 2009). Moreover, Alhamid et al. (2008) reported that boys of working mothers showed a lower prevalence of all three ADHD subtypes compared to those whose mothers were housewives, supporting the observation that having educated parents may decrease the risk of developing ADHD symptoms in children. Parents with higher levels of education have a better likelihood of knowing how to deal with children when anticipating unusual behaviors and, more importantly, especially with educated mothers, they are more likely to have a variety of important parenting skills enabling them to enhance the physical and psychological health of their children.

One of the important issues that is missing in the reviewed studies was that of a family history for previous mental illness. The family history of previous mental issues and/or behavioral problems was investigated in one study (Al-Haggar et al., 2006); in this study, a positive family history for previous mental health issues, mostly inattentive and combined types of ADHD, was reported in 49.8% of the sample. Two other studies investigated this risk factor for other psychopathologies, as those studies were focused on behavioral problems in general

and were not targeted at ADHD specifically (Al-Haggar et al., 2006; Eapen et al., 2004). Barkley (2006) reported that parents and relatives of children with ADHD show a higher prevalence of psychopathology compared to parents without children diagnosed with ADHD. More specifically, higher rates of ADHD, conduct disorder, substance abuse, and depression were repeatedly reported by parents and relatives of children with ADHD (Barkley, 2006). Given the negative ramifications of ADHD, there is a need to investigate these consequences in depth and to elaborate on the far-reaching destructive potential of ADHD in future Arab studies.

There was a lack in these studies about cultural perspectives toward ADHD among different countries and how cultural factors interfere with the identification of ADHD. Many studies from countries other than Arab have indicated that ADHD might be a product of cultural attitudes (Bussing, Schoenberg, & Perwien, 1998; Faraone et al., 2003). There is a need to address the Arab public perspective of ADHD; behaviors considered as abnormal in some cultures might be relegated as normal in others, where the assumption is that children will grow out of negative behaviors.

The interesting factor of consanguinity was studied in many of the reviewed articles. Consanguinity was reported to be significantly associated with the prevalence of ADHD across three studies (Bener, Al Qahtani, Teebi, & Bessisso, 2008; Al-Sharbati, Al Adawi, Al-Hussaini, Al Lawati, & Martin, 2003; Al-Sharbati, Zaidan, Dorvlo, & Al-Adawi, 2010). On the other hand, this factor was not significantly associated with ADHD according to the findings of Eapen and Ghubash (2004). Since this factor is an important issue in terms of the genetics of ADHD, more research in this area should enrich the data about ADHD risk factors in Arab countries.

Head injuries were reported in two studies as a risk factor associated with ADHD (Al-Sharbati, Al Adawi, Al-Hussaini, Al Lawati, & Martin, 2003; Al-Sharbati, Zaidan, Dorvlo, & Al-Adawi, 2010). These studies did not use clinical diagnostic criteria to identify children as having ADHD, so there was no clear association between head injuries and ADHD. Also, there are no theories supporting the evidence of this risk factor in the ADHD-related literature using clinically diagnosed children with ADHD.

Table 6. Reported Risk Factors in Arab Studies.

Risk Factors	Number of Studies	Citations
Being raised by a single parent	1	Bu-Haroon et al., 1999
Stress in family environments (bad relationships between mother and father, lack of parental support)	3	Bener et al., 2008; Eapen et al., 2004; Khamis, 2006
Number of children in the family	1	Eapen et al., 2004
SES	3	Al Hamed, Taha, Sabra, & Bella, 2008; Attia et al., 2000; Bener et al., 2008
Consanguinity	3	Bener et al., 2008; Al-Sharbati et al., 2003; Al-Sharbati et al., 2010
Parental levels of education/occupation	1	Al Hamed, Taha, Sabra, & Bella, 2008
Polygamy	1	Bener, Qahtani, & Abdelaal, 2006
Head injuries	2	Al-Sharbati et al., 2003; Al-Sharbati et al., 2010
Family histories of mental illness	3	Al-Haggar et al., 2006; Al-Sharbati et al., 2003; Eapen et al., 2004
Being male	10	Al-Haggar et al., 2006; Al-Sharbati et al., 2010; Al-Obaidi & Ali, 2009; Alyahri & Goodman, 2008; Attia et al., 2000; Bener, Qahtani, & Abdelaal, 2006; Bener et al., 2008; Bu-Haroon et al., 1999; Eapen et al., 2004; Miller et al., 1999
Physical illnesses	1	Eapen et al., 2004
Parental psychological maltreatment	1	Khamis, 2006
Gender inequities	1	Khamis, 2006
Harsh discipline	1	Khamis, 2006
Physical abuse	1	Khamis, 2006

Other risk factors were reported in the Khamis (2006) study, like parent psychological maltreatment, gender inequities, harsh discipline, and physical abuse, and again there was no clinical diagnosis for the ADHD symptoms in the studied sample. According to Barkley (2006), the evidence of the contribution of psychosocial factors to ADHD is weak. Many of the theories that investigate such correlations did not gain much support in the available literature; also, the

studies of these theories relied mainly on nonclinical diagnostic processes for ADHD (Barkley, 2006).

Comorbidities with ADHD (see Table 7)

The comorbidity between ADHD and other mental problems was reported in two studies (Al-Obaidi & Ali, 2009; Miller et al., 1999). In addition, the effects of wars, natural disasters, and maltreatment of children has been reported by many international studies (Adler, Kunz, Chua, Rotrosen, & Resnick, 2004; Cuffe et al., 1994; Ford et al., 2000; Rucklidge, Brown, Crawford, & Kaplan, 2006; Weinstein et al., 2000).

Furthermore, children with ADHD showed comorbidities with other psychiatric and behavioral problems, like conduct disorders, mental retardation, PTSD, oppositional-defiant disorders, expressive language disorders, learning disabilities, and mood and anxiety disorders (Al-Sharbati et al., 2004). These comorbidities have been confirmed in other studies (Barkley, 1998; Gillberg et al., 2004).

Table 7. Reported Comorbidities Across Studies in Arab Countries.

Comorbidity	Number of Studies	References
Post-Traumatic Stress Disorder (PTSD)	2	Al-Obaidi & Ali, 2009; Miller et al., 1999
Conduct disorder (CD)	2	Al-Sharbati, Al-Adawi, Ganguly, Al-Lawatiya, & Al-Mshefri, 2008; Al-Sharbati et al., 2003; Al-Sharbati et al., 2010
Mental retardation (MR)	2	Al-Haidar, 2003; Al-Sharbati et al., 2003
Learning disabilities	1	Al-Sharbati et al., 2010
Mood and anxiety disorders	1	Al-Sharbati et al., 2003
Low intelligence levels	2	Al-Sharbati et al., 2004; Al-Sharbati et al., 2003; Al-Sharbati et al., 2003
Language disorders	1	Al-Haidar, 2003

Disease Burden and Impairment

Based on the studies' results, poor school performance was reported in those who scored high in ADHD symptomology, and achievement was much lower than those who scored low for having symptoms of ADHD. In addition to aggression, also reported were negative behaviors such as lying and stealing. Low levels of intelligence were also reported in many findings, as well as such attributes as hyperactivity, crankiness, noisiness, troublesome attitudes, and nervousness. Again, the emphasis on the disease burden and impairment was under-researched in the Arab studies, and there is a need to investigate this matter using a more systematic and clinical process.

Assessment

The most commonly used instrument across the studies was the Conner's Teacher Rating Scale (CTRS); the teacher version was the main one used. The standardized Arabic version of the CTRS for ADHD was used in three studies. Two studies utilized the standardized Arabic version of the ADHD Rating Scale (Al Hamed, Taha, Sabra, & Bella, 2008). However, nothing was mentioned regarding the validity and the reliability of the instruments; rather, the researchers stated that their instruments had been previously validated by many studies. The rest of the studies used different kinds of instruments specifically selected for the purpose of each study.

In general, it is worth mentioning that instruments have to test what they are designed to test for, and since the majority of the instruments that measure ADHD have been developed and validated in western populations, these instruments need to be validated, standardized, and tested on Arab populations in order to use them meaningfully in such populations. The Arab culture is totally different from other cultures and therefore what might be considered abnormal by one culture might very well be considered normal in the Arab culture. What might be appropriate diagnostics and treatment for one population might not be relevant or appropriate for those within the Arab culture.

Another issue in assessment is that twelve studies relied on teacher perspectives alone to determine the presence of ADHD symptoms, and the cut-off point varied widely for symptomology, from scores of10 to 15, across studies using cut-off points to determine the presence of ADHD. The results of such studies therefore might not give clear facts about the prevalence of ADHD in the studied populations, since these studies did not include a clinical diagnosis for the presence of ADHD symptoms (Farah et al., 2009). However, the findings of these studies could become the basis for further investigation and research, and may be the trigger for heightened attention toward this problem.

Treatment

One study discussed a treatment instrument to manage inattentive behavior in school children; the limitation of this study was discussed previously in this section (Zaghlawan et al., 2007). Other studies addressed treatment regimens that did focus on different behavioral problems but not specifically for ADHD. On the other hand, in the Al-Hiadar study, they reported that psychostimulants (methylphenidate) was prescribed to 23.6% of the sample. Antidepressants, primarily Imipramine, were prescribed to 35.9% of the sample. In terms of the psychotherapy prescription, behavioral therapy was the most commonly offered one. Also, the authors stated that antidepressants were used more than psychostimulants, and that psychotropics were more effective in treating patients than was psychotherapy. The study conducted by Al-Sharbati et al. (2010) also reported the use of the psychostimulant methylphenidate, tricyclics, and other medications, including antipsychotics. They also stated in this study that 109 cases (49.3%) were not given any treatment. Unresolved issues remaining in reviewed studies include a lack of investigation into the side-effects of medications used to treat ADHD, as well as any in-depth investigation into the effectiveness and modalities of other treatments for possible use with children diagnosed with ADHD.

ADHD Impact on Affected Children and Their Families

There was a lack of information in the reviewed studies about the impact of ADHD on the affected children and their parents. Many findings in the literature report that having a child with ADHD puts a tremendous stress on family functioning; many studies reveal that ADHD negatively impacts parent-child and parent-parent relationships, is associated with higher rates of marital conflict and divorce, and is an additional stressor to householdeconomics (Gerdes & Hoza, 2006; Hoza et al., 2000; Johnston et al., 2002; Kendall, Leo, Perrin, & Hatton, 2005a; Seipp & Johnston, 2005; Sukhodolsky et al., 2005). In many families, relationships between mothers and their ADHD-affected children appear to be the target for the stressors associated with the disorder. For instance, maternal depression in these families is higher compared to other families, as stated in the studies done by Johnston et al. (2002) and Gerdes et al. (2007).

Conclusion

The numbers of studies investigating the facts about ADHD in Arab countries are few. Also, comparisons between existing studies are difficult to make due to different issues such as socio-demographic data, differences in health care systems, the small sample sizes used in many of the studies, the lack of representative samples across studies, and the different cultural perspectives about ADHD held internationally and how these cultural factors and attitudes interfere with the identification and treatment of ADHD. In addition, the number of studies that addressed actual treatment issues was rare, so it was difficult to group treatment modalities as they apply to the Arab population. Part of this problem can be attributed to the lack of trained mental health professionals who deal with ADHD cases. This, of course, adds an even greater burden to those families challenged with trying to successfully raise children who have ADHD.

In each Arab country there are specific groups of researchers interested in ADHD and those investigators are the ones who continue to study this issue and publish their findings. It was noticed that in many of the reviewed studies, one or more foreigners were included on the research teams, perhaps for purposes of publication. Finally, some researchers used scales in

their studies to detect ADHD symptoms but did not provide information about the cut-off levels used when determining who had ADHD symptoms and who did not.

Despite what has been mentioned above, the findings of this systematic literature review provide significant information about the importance of raising the awareness levels of communities, the general public, and health professionals in the Arab region about ADHD, especially in recognizing its signs and symptoms, available treatment options, and effective case management. In addition, for those within the Arab culture and perhaps those within many other cultures, destigmatizing parents as being the sole cause of their children's ADHD behaviors due to inadequate parenting skills (and therefore making parents targets of blame instead of focusing on the needs of affected children) needs to be addressed.

In summary, more scientific research needs to be done in terms of this big issue, and needs to emphasize more about general as well as culturally-specific risk factors, treatment regimens, and the effect the disease has on Arab families. There are many areas that need to be studied and addressed in future studies. More attention needs to be given to the instruments used with Arab populations, so that these instruments can be standardized and modified to fit the demands specific to the Arab culture and sensitivities.

One of the reported problems among Arabs is that there is a stigma related to mental health disorders for many adults, and even more so for children. Also, Arab families often consider going to a psychiatrist or taking medication for these problems as negative reflections of their personalities and as shameful (Abudabbeh, 1996; Al-Krenawi, 2005; Hammad, Kysia, Rabah, Hassoun, & Connelly, 1999; Okasha, 2003; Rousseau, Measham, & Bathiche-Suidan, 2008). While the existence of feeling stigmatized in relation to mental health disorders has been recognized by researchers as part of the Arab culture (Faragallah et al., 1997; Nassar-McMillan et al., 2003), there is a need to understand whether Arab parents perceive ADHD as a mental illness or not; if so, this study proposes that parents' attitudes and beliefs about mental health issues might impact their willingness to seek mental health consultation and care for their

children, and that parents are likely to have a "My child is not crazy!" reaction if someone suggests that their child should be evaluated for behaviors characteristic of ADHD.

Arab-Muslim Families

The Arab world extends from the Atlantic coast of Northern Africa to the Arabian Gulf. It refers to all countries where people speak the Arabic language and share common geographic, historical, and cultural identities. The estimated total population worldwide of the Arab nations is approximately 315 million (Abudabbeh, 1996; Al-Krenawi & Graham, 2000; Al-Krenawi, Graham, Dean, & Eltaiba, 2004; Al-Krenawi, 2005; Budman, Lipson, & Meleis, 1992; Eapen, Yunis, Zoubeidi, & Sabri, 2004; Ibrahim, 2001; Okasha, 2003). Arab people represent about 20% of all Muslims worldwide (Kurdahi Zahr & Hattar-Pollara, 1998). This section of the literature review will give a brief overview of the importance of family among Arab-Muslims, children in Arab-Muslim families, and will conclude by presenting the Arab-Muslim perception of mental health in general and children's mental health in specific.

Arab-Muslim Religious Beliefs

Religiously, the Arab culture is mainly guided by Islam; nearly 90% of the Arab population believes in Allah as God and Muhammad as God's messenger (Zahr & Hattar-Pollara, 1998). For Arab-Muslims, Islam is more than just a religious belief; it is a way of life that regulates individuals, their communities, and specific family roles, including child-rearing practices. The Muslim holy book is the Quran, which is the primary guide for individual behavior and the source of ethics and values.

The Importance of Family in Arab-Muslim Culture

The family is considered the central and the most important social unit in Arab-Muslim communities and loyalty to the family is culturally valued. Therefore, the family structure should be considered a vitally important element in the process of understanding Arab culture. Arab-Muslim people value families to the extent that relationships within families are the means to

accomplishing daily life activities and reaching goals throughout life (World Almanac, 2004). The family system is where individuals experience security, emotional support, a sense of belonging, and through which a sense of identity is obtained. Accordingly, the family unit as a whole is more important than the individuals who comprise it, and the importance of the individual comes from the importance of the family.

Arab-Muslims consider the family unit as the center of loyalty, obligation, and status (Abudabbeh & Aseel, 1999). Extended family membership is the source of social, psychological, and economic security among Arab individuals and it is the motivating factor for individual decision making (Hammad et al., 1999). Moreover, Arab individuals have to demonstrate loyalty, reciprocity, and unity towards members of their families; this is reflected in the high levels of attachment and collaboration among family members (Abudabbeh, 1996; Barakat, 1993; Hammad et al., 1999). In addition, the extended family system is an important resource among Arab families and provides various forms of social support. Families provide assistance in day-to-day functioning, help with child rearing, provide economic support, and serve as a protective role against the daily pressures and stresses from the surrounding environment and the experiences of daily living.

The structure of the Arab-Muslim family is considered patriarchal with respect to age and sex. Moreover, respect is the basis of gender relations in Muslim families, and gender roles are highly traditional. As a result, Arab families tend to be male dominant, where men are considered the heads of the house and thereby control family finances and have the final word in any family decision, including what behaviors and activities are permissible for their wives and children (Aroian, Katz, & Kulwicki, 2006). According to Al-Krenawi and Graham (2000), the father "is considered a powerful and charismatic figure" (p.11) and all family members should respect him as "the legitimate authority for all matters of the family" (p.11). Children in this system are expected to obey parents. The woman's role in such a system is to maintain the home, care for children, and protect the honor of the family (Abudabbeh & Aseel, 1999; Aroian et al., 2006). Arab-Muslim mothers consider their role as mother as more important than their role as

wife because they perceive children as reflective of the strength of the marriage (Haj-Yahia, 1995). Despite the fact that men are the figures of authority in Muslim families, women as mothers have been appointed power over their children and are responsible for raising and disciplining them (Hattar-Pollara & Meleis, 1995). Also, they act as mediators between children and their fathers.

Children in the Arab-Muslim Culture

In the Arab world, children constitute about forty percent of the total population (Abudabbeh, 1996; Abudabbeh & Aseel, 1999; Al-Krenawi & Graham, 2000; Barakat, 1993). Arab-Muslim parents have high expectations for their children, including carrying on family traditions. According to Arab family tradition, children are expected to be respectful and obedient to their parents, and such respect and obedience is considered a lifelong commitment (Okasha, 2003). As mentioned previously in this section, the extended family plays an important role in raising children and providing support for their parents.

Unlike western cultures, Arab children are expected to live with their parents until they get married, and grown children are not encouraged to seek social independence (Abudabbeh, 1996; Hammad et al., 1999). Likewise, according to Arab cultural traditions and norms, Arab individuals consider placing parents in nursing homes shameful. Instead, children are expected to provide care for their parents within their own homes.

Within the family system, parents adopt a set of rules and childrearing attitudes to teach their children. These expected behaviors are known as *adab* and are considered highly valuable in the Arab-Muslim culture. Expected behaviors from children include showing obedience and respect toward parents and elders, speaking in a respectful manner, showing generosity, and acting with bravery. To accomplish these behavioral and virtuous goals, parents tend to use an authoritarian style when rearing their children (Hammad et al., 1999). Accordingly, child discipline is punishment oriented, which may include light physical punishment and strong verbal reprimands.

Arab Parents' Perceptions of Children's Behavioral Problems

It is crucial to consider that child behaviors that are viewed as problematic or deviant by parents or communities are those that deviate from cultural and societal norms. As a result, the larger cultural values held by parents impact parental tolerance levels for problematic child behaviors. Culture influences the way in which parents respond to their children's behavior (Lambert, Weisz, & Knight, 1989; Weisz, Suwanlert, & Chaiyasit, 1985; Weisz et al., 1988).

Thus, Arab parents may be particularly disturbed by a child's behavior that could be perceived as disrespectful or highly inappropriate as such behaviors would be incongruent with the larger societal values of respect and *adab*. Additionally, negative feedback from parents' family members and peers suggesting an inability of the parents to control or manage their children's behavior may increase parents' negative evaluations of their children's behavior. In general, parents perceive children's problematic behaviors as misbehaviors rather than as problems needing professional help. However, such a conclusion has to be considered cautiously because cultural values and parental perceptions of childhood behavioral problems among Arab parents have not yet been directly examined in Arab countries.

Arab-Muslim Families' Perceptions of Mental Health Problems

The literature from Arab countries report that the mental health issue is an ignored area of health in the health care system; in general, individuals tend to underutilize mental health services. Researchers in the field of mental health attribute such phenomena to the culturally sensitive beliefs held by Arab individuals, beliefs affecting attitudes and behaviors toward mental health issues. A number of potential factors that might affect Arab individuals' perceptions and behaviors toward mental health issues are presented in this section.

The literature emphasizes the importance of the influence of culture on determining the perception and behaviors toward mental health (Abudabbeh, 1996; Abudabbeh & Aseel, 1999). Also, the individual's culture plays an important role in how the individual understands an illness and how they respond to that illness (Kleinman, 2006). Accordingly, mental health problems

might be considered as necessitating professional treatment in one culture, while in another culture such problems may be perceived simply as the routine hassles of daily living (Green, 1999). Obviously individual perceptions and responses to mental health issues are greatly influenced by cultural norms, values, and beliefs. In Arab-Muslim societies, mental health issues are often attributed to supernatural entities like demons (Cachelin, Rebeck, Veisel, & Striegel-Moore, 2001; Cachelin & Striegel-Moore, 2006; Green, 1999; Kim & Omizo, 2003; Kleinman, 1987; Kleinman, Eisenberg, & Good, 2006; Vega & Lopez, 2001; Zhang & Dixon, 2003). Such views rise from the cultural norms found in Arab countries; these norms formulate how individuals identify mental health and the issues surrounding psychological problems in general.

In Oman, one of the gulf countries in the Arab world, Al-Adawi and his colleagues (2002) conducted a study examining individual attitudes toward mental illness in that country. The sample consisted of four hundred sixty-eight individuals including medical students (37%), relatives of psychiatric patients (13.8%), and the general public (49.4%). The study findings revealed that the majority of the recruited individuals tended to attribute the cause of mental illness to spirits. The researchers in this study concluded that the cultural and traditional beliefs about mental illness could be improved by implementing programs to educate people about mental illness and mental health, the proper ways of seeking professional help, and when to seek such help.

Al-Krenawi, Graham, and Kanduh (2000) conducted a study in Jordan to investigate the utilization of mental health services among Jordanian individuals. The study revealed that individuals tended to attribute mental illness to the evil eye, magic, or envy, and the majority of the participants indicated that they would seek informal resources and traditional healing in cases of mental health issues. In the same study, the researchers found that older individuals, less educated people, and females tended to perceive mental illness as a result of the evil eye.

In general, Arab-Muslim cultural beliefs have a great impact on how individuals perceive mental illness, how they describe it, how and where they seek help to solve mental health issues, and how they respond to these problems. In the Arab culture, people are considered healthy as

long as they do not suffer from any physical illness (Al-Adawi et al., 2002; Al-Issa, 2000; Al-Krenawi & Graham, 2000; Al-Subaie & Alhamad, 2000). Also, they tend to somatize mental health problems by expressing symptoms physically, which is directly attributable to cultural beliefs about mental illness (El-Islam, 1994; Okasha, 2003). Moreover, traditional and religious healers play major roles in primary psychiatric care in Arab countries. It was estimated that the majority of mentally ill patients in the Arab world have been to traditional healers before coming to a traditional psychiatrist *(Al-Issa, 2000; Al-Krenawi & Graham, 2000; Al-Krenawi, Graham, & Kandah, 2000; Al-Krenawi et al., 2004; Al-Subaie & Alhamad, 2000; Okasha & Karam, 1998; Okasha, 1999; Okasha, 2003).*

For example, a study conducted by Al-Krenawi and Graham (1999) found that Arab patients tend to believe that traditional healers are the best treatment for mental illness. Such beliefs were negatively correlated with individual perceptions and attitudes toward mental health problems and formal mental health services. Such results indicate that the beliefs held about mental illness are still traditional in Arab countries and do not favor a medical model; that is why individuals tend to seek traditional and religious healers instead of seeking professional help for mental health problems.

One of the traditional Arab cultural values is that people tend to negatively perceive a person who complains about health issues. Some researchers used this reason to explain why Arab individuals, who suffer from mental health problems, wait for long periods of time before considering any formal or informal intervention, and sometime they wait until the problem becomes chronic and untreatable (Abudabbeh, 1996; Abudabbeh & Aseel, 1999; Al-Adawi et al., 2002; Al-Issa, 2000; Al-Krenawi & Graham, 1999; Al-Krenawi & Graham, 2000; Al-Subaie & Alhamad, 2000; Okasha, 2003).

Another reported problem among Arabs is that there is a stigma related to adults having mental health disorders, and even more so for children. Also, Arab families often consider going to a psychiatrist or taking medication for these problems as stigmatizing and shameful (Abudabbeh & Aseel, 1999; Dwairy, 1998). Therefore, people who suffer from mental health

problems tend to hide these problems for fear of stigmatization. Also, as part of traditional cultural values, individuals try to deal with their problems on their own and then, if they are still unable to resolve them, seek help from their family members (Abudabbeh, 1996; Al-Krenawi, 2005; Hammad et al., 1999; Okasha, 2003; Rousseau et al., 2008). Moreover, Arab researchers hypothesized that the feelings of shame and stigma in terms of mental health problems among Arab individuals might hinder their expression of mental illness as well as prevent them from seeking professional help in the early stages of the mental health problems (Faragallah et al., 1997; Nassar-McMillan et al., 2003). In such cases, these individuals think that revealing their mental health problems could impact the social standings of their families as well as their integration within their communities (Abudabbeh & Aseel, 1999).

Abu Ras (2003) conducted a study to investigate barriers to mental health service utilization among Arab immigrant women. The results of the study indicate that nearly 70% of the participants reported feelings of shame and 62.7% reported feelings of embarrassment associated with the seeking of formal services for mental health problems. This demonstrates that the stigma associated with mental illness could impact individual perceptions and understandings of mental illness in general.

In summary, individuals with mental health problems and their families perceive mental illness as a stigma that negatively affects the person's and the family's reputations. For Arab families, family reputation is highly valuable in the community and the presence of mental illness within the family might impact the status of the individual and the family at the same time in the community.

Acculturation

Moving to another country with different cultural values can be complicated, challenging, and stressful. No less so than when moving to a culturally diverse country such as the United States. Acculturation, described as the adaptation process to a majority or new host culture (Al-Krenawi & Graham, 2000; Al-Krenawi et al., 2004; Al-Krenawi, 2005), is the term that usually

describes the adaptation process to a foreign culture. The process of acculturation to the United States can be impacted by several factors. Among these factors are the country of origin, length of stay in the United States, reasons for immigration, the ability to return or visit the home country, the long-term plans for staying in the United States, and language factors such as the ability to speak and understand the English language (Al-Subaie & Alhamad, 2000).

The link between cultural values and acculturation for Arab immigrants in the United States has not been investigated. Rather, the influence of cultural values on the attitudes toward mental health and mental health services among immigrant Arab individuals has been reported in the literature (Amer & Hovey, 2007).

Haque-Khan (1997) conducted a qualitative study to assess Muslim women's attitudes toward mental health. The results of the study indicate that the less acculturated women were much less likely to seek mental health services than were those who were highly acculturated. Other researchers found that the lack of language skills may impact Arab patients in deciding whether or not to seek mental health care (Erickson & Al-Timimi, 2001). Additionally, Arab immigrants were found to demonstrate less familiarity with western models of treatments and the nature of the health care system in these countries (Erickson & Al-Timimi, 2001; Al-krenawi, 2002, Al-krenawi, Graham, & Kandah, 2000).

There is a gap in literature investigating the acculturation process among Arab immigrants in terms of mental health problems and how Arab cultural values are related to the acculturation process and mental health. How the acculturation process impacts Arab families and their perceptions of mental health in general as well as child mental health in specific has not been investigated. Thus, there is a need for more research in this area to capture the importance of the level of acculturation and its impact on mental health attitudes among Arab immigrants.

Arab-Muslim Children and Mental Health Problems in Arab Countries

Despite the fact that children constitute approximately forty-five percent of the Arab population, the majority of parents and teachers lack awareness about psychological development and behavioral problems among children (Al-Krenawi & Graham, 2000; Amer & Hovey, 2007; Erickson & Al-Timimi, 2001; Faragallah et al., 1997; Nassar-McMillan et al., 2003). The prevalence of childhood behavioral and DSM-IV psychiatric disorders was reported in Arab countries by many researchers (Al-Krenawi & Graham, 2000; Haque-Khan, 1997; Kulwicki, Miller, & Schim, 2000). However, there is a dearth of studies investigating people's perceptions of children's mental health problems in general. It was difficult for the researcher in this study to find literature concerning such perceptions of Arab families about their children's behavioral problems.

Summary

While mental health disorders carry with them a negative social stigma, which has been recognized by researchers as part of the Arab culture (Okasha, 2003), there is a need to understand whether Arab parents perceive ADHD as a mental illness or not. If so, it is proposed by this study that the attitudes and beliefs of parents about mental health issues might impact their willingness to seek mental health consultations for their children if they equate mental health disorders with "being crazy." When someone suggests that a child be evaluated for behaviors characteristic of ADHD, it is important that ADHD be seen for what it is, as well as for what it is not.

Also, the Arab-Muslim cultural values discussed in this section are likely to have an important influence on the manner in which Arab parents evaluate and respond to child behaviors, especially with respect to problematic child behaviors common to ADHD. However, research in this area is limited as it has largely been conducted among adult patients. An

understanding of the role of these values in parental perceptions of child behavior problems would increase our understanding of subsequent parenting reactions.

In such a discussion, it is fundamental to remember that Arab-Muslims are a heterogeneous population, with large variations in countries of origin and in traditions, values, and beliefs. Consequently, making generalizations that apply to the entire Arab population is impossible. However, the earlier discussion may provide a general understanding of the context in which Arab children are reared.

The Conceptual Framework

The ecological framework, developed by Urie Bronfenbrenner (1979) (see Figure 1), was used as a lens with which to view how immigrant Arab Muslim mothers perceive ADHD in children. This framework suggests that a context of multiple interacting ecological systems, embedded within one another and ranging from micro- to macro-levels (microsystem, mesosystem, exosystem, macrosystem), provides a model for understanding the experiences of immigrant Arab Muslim mothers and how they perceive ADHD.

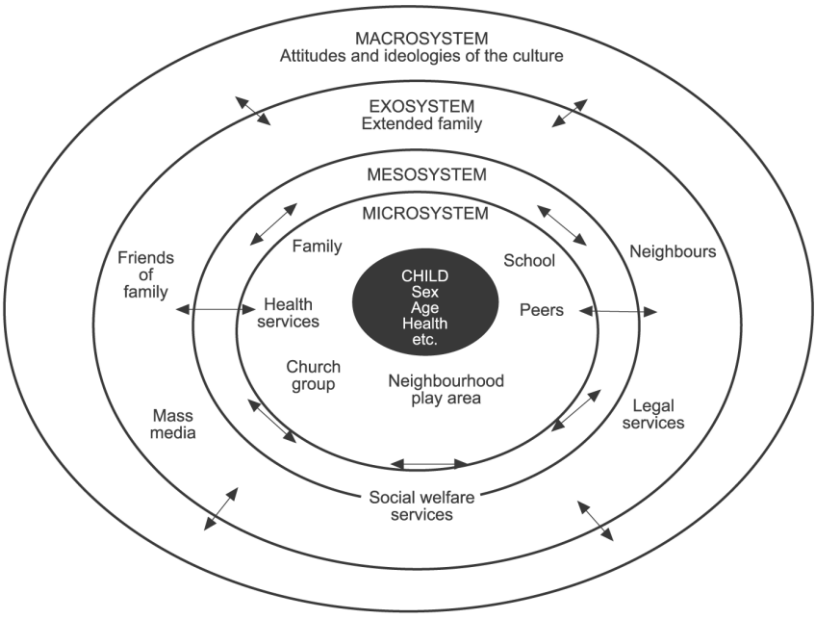
The microsystem represents the closest environment to the child. This level includes the individual's immediate systems and settings like the family, classroom, church, work, or neighborhood. This level has a direct influence on the child's development, as it represents the first phase of the child's interaction with his/her surroundings. The second level is the mesosystem. This level represents the connection between two or more systems. According to this model, each system in this level is influenced by the other systems. For example, families are highly influenced by other systems within the microsystem level such as schools, neighbors, children's school, and extended families. Accordingly, to understand the behavior patterns in families, one should consider all the ecological factors that might impact these behaviors (Diaz, 2009).

The next level is the exosystem. This layer includes the larger social system with which the child does not have direct interaction. However, this layer's systems interact with the systems in the microsystem in ways that impact the child's development. An example of this level is the parents' work place (Bronfenbrenner & Morris, 2006).

The final level is the macrosystem. The macrosystem includes broad contextual systems such as cultural values, political philosophies, economic patterns, and social conditions. These systems are embedded within each system in the other levels in the system. According to this study's assumptions, culture is one of the determinate factors in the macrosystem. For the

purpose of this research, participants will be asked to identify how their cultural background interacts with and/or determines their attitudes and influences in the other systems (microsystem, mesosystem, and the exosystem).

Figure 1. The Ecological System Framework



Source: Dockrell and Messer (1999, p.139)

According to this model, complex systems of families, neighborhoods, schools, and social and cultural activities are the developmental contexts that may support or challenge child development. These developmental contexts connect and interact with each other as well as with the developing individual at all levels to shape the environment for the developing individual (Bronfenbrenner, 1986). The model proposes that family (microsystem) is the principal context where human development takes place; thus, parenting plays a key role in the system (Berk,

2000; Bronfenbrenner, 1986; Bronfenbrenner & Morris, 2006). In this study, the interacting systems include the child, the family, the parental culture, and the culture of the immigrant's country. Taking into consideration that there are different factors affecting the interaction between the ecological systems contexts, the ecological theory "provides a framework for looking at ways in which intrafamilial processes are influenced by extrafamilial conditions and environments" (Bubolz & Sontag, 1993, p. 423). In other words, an ecological theory emphasizes the importance of the cultural factors embedded in this model.

According to the ecological model, parenting is considered a critical component because it shapes the child's developmental process and experiences within his/her immediate environment (Berk, 2000; Bronfenbrenner, 1986). As stated by Bornstein and Cheah (2006), "Parenting is at least partly culturally constructed" (p.4). Accordingly, parenting itself is influenced by the broader culture (macrosystem), as the latter plays a significant role in shaping the parenting process. Cultural beliefs influence the way parents perceive the proper skills and competencies that their children should develop in order to fit and function effectively within the culture. Parents tend to adopt culturally-shaped childrearing values to nurture their children, with the aim that children achieve specific developmental goals (Bronfenbrenner & Morris, 2006). According to the ecological systems model, parental behavior toward child behavior is highly motivated by the parents' cultural parenting beliefs about appropriate child behavior as well as parenting strategies for specific behaviors. Thus, the deliberation of parental cultural beliefs is a critical step toward a better understanding of the ways that members of different cultures perceive, evaluate, and respond to problematic child behavior (Bronfenbrenner & Morris, 2006).

For Arab immigrant families, the preceding discussion about culture and culturally-shaped childrearing values is a key issue. Arab parents, as mentioned previously in the literature review section, have specific aims and beliefs about their children's development and how their children should be raised in order to reach cultural expectations. When these families immigrate to foreign cultures, they try to keep their culturally-rooted childrearing values; at the same time, they try to incorporate these values within the new cultural streams. Applying the concept of the

ecological model, the child is nested within an immigrant family that has specific culturally-rooted childrearing values. The family is exposed to a new culture, where everything is different from the ways that they had been raised; meanwhile, they are trying to adapt to a new culture. In their country of origin, they may not have recognized a child's behavior as problematic. However, when they immigrate to a different culture, they interact with a new environment that includes school systems, communities, and neighborhoods, where children's behavioral problems may have been well-studied and recognized. So, how these parents perceive childhood behavioral problems, how they approach such problems, and how they respond if school teachers, for example, complain about their child having behavioral problems symptomatic of ADHD, can become a confusing clash between personal and social cultures. The importance of parental cultural beliefs in the perception of and intervention with the child displaying behavioral problems cannot be over-emphasized.

Applying the ecological framework in this study was not meant to elicit causal relationships between factors. Rather, it will be the framework that will aid in understanding how the interaction of these factors impacts parental perception of child behavior and how this interaction facilitates particular parental responses (Rubin & Chung, 2006). Since the ecological systems model encompasses a broad framework, the researcher in this study will focus on the family aspect of this model and the cultural piece that influences the childrearing behaviors among Arab parents. Such a focus will help in understanding how Arab parents perceive and react to behavioral problems in their children, thus gaining more insight into what Arab parents think regarding potentially troubling behaviors in children. Do they consider these behaviors as problematic and reflective of a child who needs medical attention, or do they perceive the child as a normal, active child who is simply acting like a child?

Summary of Conceptual Framework

Brofenbrenner's ecological framework was used as a lens through which to view how Arab immigrant Muslim mothers perceive behaviors associated with ADHD. This theory studies

the child's development within the context of the system of relationships that form his/her environment. One specific aim of this study was to use theoretical vignettes to elicit descriptions and understandings of behavioral problems in general from immigrant Arab Muslim mothers. Also, parents' culturally-shaped childrearing behaviors toward their children was explored specifically in case their children exhibit behaviors similar to those found in the vignettes.

The second aim of this study was addressed through exploring parents' understandings and descriptions of ADHD, using the list of DSM-IV criteria for ADHD by which to compare. In this part, parental cultural beliefs about childhood ADHD was elicited by asking questions about the symptoms and thoughts the parents have regarding such a disorder. These questions were designed according to the ecological systems component of culture and parenting. For example, participants were asked about their thoughts regarding ADHD, how they perceived it, how they would react if their children were to exhibit these behaviors, and so forth.

For the third aim of this study, questions were designed to compare the cultural beliefs Arab immigrant Muslim mothers hold about ADHD and the western cultural beliefs and attitudes about ADHD. The background of these questions was driven by the components of the ecological systems model, with specific attention toward the macrosystem (culture). As mentioned previously in this section, Arab parents come from a totally different culture than the culture found in the U.S.A. Thus, this study aimed to explore what, if any, impact the U.S. culture has on Arab immigrant mothers in their perceptions of ADHD, and how such perceptions of ADHD may differ from what is known in the U.S. culture about ADHD.

CHAPTER 3. METHODOLOGY

This was a qualitative descriptive study that used purposeful sampling and qualitative content analysis to analyze the data. Qualitative descriptive studies are appropriate when the phenomena of interest are understudied. For this study, Arab immigrant Muslim mothers' perceptions about children who display disruptive behaviors or ADHD symptomology were sought. Findings from this study are among the first to report Arab mothers' perceptions about ADHD and how they respond to ADHD-related behaviors.

Sampling/Participants/Setting

A purposeful sample of Arab immigrant Muslim mothers with children between the ages of 5–12 years old was recruited for this study. This age range was targeted because the majority of children diagnosed with ADHD are school age (Barkley & Murphy, 2006). Purposeful sampling is a way of selecting information-rich cases for in-depth study (Coleman & Wampold, 2003). Mothers were recruited for this study because within the Arab Muslim culture, mothers are considered the primary care-takers of children, spending the majority of their time with them (Abudabbeh, 1996; Hammad, Kysia, Rabah, Hassoun, & Connelly, 1999; Zurayk, Sholkamy, Younis, & Khattab, 1997), and many studies of this nature begin with mothers because they can provide more first-hand information about their children's behaviors (Diaz, 2009; Kendall, Leo, Perrin, & Hatton, 2005; Oh & Kendall, 2009).

In the United States, there is a scarcity of studies addressing children's behavior problems in this ethnic group (Faragallah, Schumm, & Webb, 1997; Nassar-McMillan, Hakim-Larson, & Hakim-Larson, 2003). Moreover, it is not known how Arab immigrant Muslim mothers understand ADHD, how they perceive ADHD-related behavioral problems in children, or how they respond when they notice inappropriate behaviors exhibited by their children. Also, Arab immigrant families in the U.S. are increasing (Al-Krenawi & Graham, 2000; Hammad et al., 1999). Hence, it is necessary to conduct a study that explores the perception of Arab parents

(mothers) about childhood ADHD in this growing population. Such knowledge is important in planning child mental health and related services that would benefit Arab immigrant families.

The study was conducted with Arab immigrant Muslim mothers living in the Midwest. Specifically, the study took place in Iowa (Iowa City and Cedar Rapids) and Wisconsin (Milwaukee) in the United States. Since each Arab country has its unique cultural perspectives, norms, and values, and even within individual countries not all Arab Muslims are the same, Arab mothers from different Arab countries were sought because a variation among participants is important to help assure that themes and patterns identified in the data are shared across diverse cases (Patton, 2002). The study sample included mothers from Egypt, Jordan, Kuwait, Libya, Oman, Palestine, Sudan, and Syria.

Inclusion criteria consist of Muslim immigrant women ages 18 or older of Arab descent who were born and raised in their home countries, and have been living in the U.S. for at least one year, who had children between the ages of 5 and 12 years old, and who were able to provide written consent. Mothers who self-reported emotional, cognitive, or mental conditions were excluded from this study because such problems might impede their ability to give informed consent.

Recruitment Method and Strategy

The researcher targeted the main Mosques in the previously mentioned cities. Moreover, she contacted the mosques' imams, who are the leaders of the Muslim congregations and responsible for making decisions. The imams' endorsements were important to the researcher to gain trust from potential participants. The imams approved the project, granting the researcher access to the members of the congregations. After that, recruitment materials (introductory letters, response forms, and pre-addressed envelopes) were sent to the mosque administrators, who facilitated the recruitment of the study participants by broadly distributing the recruitment materials on behalf of the researcher. The introductory letter contained information about the researcher and a brief description of the proposed research. It also addressed ethical concerns

such as confidentiality and the protection of human subjects. Mothers who were interested in the study were instructed to return a response form giving permission to be contacted about the study.

After the researcher received the response forms from the mothers, she contacted the mothers via phone to introduce herself, talk about the planned study, and discuss the consent process using the consent document. During that phone call the participants had the opportunity to ask any questions they had about the study. An appointment was scheduled for an in-person research interview for those interested in further participation.

Interview Procedure

The researcher conducted all of the interviews. The participants were given the choice of being interviewed in their homes or at other neutral locations. Ten participants preferred to be interviewed in their homes, while the other six participants asked to be interviewed in a private room at the mosque because they felt their home environments were too noisy.

The researcher is from an Arab country and shares a similar cultural background with the participants. She speaks the same language (Arabic) and has the same faith (Islam) as the participants; she is also a woman parenting three children. Hence, the researcher was able to build trusting relationships with the participants, which gave them the opportunity to be candid with the researcher during their interviews.

Before the start of the interviews, mothers were asked to sign the consent form. The mothers were assured that their participation was totally voluntary and that they could skip any question they did not want to answer. After giving their consent to participate in the study, the researcher administered the sociodemographic questionnaire asking basic information about the mothers (country of birth, age, level of education, age of children in the family, occupation, number of years of living in the U.S.A.) (see Appendix A). Then the researcher used a semi-structured format to obtain participant data about their description and understanding of children's behavioral problems in general, the mothers' perceptions of ADHD in specific

(including the signs and symptoms, diagnosis, and treatment), how they would react to such problems, and whether their thoughts and perceptions about ADHD differed from those found in the western culture in which they lived. During the interviews, probing questions were asked as needed to clarify what the participants had said.

Interview measures to address the study aims

Aim 1: Explore how Arab Muslim mothers describe and manage children who display externalizing behaviors (e.g., inattention, impulsivity, hyperactivity, oppositional).

For this aim, two hypothetical behavioral vignettes representing behavioral problems in children were used to elicit the mothers' perceptions, understandings, and descriptions of children's behavioral problems in general. The two vignettes were developed by the researcher. The first one told a story about a child who exhibited some signs and symptoms of ADHD; the second describes some behaviors of ODD (Oppositional Defiant Disorder). After reviewing the literature, the researcher developed the two vignettes; then, in order to validate them, the researcher sent the two vignettes to two members of the researcher's committee who have experience in this field (one of them is a psychologist and the other is an educator). Also, the two vignettes were piloted in two interviews to validate them.

While many of the studies showed that parents could report symptoms of ADHD from a checklist, it is not known if parents from Arab nations recognize ADHD as a problem, Furthermore, what might be considered problematic behavior that necessitates medical attention in one culture might be perceived as behavior typical of an active child in another culture. Hence, the mothers were blinded in terms of the names of the disorders that were exhibited in each vignette, because the researcher want to elicit information about how Arab Muslim mothers would describe and respond to such behaviors and if they would consider these behaviors as a problem. The manner in which the behaviors are described in these vignettes are similar to many other vignettes that have been used in the literature to represent the behaviors of ADHD (Bickett, Milich, & Brown, 1996; Johnston & Patenaude, 1994; Johnston & Freeman, 1997; Johnston,

Chen, & Ohan, 2006). A written copy of the vignettes was provided to the participants and the documents were read out loud by the researcher. To elicit the needed information specific to this aim, mothers were asked questions to describe these behaviors, how they would label them, how they would respond if their child exhibited such behaviors and why, if they would seek professional help for the child, and how they would manage such behaviors (see Appendix B for behavioral vignettes and interview guide, questions 1–9).

Aim 2: Examine Arab immigrant Muslim mothers' understandings and perceptions of an ADHD diagnosis.

General understandings and perceptions of ADHD symptoms as outlined in the DSM-IV were elicited using an open-ended method (Denzin & Lincoln, 2005) by asking the mothers to review a list of ADHD symptoms that were adapted from the Disruptive Behavior Rating Scale (DBRS) (Barkley, 1998) (see Appendix C for the list of DSM-IV ADHD symptoms and interview guide, questions 1–10). The Disruptive Behavior Rating Scale is a 50-item scale that identifies common behavior problems such as attention deficit disorder, oppositional disorders, and anti-social conduct problems in school children (Barkley, 1998). Internal consistency and test-retest reliabilities for this scale range are [0.68 to 0.92] and [0.72 to 0.95] respectively; no information is available on the validity of this scale (Barkley, 1998). Eighteen items were used from the DBRS because these items closely resemble the DSM-IV criteria of ADHD symptoms. The behaviors were chosen in consultation with the same two committee members.

Each symptom was read aloud to the participants. The researcher then asked the participants to share their thoughts about the symptoms as well as what came to their minds when they first heard each one. To elicit their ideas about ADHD, mothers were asked to describe these behaviors in general, how they would label them, how they would respond if their child exhibited such behaviors and why, if they would seek professional help for the child, if they had heard of ADHD before and what it meant to them, and whether they consider it a mental health problem. When participants had problems understanding some of the signs and symptoms of ADHD, the researcher explained these symptoms for the mothers. For example,

mothers were having difficulties understanding the word "fidget"; one mother asked, "What do you mean by that?" The researcher explained this symptom as meaning that when someone tries to communicate with the child, the child would start to play with hands and fingers, and would not pay much attention (see Appendix C for the list of DSM-IV ADHD symptoms).

Aim 3: Compare Arab immigrant Muslim mothers' perceptions of the diagnosis and management of ADHD with western cultural practices in diagnosis and management.

The questions that pertain to aim three were asked as part of the interview questions for aim one and aim two (see Appendix B, questions 10–11, Appendix C, questions 11–19). The researcher asked the mothers about what people would call ADHD and the externalizing behavioral problems back in their home countries, their thoughts about how ADHD should be managed, how is it treated at their home countries, and if the mothers are aware of how ADHD is diagnosed and managed in the U.S. If they answered "yes" to this last question, they were asked to explain their answers. If they answered "no," the researcher stated that in the U.S., ADHD is diagnosed by using specific assessment and diagnostic processes, and that it is a well recognized childhood behavioral disorder. Also, the researcher provided information about how this disorder is treated in the U.S., and then mothers were asked what they thought of these management modalities.

The use of an interview guideline ensured that questions were asked consistently across participants and that all the study dimensions were covered during each interview with each participant. General questions followed by probes were used to obtain more information about the participants' responses (Denzin & Lincoln, 2005; Flick, 2002; Rice & & Liptak, 2000). The initial responses of the participants for the general questions guided the determinants of the probe questions. This procedure helped in eliciting the needed information about how mothers perceive children's behavioral problems. All interviews were audiotaped. Two interviews were conducted in Arabic.

At the end of each interview, participants were asked if they had anything to add or if they had any questions; if not, the researcher ended the interview by thanking the participants for

their participation in the study. The researcher recorded her field notes including observations, methodological notes, and personal notes after each interview. These notes were used by the researcher during the data analysis process to support the findings as well as give the researcher the opportunity to reflect on what she had experienced during the interview (Denzin & Lincoln, 2005).

After IRB approval was received, pilot interviews were conducted with Arab Muslim mothers from the researcher's community to test the interview guide and to clarify any information that was unclear. The researcher piloted the vignettes during these interviews to test for the validity of these vignettes. Furthermore, the pilot interviews helped to ensure that the interview guide would elicit the information sought through this study, and that the participants were comfortable with the proposed interview guide and the length of the interview (Van Teijlingen, Rennie, Hundley, & Graham, 2001). No difficulties were identified with the study guide and the study procedures. After conducting these two interviews, the researcher discussed the process and findings with her advisor, who is considered a methodological expert and who concurred with the process and findings of the two interviews.

The data collection process was continued until data saturation was reached, meaning the researcher was no longer hearing new information despite the addition of new participants (Bowen, 2008; Byrne, 2001; Guest, Bunce, & Johnson, 2006; Sandelowski, 2000). Data saturation was reached after thirteen interviews. Therefore, and in order to promote accurate description for the categories, the researcher went beyond the saturation point in data collection and conducted three more interviews. Such a strategy is important in qualitative research to enhance the validity of the study (Graneheim & Lundman, 2004; Sandelowski, 2000).

Data Management

Each interview was digitally recorded and transcribed verbatim into Microsoft Word by the researcher. Each transcript was verified by the researcher by listening to the recording to

check the accuracy of the transcription. Also, the transcription was validated by an independent bilingual individual to ensure its accuracy.

Two interviews were conducted in Arabic. These two interviews were then translated into English by the researcher, as she is bilingual and proficient in both languages. An independent bilingual individual validated the translation.

The following measures were taken to guarantee confidentiality during this study. All data collected from the study were kept at a locked, secure location to which only the researcher had access. Each participant was issued a pseudonym ID number. The data was stored in an NVivo 9 database. The NVivo9 is a qualitative computer software program (QSR International, 2010), and was used with the transcribed data to facilitate data analysis coding by managing and organizing the content of each interview. The NVivo software allowed the researcher to code, sort, and retrieve data during the analysis process.

Data Analysis

Qualitative content analysis was used to identify the important aspects in the transcripts. Qualitative content analysis is a dynamic process of analysis used widely in descriptive qualitative studies that aims at summarizing the informational content of the data (Graneheim & Lundman, 2004; Mayring, 2000; Morgan, 1993; Sandelowski, 2000). The analysis process and the data collection process were simultaneously conducted in this study. Each interview, along with field notes, was entered as a separate case in NVivo. The demographic information (country of birth, age, level of education, number of children, age of children in the family, occupation, years living in the U.S.) was collected prior to each interview.

After the first six interviews, the researcher's advisor read each interview. The researcher and her advisor then discussed the findings of these interviews. The discussion revealed that themes were emerging but the data lacked depth. In order to remedy the situation, the researcher role-played interviews with her advisor and with other qualitative researchers, reading the interviews aloud. During this process the researcher was able to analyze her communication

techniques, and by the end of each role play she was able to get feedback from her advisor and her colleague about the interview process. This review resulted in altering the interview process to obtain more depth in participant responses by probing the participants to explain responses in more detail or clarify their responses, and by providing summary statements for the participants to verify. Changes to some questions were also made in order to prevent the potentiality of leading the participants to answer in specific ways. For example, the two questions "Would you discipline your child if he/she exhibited such behaviors; if so, what type of culturally accepted discipline would you use (if any) for this child?" were merged into one question as follows: "How would you manage your child's behavior if she/he exhibited such behaviors?"

Analysis continued by several readings of the interview transcripts to gain familiarity with their contents. The entire transcript for each interview was divided into meaningful units and was labeled with codes (Graneheim & Lundman, 2004; Mayring, 2000; Morgan, 1993; Sandelowski, 2000). Meaningful units have been defined by Graneheim and Lundman (2004) as "The constellation of words or statements that relate to the same central meaning" (p. 106). In this study, each response to the interview questions in every interview was considered a meaningful unit. Then the meaningful units were given descriptive codes. The assigned codes were based on broad topical areas consistent with the aims of this research. The various codes were then compared based on differences and similarities and sorted into categories based on the three broad areas derived from the research aims: aim one, mothers' perceptions of externalizing behavioral problems in general; aim two, mothers' perceptions and understandings of ADHD; and aim three, differences in mothers' responses based on their cultural backgrounds. The researcher then read within each category and created more discrete descriptive subcategories for the contents of each category (see Table 8 for examples of these steps) (Rice & Liptak, 2000; Sandelowski, 2000).

Table 8. Example of Category/Subcategory from Content Analysis of Text Related to Aim One.

Aim One	Mothers' perceptions of children's behavioral problems in general					
Categories	Words they used to describe the behaviors		Parental responses when noticing and intervening in problematic behaviors			
Subcategory	Spoiled	Active	Work collaboratively with teachers	Being more strict	Being more involved with the child	Communication with the child

After all the transcripts were analyzed, the researcher, using NVivo, created a report for each of the identified categories and subcategories. The report generated a document listing each category and subcategory code and the corresponding text for each code. The researcher reviewed the data generated by the report to make sure that each quote from the participants' transcripts represented the code it was assigned to. The researcher also reviewed the transcripts and the field notes again to confirm that the essential codes had been captured. To validate researcher coding, the researcher and her adviser met weekly to review transcripts and coding categories.

The third aim of the study was to compare Arab immigrant Muslim mothers' perceptions of the diagnosis and management of ADHD with western cultural practices in diagnosis and management. Length of stay in the United State may influence a mother's perceptions related to this aim. Therefore, the participants were grouped into three groups according their length of stay in the U.S. The groups were as follows: mothers who have been in the U.S. for 1–5 years, mothers who have been in the U.S. for 6–10 years, and those who have been in the U.S. for more than 10 years. The reason behind selecting these three groups is that the participants' lengths of stay in the U.S. were almost evenly distributed between those three groups. In order to describe differences and similarities in mothers' perceptions about external behavioral problems, including ADHD, the categories and the subcategories were compared across the three groups to

identify patterns and the frequency of coded responses (Denzin & Lincoln, 2005; Rice & & Liptak, 2000; Sandelowski, 2000).

Trustworthiness of the Data

The principles of dependability, credibility, and transferability are needed to ensure trustworthiness in qualitative research, especially with descriptive qualitative studies using content analysis (Graneheim & Lundman, 2004; Sandelowski, 2000). These principles are parallel to measuring the validity, reliability, and generalizability of quantitative studies. The principles of dependability, credibility, and transferability were taken into consideration throughout this process (Graneheim & Lundman, 2004a), and are described in detail below.

Dependability

Dependability refers to the researcher's precautions throughout the research process to protect against changes in data over time, and to document any changes in the researcher's decisions while collecting and analyzing data (Lincoln & Guba, 1985). To establish the dependability of the current study, specific procedures were implemented. The researcher used an interview guideline during each interview; the use of an interview guideline ensured that questions were asked consistently across participants and that all the study dimensions were covered during each interview with each participant. This procedure protected against changes during the study process, and ensured that the researcher followed the study aims and procedures. Regular meetings were scheduled between the researcher and the researcher's adviser to discuss, evaluate, and document all the steps taken during sampling, data collection, analysis (including the coding process), and finally, in writing the results. As a result of these meetings, several changes occurred. The researcher changed one of the interview guide questions because it was thought that the question was leading the participants' answers. More in-depth probes were proposed to allow participants to answer interview questions with added thought and provide the opportunity for clarification. In addition, analysis meetings were held regularly

with the researcher's adviser to compare coding processes, the application of codes, and to discuss conceptual relationships among the codes and categories as the study progressed.

Also, the transcribed materials were validated by an independent individual to ensure the accuracy of these materials. The translated materials were also validated by an independent individual to ensure the precision of the translated documents. The researcher generated a code book to document all of the codes and the description of each. Field notes were used to report and document the researcher's experiences and observations after each interview.

Credibility

According to Graneheim and Lundman (2004), credibility "deals with the focus of the research and refers to confidence in how well data and processes of analysis address the intended focus" (p. 109). The components of this criteria are choosing participants who can provide rich data about the phenomena of interest, selecting the appropriate data collection and analysis methods, deciding the amount of data that are necessary to answer the questions of the study, selecting the appropriate meaningful units during data analysis, identifying the similarities and differences between categories, ensuring the precision of the codes and categories used (Graneheim & Lundman, 2004), and gaining the trust of the participants in the study.

Because not all Arab countries are the same and each country has its own unique culture and values, and to ensure the choosing component of the appropriate participants who can provide rich data about the phenomena of interest, the researcher sought participants from different Arab countries to capture varying perspectives regarding the specific research aims. Since the data analysis and the data collection process happened simultaneously, the researcher was able to note data saturation. The researcher went beyond this point to promote accurate descriptions for the categories.

Since the researcher's intention was to elicit participant descriptions as well as use the participants' words to represent the study findings, the content analysis process was the method of choice for analyzing the study data, since it allows for summarizing the informational content

of the data. Also, to capture varying ideas regarding the specific aims of this study, the purposeful sampling process was deemed appropriate, as it targeted a specific population that the researcher assumed would have rich informants for the study. The use of a purposeful sampling technique for participant enrollment and the qualitative content analysis method for data analysis are considered appropriate for the descriptive qualitative method (Graneheim & Lundman, 2004; Hsieh & Shannon, 2005; Sandelowski, 2000).

Regular meetings with the researcher's adviser were established in order to discuss the data analysis and study findings. Since the researcher's adviser is an expert in her respective field, her feedback regarding data analysis as well as the study findings and interpretation were sought to make sure she concurred with the researcher's findings. These meetings allowed for regular discussion about the interviews, data analysis, and presentation of the findings. Such discussions gave the researcher the opportunity to ask participants for additional clarification and elaboration during the interview process and allowed the researcher to modify the interview questions.

Another strategy that increases the credibility of a study's findings is to gain the participants' trust (Sandelowski, 1986). The researcher is an Arab Muslim mother; hence, her background and familiarity with the Arab culture, along with being a Muslim Arab mother herself, gave her the ability to gain participant trust. To report the study findings, the researcher used quotes taken from participant interviews to support her findings; this also strengthened the presented findings.

Transferability

Transferability refers to the degree of possibility for transferring the study findings into other settings or groups (Polit & Beck, 2004) . In other words, the researcher cannot suggest ideas for transferability; rather, it is the reader's judgment whether the findings are transferable to another context or not (Graneheim & Lundman, 2004). Therefore, a clear and distinct description of the culture of the participants was provided in chapter two. Participant selection

criteria and characteristics and precise descriptions of the processes of data collection and analysis were provided in the study process and in the presentation of the study findings. Using appropriate participant quotations was also a strategy to gain transferability.

Protection of Human Subjects

Approval to carry out all study procedures was received from the University of Iowa Institutional Review Board Committee (IRB-02). All data collected from the study were kept at a locked, secure location to which only the researcher had access. Each participant was issued a pseudonym and ID number. All the data were destroyed at the end of the study. Prior to enrollment, consent forms were given to the participants to ensure that all who participated in the study did so voluntarily. All of the study aspects and issues, along with its purpose and benefits, were shared with participants during the consent process before the study was conducted. Consent forms were kept apart from the transcribed interviews. The participants were assured that they had the choice to drop out of the study and that their participation was completely voluntary. Also, they were assured that after the researcher was done with study, all of the study data would be destroyed appropriately. The participants were assured that there would be no direct benefits for them as a result of their participation in the study. The only benefit from participation would be their being given the opportunity to share their perceptions and thoughts with an interested person (the researcher). Also, the participants were assured that they could refuse to answer any question and could stop the interview if they felt that they could not proceed with the process; this did not happen during the study. Since this was a descriptive qualitative study, the researcher could not provide any advice to the participants; rather, the researcher provided them with a list of resources for further information.

Potential Risks

It was possible that study participants could experience minimal psychological risks. Participants may have felt embarrassed, anxious, a degree of discomfort, or being under pressure to give “correct” answers to the study questions. In such cases, the researcher assured the

participants that taking part in the study was completely voluntary and that they could skip any questions they did not want to answer. Also, the researcher informed them that the interview could be stopped if they wanted a break or could not continue. The researcher also assured the mothers that the study questions had no right or wrong answers and their comments would be held in strict confidence.

Another possible risk was a breach of confidentiality. To ensure the maximum level of confidentiality, a pseudonymous ID was assigned to each participant. Consent forms were kept separate from the transcribed interviews. The study data were stored in a locker to which only the researcher had a key. All electronic data was password protected. All data was destroyed after the study ended.

Summary

This was a descriptive qualitative study. The ecological system framework was used as a lens to understand how Arab Muslim mothers perceive external behavioral problems (ADHD) among children. A purposeful sampling strategy was used in recruiting the participants. Arab immigrant Muslim mothers who had children between the ages of 5–12 years old were sought for the purpose of this study. Content analysis was used for the purpose of data analysis. Scientific rigor for the study's methodology was established and considered throughout the research process. The concepts of credibility, dependability, and transferability were used to describe various aspects of trustworthiness in the study.

CHAPTER 4. THE RESULTS OF THE STUDY

This chapter presents the results of the qualitative content analysis for the current study. The findings are grouped according to major categories based on the three broad areas derived from the following research aims: aim one, mothers' perceptions of externalizing behavioral problems in general; aim two, mothers' perceptions and understandings of ADHD; and aim three, Arab immigrant Muslim mothers' perceptions of the diagnosis and management of ADHD compared to the western cultural practices in diagnosis and management. The chapter will start with a summary of participant demographic data followed by detailed descriptions of each of the founded categories.

Demographic Characteristics

The following demographic data about the participants were collected during the interviews: age, number of children, age of children, level of education, employment status, country of birth, and length of stay in the U.S. (see appendix A) (See Table 9). Since one of the research aims is to compare Arab immigrant Muslim mothers' perceptions of the diagnosis and management of ADHD with western cultural practices in diagnosis and management of ADHD and externalizing behaviors, the researcher used the length of stay in the U.S. as an attribute to group responses and look for a pattern in the participants' responses. Length of stay was given three values: mothers who have been in the U.S, for 1–5 years (1–5 group), mothers who have been in the U.S. for 6–10 years (6–10 group) and mothers who have been in the U.S. for more than ten years (>10 group) (See Table 10).

Table 9. Participants' Detailed Demographic Characteristics by their ID Numbers.

Subject ID Number	Participant's Age	Number of Children	Age of Children in years	Level of Education	Employment Status
20111	32	4	3,5,9,11	High school diploma	Unemployed
20112	38	3	<2,5,6	College degree	Student
20113	29	2	<1, 5	High school diploma	Unemployed
20114	44	4	7,11,20,21	College degree	Unemployed
20115	31	3	2,4,6	College degree	Unemployed
20116	24	1	5	Some college	Unemployed
20117	35	2	<1, 5	Graduate	Unemployed
20118	39	4	9,12,15,16	Graduate	Student
20119	36	3	7,16,18	Some college	Unemployed
201110	39	1	9	Graduate	Student
201111	48	5	6,16,18,20,22	College degree	Unemployed
201112	34	3	3,7,8	College degree	Unemployed
201113	31	2	2,5	College degree	Unemployed
201114	46	4	6,8,11,13	Graduate	Full time
201115	35	3	2,9,11	College degree	Unemployed
201116	35	1	5	Graduate	unemployed

Table 10. Summary of Participant Demographic Data by Length of Stay in U.S. (*n*=16).

Length of Stay	Number of Participants	Age Description	Number of Children	Ages of Children	Highest Levels of Education	Employment Status	Country of Birth
1–5yrs group	5	Mean: 33.6 yrs. SD: 5.64 Median: 35 Range: 24–39 yrs.	Mean: 2 SD: 1.3 Median: 2 Range: 1–4	Mean: 9.3 yrs. SD: 4.71 Range: 2–16 Median: 9	Some college: 1 College degree: 1 Graduate*: 3	Unemployed: 4 Student: 1	Kuwait: 1 Egypt: 1 Jordan: 2 Palestine: 1
6–10 yrs group	6	Mean: 33.67 yrs. SD: 4.08 Median: 32.5 yrs. Range: 29-39 yrs.	Mean: 2 SD: 0.82 Median: 2.5 Range: 1–3	Mean: 5.17 SD: 2.21 Range; 2–9 Median: 5	High school diploma: 1 College degree: 4 Graduate*: 1	Unemployed: 4 Student: 2	Palestine: 2 Syria: 1 Sudan: 2 Libya: 1
> 10 yrs group	5	Mean: 41.2 yrs. SD: 6.87 Median: 44 yrs. Range: 32–48 yrs.	Mean: 4 SD: 0.7 Median: 4 Range: 3–5	Mean: 12 SD: 5.90 Median: 11Range 3–22	High school diploma: 1 Some college: 1 College degree: 2 Graduate*: 1	Unemployed: 4 Full-time employed: 1	Oman: 1 Kuwait: 1 Jordan: 3
Totals	16				High school diploma: 2 Some college: 2 College degree: 7 Graduate*: 5	Unemployed: 12 Students: 3 Full-time employed: 1	Egypt: 1 Jordan: 5 Kuwait: 2 Libya: 1 Oman: 1 Palestine: 3 Sudan: 2 Syria: 1

*Graduate: participant is enrolled in a graduate program or has a graduate degree.

Participants were on average, 36 years old, had three children, and had been living in the U.S. for ten years. Most of the participants were unemployed (75%), a few were students (19%), and one person was employed full-time (7%). For the highest level of education, the largest proportion of mothers had completed a college degree (44%); five mothers are either enrolled in graduate programs or have graduate degrees (30%), two mothers have completed some college (13%), and two mothers graduated from high school (13%), but received no formal education beyond that. The sample was diverse with regard to the country of birth, with the largest number of participants being from Jordan (30%), three mothers from Palestine (19%), two mothers from Kuwait (13%), two mothers from Sudan (13%), one mother from Egypt (7%), one mother from Libya (7%), one mother from Oman(7%), and one mother from Syria(7%).

Interview Data

Each interview was coded for categories and subcategories according to the study aims. The data are presented by the identified categories and subcategories. The attribute of length of stay in the U.S. was used to group the responses of the participants and look for response patterns.

Aim 1: Explore how Arab Muslim mothers describe and manage children who display externalizing behaviors (e.g., inattention, impulsivity, hyperactivity, oppositional).

For this aim, the researcher will start by introducing the category, specifying the subcategories under each category, and then present the data by each subcategory. After that, the researcher will present the data for each category by the length-of-stay-in-the-U.S. attribution.

The researcher used two vignettes (developed by the researcher in consultation with the literature and the two vignettes were validated by two experts from the researcher committee) to elicit information from the participants about their perceptions of children's behavioral problems (see Appendix B). The first vignette represented the behaviors of ADHD and the second vignette represented the behaviors of oppositional defiant disorder (ODD). The participants were blinded in terms of the name of the behavioral disorder, because the intention of the researcher was to elicit the participants' information about the exhibited behaviors in general and not for a specific disorder.

Five general categories were identified for aim 1: behavior descriptions, parental responses to the behavioral problems if noticed in the child, causes of the behavioral problems, triggers for seeking help, and sources of help.

Descriptions of Behaviors

First vignette:

The child in this vignette was described by the mothers as an active child, a child with abnormal behavior, a trouble-maker, has problems concentrating, normally behaved, ADHD, and displaying a lack of motivation. Those who described the behavior as abnormal were prompted on their definitions for the word *abnormal*: (I: refers to the investigator, P_x: refers to the participant's ID number). Of note, while the participants used he/she they were confirmed that the behaviors depicted in the vignettes were not gender specified.

I: What do you mean by abnormal?

P3: It's something [that] you know not all kids [do].

P7: You know he does not act like other children.

P8: …it's like not a typical behavior you would see from an 8 year old.

P11: … the behaviors in this case are not [common] to see from children.

Other mothers described the child as one who lacks motivation and needing to be told what to do all the time *"... this child needs someone to tell her what to do all the time, otherwise [the child] will not be able to finish their work".*

Two mothers referred to the behaviors as ADHD; one of the mothers has two boys who were diagnosed with ADHD, and stated *"...I will call it ADHD".* The other mother is a psychologist and described the child's behaviors in the vignette as representing the symptoms of ADHD *"... it looks like attention deficit disorder and hyperactive and difficulty concentrating on school work, followed by destruction in class routine".*

On the other hand, two mothers considered the behaviors normal, stating that all children act like the child in the vignette. For example, one mother considered these behaviors normal and stated, *"Maybe he is an active child, many children are just active, I mean for me I won't worry if my child acted like this".* Another mother added *"some kids are just active and all over the place."*

Mothers' Descriptions of Behaviors in the First Vignette by Years of Stay in the U.S.

Across the three groups, "active child" was the most reported term that mothers used to describe the behaviors exhibited in the first vignette, with five responses from the 1–5 and the >10 groups, and two responses from the 1–5 group. The term "trouble-maker" and the phrase "the child has problems concentrating" were reported across the three groups. Only one mother in the 1–5 group described the child as if the child lacked motivation and needed someone to tell him/her what to do and then direct the child through it. Moreover, two mothers in the same 1–5 group referred to the behaviors as normal and that all children behave like the child in the vignette. Two mothers in the group that had been in the U.S. for 6–10 years and two mothers in the group that been in

the U.S. for more than ten years used the term "abnormal" to describe the exhibited behaviors.

The term ADHD was only used by two mothers and both are in the >10group. One of those two mothers has two sons who were diagnosed with ADHD in the U.S., and both of these sons are on ADHD medication, so the mother was familiar with the term ADHD. The other mother is a psychologist (see Table 11).

Table 11. Participant Descriptive Responses of Behaviors from Vignette 1, Based on Years of Stay in the U.S. (*n*=16)*.

Length of Stay	Active Child	Child with Abnormal Behavior	Trouble-maker	Has Problems Concentrating	Normal Behavior	ADHD	Child Lacks Motivation	Total
1–5 group (*n*=5)	5	0	2	1	2	0	1	11
6–10 group (*n*=6)	4	2	3	1	0	0	0	10
> 10 group (n=5)	5	2	2	2	0	2	0	13
Total	14	4	7	4	2	2	1	34

*Participants could have multiple responses.

Second vignette:

The second case presented the behaviors characteristics of a child with ODD. Mothers' responses were grouped into five subcategories: spoiled, disrespectful, angry, disobedient, and temper-tantrum issues. One mother used Arabic words to describe the child from the vignette by saying *galel adab,* which means "lacks manners, not well-behaved, and disrespectful." Another mother used the Arabic term *mdala3*, which means

"spoiled." As a matter of fact, mothers considered these behaviors as contrary to the social norms expected of children in Arab cultures. For example, one mother stated

> P10: I think that this child is not behaving in a way that is expected from him by our society or by teachers or parents and he acts out to get things his way, which is not accepted in our culture.

Another mother stated, "*This child is arguing with his parents and with others*; *this is unacceptable in our norms."* Thus, mothers stated that these behaviors show a lack of respect and that by the child not obeying what he/she has been told to do, the child is being very rude and disrespectful by exhibiting these behaviors *"The child did not know how to respect others, especially her mom and dad, and this is very bad you know."* Another mother said, *"The child is rude or disrespectful to others or to his parents."*

Mothers also considered the child in the vignette as spoiled and getting his/her own way. For example, mothers commented that *"…like this child is getting his way and no one would stop them or correct their behaviors."* Another mother said, *"I don't know, I think him parents spoiled him, they give him whatever he asks for."* Other mothers considered the behaviors as temper tantrums. *"This child has temper issues and the child needs help, otherwise he will have problems."*

Mothers described these behaviors as normal if the child occasionally exhibited them. For example, one mother stated:

> P11: …many children display these behaviors in one way or another. Like my kids, sometimes they do not do their chores or they do not finish their homework because they do not want to do it and not because they are having a problem.

When she was asked to clarify what she meant by "sometimes," she gave examples of things that make her children act out occasionally (e.g., being tired, having a bad day, wanting something, or having difficulty in school).

Mothers' Descriptions of Behaviors in the Second Vignette by Years of Stay in the U.S.

Mothers in the three groups perceived the vignette behaviors as disrespectful and disobedient. Mothers in the 1–5 and 6–10 groups perceived and described the behaviors as demonstrative of a child who was "spoiled" because the child got his/her own way, with the parents giving the child whatever he/she asked for. However, mothers in the >10 group tended to perceive the behaviors as temper tantrum issues (Table 12).

Table 12. Participant Descriptive Responses of Behaviors from Vignette 2, Based on Years of Stay in the U.S. (n=16)*.

Length of Stay in U.S.	Spoiled	Disrespectful	Disobedient	Temper Tantrum Issues	Total
1–5 group (*n*=5)	4	5	4	1	14
6–10 group (*n*=6)	4	5	4	1	14
> 10 group (*n*=5)	0	4	4	4	12
Total	8	14	12	6	40

*Participants may have more than one response.

Mothers' Responses for How They Would Respond If Their Child Exhibited Problematic Behaviors

This category represents how mothers would respond to their children's behaviors if they behaved similarly to the children presented in the vignettes. During the interview, mothers highlighted a variety of parenting responses to the behaviors presented in the vignettes. The results are presented for the two vignettes together because the mothers' responses were similar regardless of vignette.

General categories of responses for how mothers would respond to problematic behaviors in their children include: punishment, communication, being more involved, using a reward system, work collaboratively with teachers, and ignoring the behaviors.

Punishment:

Mothers reported using various punishments if the child did not behave well. When mothers were asked about the type of punishment they would use in response to their child's behavior that are accepted by their culture, several responses were recorded. All mothers reported using time-outs and taking away privileges as punishments.

> P1: If he does not listen I will do some punishment, like I will send him for time out, no going with friends, no TV …
>
> P2: …if she liked going to the mall or watching movies or swimming I think I'm going to say no until she stop doing what she is doing, I will [also] use time out.
>
> P7: I think it is important to be consistent and take away some of the privileges, I will use time out as well…

Some mothers stated that they would spank and yell at their children while using other punishments if the child does not behave well. Other mothers reported that they would try other punishment methods (e.g., time-outs and taking away privileges) and if

those methods did not work, then they would use spanking and yelling to address their children's behaviors.

> P9: I may try to discipline them by taking away things, timeout, yelling, spanking and see [what] works with them
>
> P13: …take away things he likes or prevent him from doing things he likes to do, yelling, and spanking.
>
> P15: First I will try time-out, grounding, taking away stuff they like and if I have to, I might spank her/him or yell at her/him.

For the ODD vignette, mothers more frequently reported using punishment than for the ADHD vignette. Mothers thought that parents of such a child should be stricter with the child. For example one mother stated "*I think the parents of this child are spoiling him, so they have to be more strict and to punish him more if he behaved like this* [the child in the vignette]".

Communication:

Mothers across the three groups thought that communication would facilitate the process of changing the child's behavior because it allows the mothers to understand why the child is acting the way he/she acted. Mothers would then know how to respond to the behaviors appropriately. Also, by communicating with the child, the mother could give the child the opportunity to understand why he/she got punished, with the hopes that the same behaviors would no longer be repeated.

> P4: My first method would be to talk with them about their behavior and if they don't listen, then I will yell at them or I will send them to their room, and I have to at least take 5–10 min break away from them to figure out what to do with

them, and usually I ended up talking with them about the behavior and why I was upset with them.

P10:… and communicate with her over and over just to get her to know that she will not get her way and will not get what she wants and she needs to behave in [an] appropriate manner [and] politely.

P14:[I will] talk with my daughter several times and try to understand why she is always disturbing other kids. First thing I will do [is] just talk with my daughter.

Being more involved:

Being more involved in the child's life, helping with homework, organizing the child's environment, and involving the child in physical activities were all methods participant mothers would use to manage their children's behaviors if their children behaved as the child in the vignette. Mothers thought that by helping the child with his/her homework, the child would become less stressed, thereby affecting the child's behaviors positively. Also, mothers expressed their feelings about the importance of involving children with physical activities so they could spend time doing something they liked and thus ridding themselves of any extra energy they may have. The result: a child with good behavior. Other mothers emphasized the importance of organizing the child's environment in a way that helps him/her be more focused and calm so they will not act out.

P5: I will work with him and help them with their homework and stuff. So they will be more focused and they will not be frustrated if they have problems with their school work.

P12: If my child acted like that, first I'm going to try to involve him in some activities so he will take off all the extra energy he has and see how he will react.

> P16: I mean the mother can do some activities to organize the child's behavior and let [the child] be more focused, or she can rearrange his/her environment to make [the child] more focused and organized.

Reward system

Mothers reported using a reward system as a method of modifying problematic behaviors. One mother stated, *"I will use the reward process*. *If he does well, then I will reward him with something or if he did not do anything wrong I will also reward him with something."* Another mother described the process as *"the carrot and the stick,"* meaning she would entice the child to behave by offering rewards. She stated, *"*L*ike you know the carrot and the stick, that's what I will do, you know the reward system*; *if they [her children] do well I will reward them."*

Working collaboratively with the child's teacher:

Mothers reported the importance of having a connection with the child's teacher so they both can work collaboratively to help the child with the problematic behaviors. When mothers were asked to clarify why they would seek such collaboration with teachers, they explained that given the amount of time that students spend in the school with their teachers and based on what they assumed teachers would therefore know about children's nature and behaviors, they would be well-equipped in dealing with problematic behaviors.

> P3: I will try to find some kind of connection with the teacher, so that [the teacher] will always inform me about [any problematic] behaviors so we will be able to figure out how to help my child.

> P6: I will ask the teacher for help and I will ask if she notices anything [problematic behaviors] and if she recommends seeing a counselor or if there are any resources at the school I can use to help him.
>
> P7: … the parents need to do something to help [the child] and also the same for the school teacher, because the teacher is complaining about the child's behavior, so [the teacher] has to do something and collaborate with the family to help this child.
>
> P9: … the teacher spends so much time with the children in the school, so if I talk with the teacher she can tell me if there is anything wrong with my daughter's behavior or if there is anything I need to do to help her. And we can work together to help [the child].

Ignoring the child's behavior:

Two mothers reported that they would ignore the problematic behavior as a way to manage the child's behavior. The rationale behind the decision of ignoring the behaviors, as described by mothers, is that sometimes the child needs attention and if the mother does not ignore the behavior then the child will keep doing it again and again, but if the mother ignores it the behavior will go away.

> P5: I would ignore the child, actually. I figured out that by ignoring the behaviors the child will listen at some point. Otherwise, they will keep doing what they are doing.
>
> P6: I will not pay attention to him. I will ignore them for a while until they behave.

Mothers' Responses of How They Would Respond to Their Children's Behaviors if They Exhibited the Behaviors Depicted in the Vignettes, by Years of Stay in the U.S.
(Table 13)

Across the three groups, mothers reported using punishment to address the child's behaviors if he/she exhibited the behaviors depicted in the vignettes. Mothers in the1–5 and 6–10 groups reported using four techniques to punish a child: time-outs, taking away privileges, spanking, and yelling. However, no mother in the >10 group reported using spanking and yelling to punish a child because they thought that spanking and yelling would exaggerate the situation and make the behaviors worse. *"This will not help, and nowadays no one spanks or yells at the child because this will make the behaviors worse."* Also, all mothers in the third group believed that taking away privileges and time-outs were the best ways of dealing with any behavior.

Mothers across the three groups used the techniques of communication, being more involved, using the reward system, and work collaboratively with teachers, with the goal of modifying or eliminating negative behaviors. However, these techniques were mostly endorsed by the mothers in the >10 group as compared to the mothers in the 1-5 and 6-10 groups. Using the reward process was mostly reported by mothers in the >10 group, while mothers in the 1-5 group reported using rewards least.

Ignoring the child's behavior was endorsed by two mothers in the 1–5 group as a technique to solve a child's behavioral problem. No mother in the 6–10 and >10 groups used ignoring as a technique to modify behavior.

Table 13. Participants' Responses for How They Would Respond to the Child's Behaviors According to Their Length of Stay in the U.S. (*n*=16)*.

Length of Stay	Punishment	Communication	Being More Involved	Reward System	Work Collaboratively with Teachers	Ignoring	Total
1–5 group (*n*=5)	5	2	2	1	1	2	13
6–10 group (*n*=6)	6	2	2	2	2	0	14
>10 group (*n*=5)	5	5	4	4	4	0	22
Total	16	9	8	7	7	2	49

*Participants may have more than one response.

Causes of the Externalizing Behaviors

Mothers reported several causal factors for the behaviors depicted in the vignettes. Among these factors were attention-seeking, school difficulties, and home environments. The results will be presented for each vignette separately due to the differences in participant mothers' responses for each vignette.

First Vignette

Seeking attention:

All mothers agreed that the child would exhibit the behaviors depicted in the vignette to get the attention of parents, teachers, and others as well.

> P1: I think as a parent I can tell when my child is acting out just to get my attention or to get other people's attention.

P16: He just needs more attention from the people around him and wants to have all the attention, even if it's in wrong way, so he is acting like this because [the child] needs attention.

A mother of four children elaborated on the child's attention-seeking behaviors in the vignette. She talked about the relationship between the teacher's attention and the externalizing behavior in the child, mentioning that children may act out to get their teacher's attention.

P4: He needs more attention from the teacher, some kids need that, they like the teacher to be with them and stay with them. I think if the child sees the teacher paying attention to another kid, he will start acting out and start to hit other kids.

School difficulties:

Besides getting the teacher's attention, two mothers elaborated upon having difficulties in homework or problems in school like being bullied or simply having a bad day as reasons for having bad behaviors, as they called them.

P8: Sometimes, they act out because there is something bothering them, like in school, maybe some children [are] bothering them, or the teacher is not paying much attention to them, or maybe they [are] just having difficulties in their school homework, so they act out because of that.

P14: Maybe [the child] is bullied at school so I would go and ask in school if he is having any problem, because I believe that the child does not act like this unless there is something wrong and something making him acting like this.

Home environment:

Mothers discussed their thoughts about negative relationships between a mother and father, and the effect of such a relationship on children's behaviors. Mothers thought that a bad relationship between a mother and father might impact a child's behavior as well as result in the unfair treatment of children in the house.

> P9: It's something coming from home, I mean the child has something wrong at the home environment and most likely no one pays attention to the child, because they are busy working on their problems.
>
> P15: Some kids act out because they are having problems at their home, maybe there is a problem between the father and the mother, or the home environment is not stable.

Mothers' Responses to the Causal Explanation of Externalizing Behaviors as Depicted in the Vignette, by Length of Stay in the U.S.

Home environment was equally endorsed by mothers across the three groups as a cause of the exhibited behaviors in the first vignette. School difficulties were most commonly introduced by mothers in >10 group, followed by mothers in 6–10 group. However, only one mother in the 1–5 group and two mothers in the 6–10 group mentioned school difficulties as a cause for the child's behaviors.

Seeking attention was mainly discussed by mothers in the 1-5 and 6-10 groups as a cause for the child's behaviors. However, mothers in the >10 reported seeking attention less often compared to 1-5 and 6-10 groups (Table 14).

Table 14. Causes of the Behaviors as Reported by Mothers Based on Length of Stay in the U.S. (*n*=16)*.

Length of Stay in U.S.	Seeking Attention	School Difficulties	Home Environment	Total
1–5 group (*n*=5)	5	1	5	11
6–10 group (*n*=6)	6	3	5	14
>10 group (*n*=5)	2	5	5	12
Total	13	9	15	37

*Participants may have more than one response.

Second vignette

Parental blame:

For the second vignette, mothers attributed the child's defiant behaviors to parents for not knowing how to raise their children, not teaching them good manners, and possibly spoiling the child through a lack of discipline, ensuring the child gets his/her way whenever they wanted to do or have something. Also, mothers commented about the child in the vignette not being disciplined when he did something wrong.

P3: I think his parents spoiled him; they give him whatever he asked for.

P15: I think he needs someone to discipline him and tell him what is wrong and what is right.

P16: The child is not disciplined…the parents need to do something.

Four mothers would blame themselves for their child's behavior if their child exhibited the behaviors depicted in the vignette. Mothers stated that perhaps parents did not spend enough time with their children:

> P2: I will keep thinking that I might have done something wrong and that is why my child is acting like this. Maybe I'm not paying attention to her or I'm not involved in their life because I'm not spending time with her.

Another mother stated that she would blame herself because she would think that she is not fulfilling her role as a mother: *"I will feel guilty because I did not raise him well and I will blame myself because I did not fulfill my role as a mother."* More specifically, mothers emphasized that parents may cause these behaviors by not giving a child enough attention, by failing to teach good manners, by displaying inappropriate behaviors in front of a child, by failing to discipline, and by spoiling a child by giving the child whatever they want.

Home environment and seeking attention:

Home environment and seeking attention were causal explanations suggested by mothers for both the two vignettes. Mothers discussed their thoughts about the relationship between the mother and the father and the effect of a bad relationship can have on a child's behaviors. *"I think the parents are too busy with their problems, and that is affecting the child's [behavior]."* Also, mothers commented that a child might act like the child in the vignette because the child wants the attention of parents, teachers, or other people. *"…there is no attention paid to the child from his parents, so he is acting like this because he needs attention…"*

Mothers' Responses for the Causal Explanation for the Depicted Behaviors in the Second Vignette, Based on Their Length of Stay in the U.S.

Mothers across the three groups attributed the negative behaviors to a bad home environment, parental responsibility or blame, and to attention-seeking factors. However,

seeking attention and blaming parents for the child's behavior were stated less frequently by mothers in the >10 group (Table 15).

Table 15. Causes Attributed to the Behaviors in the Second Vignette, Based on Participant Length of Stay in the U.S. (*n*=16)*.

Length of Stay in the U.S.	Parental Responsibility	Seeking Attention	Home Environment	Total
1–5 group (*n*=5)	5	5	5	15
6–10 group (*n*=6)	4	5	6	15
>10 group (*n*=5)	2	3	5	10
Total	11	13	16	40

*Participants may have more than one response.

Triggers for Seeking Help

In this category, the researcher will discuss mothers' responses about the factors that would lead them to seek help for a child's behavior (mothers might ask for help from family, friends, school services, physician, and professional). The researcher will combine responses for this category to the two vignettes because the mothers' responses were the same for both vignettes.

Mothers most often reported that they would deal with the child's behavior themselves until a certain point was reached where they felt they would no longer be able to handle it, and then they would go for help—this point was coded as a "trigger." Several triggers were reported by mothers and were subcategorized as follows: child's developmental stage, consistency/persistence of the behavior, the mother's inability to control the behavior, and interference of the behavior with the child's academic achievement. Mothers considered all these triggers when deciding to seek help for the child.

Child's Developmental Stage

The developmental stage of the child was a determining factor in mothers' decisions for seeking help for the child. Mothers reported that they could tolerate the child's behavior to a certain developmental stage. Also, mothers reported that they would consider it normal for children to act out or to have externalizing behavior until a certain developmental stage had been reached.

> P1: I will keep trying and trying [dealing with the child's behaviors] until he starts to behave well. It depends on the child's age too.
>
> I: How do you mean?
>
> P1: If the child is young I think I can handle it and if the behaviors are not happening all the time and everywhere, like if he is angry and argumentative sometimes I think I can deal with it….but if he is like older, let say like ten years or older, no I would not accept these behaviors coming from him because at this age the child is supposed to know better and he is supposed to understand the consequences of her/his behaviors, so I would assume that there is a big problem.
>
> P14:…for sure they [people/parents] tolerate these behaviors from a child who is like five or something but not from a teen-ager, like by teen age the person becomes more responsible and mature and the expectations are different for them.
>
> P15: Actually for a seven-year-old it's not normal to have this behavior [all the time], so I think it's not something that the parents should ignore or live with.

Consistency/Persistence

Consistent and persistent externalizing behaviors were other factors that triggered mothers to ask for help, especially if the behaviors seemed to get worse. The following quotes demonstrate these ideas:

P2: …if it is [the behaviors] persistent and I did not know how to deal with it, then I think I don't mind taking her to her physician.

P7: … but if the behavior is getting worse I would seek advice from my family and if nothing works I will go to the school or the physician.

P9: This child has a problem, because obviously he cannot control their behaviors and it seems that these behaviors are happening all the time and in school and at home, you know he is active, distracted, and aggressive in school and at home.

In order to clarify what mothers meant by "all the time," they were asked to give an example of the difference between a child acting out all the time and a child acting out occasionally. In response, mothers talked about the circumstances where they would not be concerned if their child occasionally acted like the children in the vignettes. Specifically, they talked about the child being hungry or bored, if he/she was having a bad time, or if he/she needed a nap. The mothers used their experiences with their own children as examples to demonstrate what they meant by occasional behavior.

I: Can you give an example of a child who is acting like this [like the child in the vignette] all the time and a child acting like this [like the child in the vignette] sometimes?

P1: For a child who acts like this sometimes, maybe if the child is hungry, or having a bad day at home or in school, maybe if something is bothering him. So you can tell if the child is always like this or it's just happening because something is bothering the child.

P3: Sometimes any child may act like this, but if its consistent and he always acts like this [like the child in the vignette] I think the child is having a problem. So if he acted like this once a day I will not consider it a problem. Like if it's nap time.

Mothers' Inability to Control the Behaviors

A mother's inability to control a child's behavior was another trigger for seeking help. They considered this inability as a motivation for them to seek help for the child, because they thought that if the child was left without intervention, the behavior would worsen.

> P5: When I feel that I cannot control him, and I used punishment and it does not work, then yeah, I will go for help.
>
> P13: I will try to deal with it, but if I could not help it then I will take her to the doctor.
>
> P14: [I]t depends, if it [the behavior] gets bad I will [seek help], by bad I mean if this starts to affect his school and his achievement, if he started to hit other kids and I could not handle it anymore yeah.

Academic Achievement

The interference of the problematic behavior of the child with his/her school/academic achievement was reported among all participants and considered a reason to seek help. All mothers considered the behavior problematic when it started to interfere with a child's academic achievement. Mothers were concerned about children's academic achievement because they thought if the child did not do well or failed in school, he/she would not have a good life and would not be successful. One mother specifically stated that she would definitely seek help for the child if he/she was demonstrating problematic behaviors in school:

> P1: Like it [the behavior] gets him in trouble at school, and may be preventing him from doing the schoolwork. I mean he will not be a good student and he will not get good grades and that is not right.
>
> P2: I'm worried that she will fall behind in school and she will not have good grades.
>
> P3: If it [the behavior] gets bad I will [seek help], by bad I mean if this starts to affect her school and her achievement.

Mothers reported the importance of education for children. Mostly, mothers reported that the importance of education for them comes from the fact that children without education will have difficulties finding decent jobs and living good lives.

> P12: It is important for the child to have a good education so they can have a better life and a better job, especially with what is going on in this world.
>
> P7: I will talk with the child about the importance of going to school and learning so they can graduate from school and study in the university and be able to have a decent job after they graduate, and otherwise they will not have a good job or a good life.

Moreover, another mother spoke specifically about the importance of education in Arab culture:

> P5: It's very important for the child to have no problems at school; otherwise, they will have bad grades and that will affect their academic achievement and that is not good. You know we Arabs like for our children to be educated and be successful and I think all parents would like that, too.

The Child's Temper Tantrum

Temper tantrums were not mentioned as often as other triggers, but they were of concern to the mothers. *"It's* [the child's] *tantrum that I would be worried about."* Mothers' concerns about temper tantrums were explained by their worries that children who have temper tantrums might get angry easily and "*might hurt themselves or other children."*

Mothers' Responses by Their Length of Stay in the U.S.

Each of the reported factors was considered when mothers were making a decision to ask for help. The least reported trigger was the child's temper tantrum in the second vignette (see Table 16).

Table 16. Mothers' Responses to the Triggers for Seeking Help for the Child's Behaviors, Based on Their Length of stay in the U.S. (*n*=16)*

Length of Stay in the U.S.	Child's Developmental Stage	Consistency/ Persistence	Interference with Academic Achievement	Inability to Control the Behaviors	The Child's Temper Tantrum	Total
1–5 group (*n*=5)	5	5	5	5	1	21
6–10 group (*n*=6)	6	6	6	6	2	26
>10 group (*n*=5)	5	5	5	5	3	23
Total	16	16	16	16	6	70

*Participants may have more than one response.

Sources of Help

Mothers differed in where they would seek help if their children were to exhibit the behaviors depicted in the vignettes. The sources of help were grouped into four subcategories: family and friends, school services, physicians (pediatricians/family physicians), and professional mental help (psychiatrist/psychologist). Mothers reported that they would seek help from family, friends, and school services first. If these sources did not help then mothers would seek help from the physician. The results will be presented separately for each vignette.

First Vignette

Family and Friends

Mothers reported that they would seek help from family and friends if the triggers described previously (persistent, out-of-control behaviors, interference with academic achievement, developmental stage, and the child's temper tantrum) were present. Mothers often stated that family members and close friends would understand such a situation and would help the mother to deal with the child's behaviors.

> P5: To be honest, I will ask someone else to guide me in how to deal with these behaviors, like my family [and] my friends.
>
> P9: I might ask people who are older than me for their advice on how to deal with him, like my mom or my sisters.
>
> P10: … and trying to involve my family especially my mom and sisters and their kids.

School Services

Mothers reported that they would also go to their child's school and talk with teachers about how they could benefit from school resources in managing their children's behaviors, asking that teachers work with them to help with the child's problems.

> P5: … then I will go to the school and talk with the teacher and see if my kid is acting like this [like the child in the vignette] at school too, and then ask the teacher for help.
>
> P8: … I would go to the counselor and the teacher in the school and talk with him about it.
>
> P11: I think here in the U.S. they have school counselors, so parents have to talk with these people [the school counselors], so they can figure out how to help this child.

Interestingly, even though mothers did not know what a counselor in the school was or how he/she could help with the child's behavioral problems, mothers mentioned consulting the counselors in schools. Mothers were asked if they had ever had a situation where they desired to talk to or see a counselor in their children's school, and they all answered no, except for one mother (the psychologist). Mothers reported that they heard about the school counselor from their friends here in the U.S. The one mother who had had the experience of consulting the school counselor mentioned that whenever she had problems with her children's behaviors she would go to the school counselor to have the child evaluated and to get advice from the counselor on how to deal with such behaviors. *"*B*ecause now we are in the States, I will go to the school counselor, you know even now whenever I have a problem with my children I go to the counselor in their school and ask for help."*

Mothers were asked to clarify why they would go to the school for help. They reported that their children spend the majority of their time in the school with their teachers. Therefore, for the mothers, the teachers represent a source of information for the parents about their children's behaviors and a source of information about the availability of other resources in the community that might help in modifying children's negative behaviors.

> P3: You know children spend so much time at school and the teacher is the first one to notice any distracted behaviors or any other problems with the child, so I would go and talk with her [the teacher] and see if they offer any advice or if they refer me to someone else to talk to…
>
> P7: I think the teacher can refer me to someone [to talk to] or she [the teacher] can refer me to resources where I can get help, also, the teacher and I can work together to help my child.

Physician (pediatrician/ primary [family] physician)

Mothers stated that they would seek help from a pediatrician or primary physician if the mother tried the other approaches and nothing worked to modify the child's behavior. *"I will try to deal with it, talk with family, and I will go to the school for help but if nothing helps, then I will take her to the doctor."* Also, mothers reported going to a physician to seek an evaluation and assessment for a child as a means of determining if there was a problem with a child's behavior. *"if nothing worked I might talk with his pediatrician and ask him to evaluate my child and advise me."*

Seeking Professional Mental Health Help

Mothers were asked if they would seek help from a psychiatrist and/or a psychologist. The researcher informed the mothers that for the purposes of this study, "professional" referred to a trained psychiatrist or psychologist. It is worth noting that

none of the mothers knew the difference between a psychiatrist and a psychologist, except for the one mother who is a psychologist. The participants were asked if they would seek professional help for their children if they exhibited the behaviors presented in the vignettes. Some mothers reported that they would not seek professional help unless they were advised to do so by the school teacher or counselor, or by the primary physician or pediatrician. Some mothers were hesitant to seek help from a psychiatrist or a psychologist.

> I: Do you think that this child needs professional help?
> P1: …no, but if the pediatrician recommend seeing a psychologist or a psychiatrist I would go and see them.
> P5: I would go for a psychiatrist or a psychologist if the physician or the teacher recommended that, I have no problem with that [going to the psychiatrist/psychologist]. I want the best for my child.
> P6: I think no, I mean the child is just having problems with the behavior that's all and as a parent I can work with him to correct it you know…
> P8: I don't think so. It's just his behavior that needs to be corrected, and I think with the help from the teacher or the physician, I can do some modification for the behavior.

Interestingly enough, mothers discussed that if they were referred to those professionals, they would go because they are here in the U.S., but if they were in their home countries they would never think of taking their child to a psychiatrist or a psychologist, even if they had been referred. When the researcher asked one mother about the kind of help she would seek for the child, she stated that *"…because I'm here* [in the U.S.], *if my physician told me that I needed to see a psychiatrist or a psychologist I think I would go but back home…no way…"* When she was asked to clarify her

response, she emphasized that back home (Jordan) people/children do not seek help from a psychiatrist or a psychologist because people will stigmatize them, bringing shame on the family. For instance, one mother stated:

> P6: Well, this [going to the psychiatrist/psychologist] will affect the way they [people in the child's environment] look at the child, it will affect the child when he goes to school, or wants to apply for a job. And no one would want to be around him, and they will look low at our family.

Moreover, when the mothers were asked to clarify why they would seek professional help in the U.S. but not in their home countries, they rationalized their responses by saying that in the U.S. it is common for people to go to a psychiatrist or a psychologist when they needed to and no one would interfere with that or consider it a shame. However in their home countries it would be considered a shame and bring dishonor to the family if one member is seeing a psychiatrist or a psychologist.

> P16: Here [in the U.S.] it is easier to go to a psychiatrist or a psychologist because it is not perceived as shame; it is the opposite, people here would go to these professionals for several reasons. Sometimes it is just because they feel down or something, no one will make fun of the child if he is seeing those professionals [psychiatrists/psychologists] because everyone thinks that it is not shame and it is something like going to a physician for a cough or something.

Four participants immediately answered that they would consult a psychiatrist or a psychologist to help with the child's behaviors. *"…I will just go to someone who can really help me, like* a *psychologist or psychiatrist."* Another mother stated that she would not hesitate to go to a psychiatrist or a psychologist for help. *"No, not at all, I will not*

hesitate to go if this will help my child and get her to be a good child." Another mother reported that because the child cannot control his/her behavior she would go and seek help from psychologist or psychiatrist. *"… I would take her to* a *professional*. *This is how I would respond to it, because part of it I think is not in her hand*. *I mean she cannot help it."*

Mothers' Responses, Based on Their Length of Stay in the U.S.

Mothers in groups 1–5 and 6–10 reported that they would seek help from their family, friends, and school services first. In these two groups, mothers explained that they would ask their mothers, older sisters, or close relatives and friends for help if they could not control their children's behaviors. Seeking help from family was not reported by mothers in the >10 group. Mothers across the three groups reported seeking school services help to modify the child's behaviors.

With regards to seeking help from a physician (general physician, family physician, pediatrician), mothers across the three groups reported that they would seek the physician help if they tried other approaches and nothing worked.

In terms of seeking professional help for a child's behaviors, the responses for the mothers in the 1–5 and 6–10 groups were all consistent as mothers reported that they would not seek professional help unless they have been advised to do so by the school teacher and/or counselor, or by the primary physician or pediatrician. Moreover, these mothers were concerned about seeking help from a psychiatrist or a psychologist because of the perceived stigma associated with seeking mental health services. However, they mentioned that if they were advised to seek help from those professional while living in the U.S. they would not hesitate to do so.

The responses in the >10 group were interesting because four participants immediately answered that they would consult a psychiatrist or a psychologist to help

with the child's behaviors. Also, they stated that they wanted the best for their children regardless of the type of the resource. However, one mother in the >10 group was concerned about seeing a psychiatrist or a psychologist without having first been referred by a primary care physician. When she was asked to clarify her thoughts, she said she was just concerned and she did not give a clear answer. It is worth noting that no one from the three groups knew the difference between a psychiatrist and a psychologist, except for the mother who is a psychologist (see Table 17).

Table 17. Mothers' Responses to Sources for Help from Vignette One, Based on Length of Stay in the U.S. (*n*=16)*

Length of stay in U.S.	Family and Friends	School Services	Physicians (pediatrician/family physician)	Mental Health Professionals (psychiatrist/ psychologist)	Total
1–5 group (*n*=5)	5	4	3	0	12
6–10 group (*n*=6)	6	5	4	0	15
>10 group (*n*=5)	0	5	4	4	13
Total	11	14	11	4	40

*Participants may have more than one response.

Second Vignette (ODD behaviors)

Mothers primarily reported that they would use parental strategies to modify a child's behavior, such as taking away privileges, time-outs, and spanking and/or yelling. They also reported using communication in order to talk with the child and figure out the reasons behind the behaviors, as well as explaining why the child was being punished for

such behaviors. Also, mothers endorsed asking family and friends for help. Mothers talked about using school services in order to modify behaviors. When asked about professional help, mothers stated that they would seek the help of mental health professionals or physicians only if the child's tantrums were uncontrollable.

Mothers' Responses, for the Second Vignette Based on Their Length of Stay in the U.S.

In response to the second vignette, all mothers across the three groups discussed using various parenting strategies besides seeking help from their families and close friends. They also reported seeking the assistance of school services. On the other hand, mothers in the 1–5 and 6–10 groups did not report using physicians or professional help to treat the child's behaviors. In the >10 group, mothers reported a minimal use of professional and physician help for the exhibited behaviors. Mothers thought that the child's behaviors were more manageable by the parents and that there was no need for professional help (see Table 18).

Table 18. Mothers' Responses to Sources of Help from the Second Vignette, Based on Their Length of Stay in the U.S. (*n*=16)*

Length of Stay	Parenting Strategies	Family/Friends	School Services	Professional and/or Physician	Total
1–5 group (*n*=5)	5	5	3	0	13
6–10 group (*n*=6)	6	6	3	0	15
>10 group (*n*=5)	5	5	4	3	17
Total	16	16	10	3	45

*Participants may have more than one response.

Aim Two: Examine Arab Immigrant Muslim Mothers' Understandings and Perceptions of an ADHD Diagnosis

This aim was examined by using a checklist of 18 behaviors that were adapted from the DBRS, as these items closely resemble the DSM-IV criteria of ADHD symptoms. The behaviors were chosen in consultation with the same two committee members who were consulted in the development of the vignettes (see Appendix C). Mothers were blinded in terms of the disorder name that correlated with the behaviors exhibited until the researcher started to ask the participants about ADHD specifically (see Appendix C for interview guideline). For this aim, the researcher will start by introducing the category, specify the subcategories under each category, and then present the data by each subcategory. After that, the researcher will present the data for each category by the length-of-stay-in-the-U.S. attribution.

Mothers were asked to discuss their thoughts about the meaning of each behavior and how they would label it. Mothers' responses were grouped into seven categories: mothers' understandings and descriptions of ADHD symptoms, parental responses to the behavioral problems if noticed in a child, causes of the behavioral problems, triggers that would prompt seeking help, sources of help, mothers' information about ADHD, and mothers' attitudes toward treatment modalities.

Mothers' Understandings and Descriptions of ADHD Symptoms

In order to elicit information about mothers' understandings and perceptions of ADHD, mothers were asked to share their understandings and the meanings of each listed behavior on the behavioral scale. In terms of mothers' understandings of ADHD symptoms, mothers did not experience difficulty understanding the signs and symptoms

of ADHD, except for the meaning of one symptom: "Fidgets with hands or feet or squirms in seat." Two mothers from the 1–5 and the 6–10 groups initially commented that they were unclear what the words *fidget* and *squirm* meant and asked for clarification in order to be able to respond. Even when the researcher translated the word *fidget* into Arabic, mothers still did not understand the word. So the researcher explained the statement using an example of a child displaying this behavior; after that, mothers were able to answer with ease.

Mothers' descriptions of the behaviors listed on the checklist are grouped into six subcategories: inattention problems, hyperactivity, laziness/carelessness and lack of motivation, anxiety problems, rudeness and disrespect, and normal behaviors.

Inattentive Problems

Mothers often used the terms *focus problem*, *cannot concentrate*, and *attention problem* to describe the following behaviors: Fails to give close attention to details, has difficulty sustaining his/her attention in tasks or fun activities, and is easily distracted. For example, one of the mothers said *"…this child cannot focus."* Another comment was, *"This child has problems in his/her attention; I mean the child cannot concentrate."*

Hyperactivity Behaviors

Mothers used the terms *hyperactive"* and *"has extra energy"* to describe the following symptoms: Leaves his/her seat in the classroom or in other situations in which seating is expected, and seems on the go or driven by a motor. One of the mothers said, *"This child is very active."* Another mother said *"…this child has lots of energy."*

Carelessness and Lack of Motivation

The following symptoms: Doesn't follow through on instructions and fails to finish work, avoids/dislikes or is reluctant to engage in work that requires sustained mental effort, does not listen when spoken to directly, loses things necessary for tasks or

activities, and has difficulty organizing tasks and activities were referred to by the mothers as *laziness, carelessness,"* and *lack of motivation.*. One of the mothers stated, *"I have children like this and I know they are just too lazy to do their work."* Other mothers added, *"I think if you stimulate this child he will be ok, I think the child needs motivation."*

Anxiety Problems

Mothers described the following behaviors: Seems restless and fidgets with hands and feet or squirms in seat, as if the child has anxiety problems that interferes with the child's ability to concentrate and focus. For example, one of the mothers reported, *"…this child is having anxiety issues."* Another mother added, *"…I think this child is under stress, it is a form of anxiety problem."*

Rudeness and Disrespect

The symptoms "interrupts or intrudes on others" and "does not listen when spoken to directly" were perceived by mothers as signs of *rudeness* and *disrespect*. One of the mothers commented about these two behaviors, *"… this is not good, I mean…this child is very rude, he does not respect the others and this is bad…"* Another mother said, *"If my child did this I would be embarrassed because it is very rude to do this."*

Normal Behaviors

Often mothers described such behaviors as "talks excessively," "has difficulty engaging in leisure activities or doing fun things quietly," and "has difficulty waiting turn" as normal behaviors because all children have these behaviors. For example, one mother said, *"All children are like this, I mean my daughter is the most talkative person in the world and she is not impatient,"* and another added, *"When you mentioned these behaviors you reminded me of my kids…because they do the same thing…"* Additionally,

the behavior "blurts out answers before questions have been completed" was perceived by mothers as a normal and positive behavior, as it was considered a sign of intelligence.

> P5: …the child is smart and energetic. I used to be like this when I was a child, I was very competitive and I was studying a lot and I wanted to show the teacher that I can answer all the questions but that upset my classmates a lot.

Overall, mothers reported that each one of the listed symptoms was not a problem by itself. Rather, mothers became concerned if the child is occasionally having all or most of these behaviors. So the symptoms together would trigger the mother's attention for a possible problem, along with other triggers (interferes with the child's academic achievement, happens all the time and everywhere, and the child's age). Those triggers will be subsequently described.

Mothers' Understandings and Descriptions of the Listed Behaviors, by Length of Stay in the U.S.

There is no pattern of responses based on length of stay in the U.S.

Parental Responses for the Behaviors Listed on the Checklist

This category represents how mothers would respond to their children's behaviors if they exhibited similar behaviors as presented on the checklist. During the interview, mothers highlighted a variety of parenting responses to the behaviors presented on the checklist. General categories of responses for how mothers would respond to the listed behaviors if the child exhibited these behaviors are as follows: punishment followed by communication, being more involved, using a reward system, and working collaboratively with teachers. Mothers' responses under this category are the same as the

mothers' responses to the behaviors depicted in the first vignette (ADHD vignette). Of note, till this point mothers were blinded about the disorder name.

Punishment

Mothers discussed using several ways to punish a child if he/she exhibited the behaviors listed on the checklist. Taking away privileges and time-outs are examples of methods mothers would use to discipline a child for not behaving well. Mothers also considered disciplining a child if the child had not completed his homework or any assigned tasks. For example, one mother said, *"…I will use time-out and no TV, no going outside with friends…"*

Interestingly, no mother reported using physical discipline as a method for modifying the child's behaviors. As a matter of fact, one mother reported that spanking the child or hitting him/her will make the behaviors worse. *"…I think if this child [who has ADHD] got spanked or hit, he will behave more badly and he will become more stubborn…"* This was different from what they stated when they talked about the behaviors depicted in the ADHD vignette.

Communication

Communicating with the child was another method the mothers were willing to pursue in order to understand why a child was acting the way he did. Also, by communicating with the child, the mother could give the child the opportunity to understand why he got punished, with the hopes that the same behaviors would no longer be repeated.

> P3: I will talk with my child, because I want to know why he acted the way he did…I will try to explain to her the consequences of his/her behaviors and why he was punished…

Being More Involved

Another strategy mothers would use to modify a child's behaviors is becoming more involved with the child's schoolwork and organizing the child's environment so he/she would be better able to focus and concentrate.

> P6: …for children who are like this [exhibiting the behaviors listed in the checklist], they need more organization so they can finish their work and focus more. I mean the parents can help by spending more time with the child, organize his/her things, helping them with their home works, maybe that would solve the problem.

These strategies mainly focused on ways mothers would use to facilitate the child's completion of tasks and being more organized. Specifically, mothers articulated that children with these behaviors needed more assistance in order to complete their tasks, including their school homework, and that they need more structure and organization in their daily routines.

Using the Reward System

Another parental strategy reported by mothers to modify a child's behavior is using a reward process. Mothers thought that a process including rewards would keep a child stimulated so that he/she could keep up good work.

> P15: If the child behaved well, it is important for them to be rewarded for their behaviors, so they would know that if they behaved well they will get something good, otherwise they will be punished…

Work Collaboratively with Teachers

Besides the other techniques that mothers would use to modify a child's behaviors, mothers reported that they would work collaboratively with teachers in order to modify the child's behaviors. Again, as for the behaviors depicted in the ADHD vignette, mothers elaborated on talking with teachers frequently and asking them to communicate any related information about the child's school tasks and the child's behavior inside the classroom regularly. When mothers were asked to clarify why they would want to work collaboratively with teachers, they referred to the fact that children spend most of their time in school with teachers. Thus, the teacher will be able to notice if the child is having problems in the classroom so he/she can inform the parents. Therefore, both teachers and parents need to work together to figure out the child's behaviors. Also, mothers discussed the teachers' responsibilities in teaching children and helping them in order to prevent any academic problems that may be caused by the child's behavior. Further, mothers talked about teachers as being sources of information for mothers about available services to help with the child's behaviors. Furthermore, mothers talked about their thoughts that teachers are responsible for managing the children's behaviors to prevent the consequences of the bad behaviors on the child's academic achievement.

> P2: We [mother and teacher] have to work together in order to figure out why the child is behaving this way and to find ways to help this child.
>
> P5: …the teacher can help by keeping me informed about the child's behaviors, and if the child is doing well academically.
>
> P7: I will ask the teacher for help I know they [the teachers] can tell if there is something wrong with my child, because they spend so much time with them[the children] in the school.

P8: …it is the teacher responsibility to teach the child and prevent any consequences for the behaviors…

Mothers' Responses, Based on Length of Stay in the U.S.

Examination of mothers' responses in the three groups revealed no remarkable differences in terms of how they would respond to the ADHD behaviors. All mothers across the three groups emphasized the importance of using some parenting strategies in order to help in modifying a child's behaviors. Moreover, across the three groups, mothers elaborated on the importance of working collaboratively with teachers to address the behaviors of ADHD so that the child's academic achievement would not be affected as a consequence of the child's behaviors (see Table 19).

Table 19. Mothers' Responses of How They Would Respond to the Child's Behaviors Based on Length of stay in the U.S. (*n*=16)*

Length of Stay	Punishment	Communication	Being More Involved	Reward System	Work Collaboratively with Teachers	Total
1–5 group (*n*=5)	5	4	5	4	4	22
6–10 group (*n*=6)	6	5	5	5	6	27
>10 group (*n*=5)	3	5	5	5	5	23
Total	14	14	15	14	15	72

*Participants may have more than one response.

Causes of ADHD Behaviors

Several causal explanations of ADHD behaviors were reported by mothers in this study. One mother reported a lack in neurotransmitters as the cause of the behaviors but she was unable to name the neurotransmitters that she thinks would cause the behaviors. However, this mother did not think that the brain would be affected as a result of the neurotransmitters. Thus, she did not consider brain problems as a cause for ADHD behaviors.

> P1: I think it is [ADHD] caused by lack of some chemical transmitters. I cannot blame the child or the mother or anyone.
>
> I: So you think that ADHD is caused by lack of chemical transmitters in the brain?
>
> P1: Yes.
>
> I: What do you mean by chemical transmitter?
>
> P1: I don't know names, but it's [the neurotransmitter] something in the brain as I heard on the TV.
>
> I: You said that ADHD is caused by lack of chemical transmitters in the brain, so do you think that the lack of the transmitters would affect the brain function?
>
> P1: No, I don't think so.

Another mother attributed the behaviors to some kind of vitamin deficiency:

> P10: Sometimes children have a vitamin deficiency that makes them act like this…. Like, I heard that kids with iron deficiency and vitamin K deficiency they lack concentration and sometimes they might look tired…so sometimes these things affect the child behavior.

Another causal factor reported by two mothers were eating too much sugar and watching too much TV:

> P11: … sometimes food [causes ADHD], like if I give the child so much sugar the child will be hyperactive and he will lack concentration, and if I let my child watch too much TV this will affect his/her concentration and the child will not be able to do the homework.
> P4: I heard that too much TV could cause these behaviors. Also, I heard that if the child eats lots of sugar then he will be extra active.

One mother explained that the behaviors are a result of a combination of environmental and genetic factors *"… I would say it's a combination of environment and genetic…"* but she was not able to give details when she was asked to clarify her answer. She mentioned that she just heard that from the TV. The environmental factors were explained as living in a poor neighborhood.

Another causal factor for the ADHD behaviors, as reported by the mothers, was the home environment, when there are problems inside the home. This causal factor was reported by mothers for the behaviors depicted in the ADHD vignette. Examples of such situations include problems between the mother and father, the child being maltreated at home, or having so many siblings the mother is unable to give adequate attention to everyone or even spends time with each child. For example, one mother said:

> P16: …or maybe the parents are not spending much time with their children so they do not understand how they think and act. You know I think also because sometimes the parents are not good or there are so many problems inside the house that makes the child act weird.

Seeking attention was also reported by mothers as a cause for the ADHD behaviors. This cause was explained as if the child was not getting enough attention from the parents or teachers, so the child starts acting out to get other people's attention. For instance, one mother said, *"…and when he is acting like this [ADHD behaviors] I think the child needs more attention, so maybe from the mother and the father."*

Only two mothers acknowledged ADHD behaviors as a mental health problem, the mother with the two sons already diagnosed with ADHD and the psychologist. The other mothers reported that these behaviors were not attributed to problems in the child's brain and that was why they did not consider ADHD as a mental health problem. Mothers often reported that mental health problems are brain problems that affect a child's development and mind, but the listed behaviors were just behaviors and could be corrected.

I: Do you consider ADHD to be a mental health problem?

P1: No I don't think so…Because this [ADHD] is more like in the behavior it's not something in the brain like mental health problems.

P2: No…Because they are mentally healthy, they [children with ADHD] can understand and even sometimes they are intelligent but their problem is in concentration and finishing tasks.

P3: Um, no it's not a mental problem. Mental problems are different. These behaviors coming from a child who has a deficiency in something that needs to be treated, there is nothing wrong with their mind and brain.

P4: ADHD is caused by deficiency in something in their body. I told you this before, or maybe watching too much TV, or something. But mental health problems are problems in the brain.

One of the mothers who considered ADHD a mental health problem stated that when her two sons were diagnosed with the disorder the physician explained to the parents that sometimes ADHD behaviors resulted from problems with the child's mental health and his/her brain, and so the child did not have control over his/her behaviors. *"…I remember he* [the physician] *told me and my husband that this disorder is a mental health problem and may be our child has a problem in some areas in his brain…"*

When mothers were asked to explain what they think is a mental health problem, mothers listed depression, schizophrenia, and mental retardation as problems that affect a child's developmental aspects.

> P1: People with these diseases [depression, schizophrenia…] are not acting normally and their judgment is affected by these diseases.
>
> P2: I will call something mental health problem if there is a significant delay in development, like mental retardation or depression.

Mothers' Responses, Based on Length of Stay in the U.S.

Mothers across the three groups attributed the behaviors to psychosocial factors (home environment and seeking attention). Interestingly, no mother in any group acknowledged ADHD behaviors as a mental health problem except for the one mother who has two sons diagnosed with ADHD. The other factors were sporadically addressed by the mothers (neurotransmitter deficiency, environment/ genetic, sugar and TV, and vitamin deficiency) (see Table 20).

Table 20. Causes of ADHD Behaviors, by Length of Stay (*n*=16)*

Length of Stay	Neurotransmitter Deficiency	Vitamin Deficiency	Sugar and TV	Seeking Attention	Home Environment	Environment / Genetic	Total
1–5 group (n=5)	0	0	1	3	4	0	8
6–10 group (n=6)	1	0	1	4	5	0	11
>10 group (n=5)	0	1	0	2	4	1	8
Total	1	1	2	9	13	1	27

*Participants may have more than one response.

Triggers for Seeking Help

Mothers most often reported that they would deal with the child's behavior by themselves until a certain point had been reached where they would no longer be able to tolerate it and would go for help—this point was coded as a "trigger." Several triggers were reported by mothers and were subcategorized as follows: the interference of the behaviors with the child's academic achievement, consistency/persistence of the behaviors, developmental stage, presence of multiple behaviors, and mothers' inability to control the behaviors. Mothers considered all these triggers when responding to the child's behaviors. The majority of these triggers were similar to the reported triggers in the ADHD vignette.

Academic Achievement

One of the reported triggers for mothers in seeking help for a child was if the behaviors had begun to interfere with the child's academic achievement. This theme was reported among all participants. Mothers were concerned about the children's academic

achievement because they thought if the child failed or did not do well in school, then he/she will not have a good life and would not be successful.

> P2: I will be afraid that these behaviors [the listed behaviors in the checklist] will affect [the child's] grades, and this is bad because not doing well in the school.
> P5: … if this child is acting like this all the time in [the]school and not paying attention to the teacher then the child will fail and he will not be successful.
> P11: … also these behaviors may affect the child's achievement in the school because he cannot concentrate and focus. And I think that children with these behaviors will not have good future, if they did not get help.

Once again, mothers elaborated on the importance of education for their children, because with good academic achievement the child could have a good job and a good life. Mothers also talked about the impact of having no education on a child's life in general.

> P9: …education is important for us [Arab parents]. It opens the door of happiness for you; this is what I keep telling my children. I told them if you want to have a good and decent life then you have to have good grades and be successful in the school so you can graduate from the university and have a good job.

Consistency/Persistence

The persistence and the consistency of the presence of ADHD behaviors were other triggers for the mothers that would cause them to seek help for a child (if the child exhibited the behaviors listed on the checklist. Specifically, mothers were concerned if they noticed that a child was displaying these behaviors everywhere and always.

> P3: …and if the behaviors persist, and I noticed that my child is having the behaviors everywhere and all the time, then I will take the child to professional like to the physician or to a behavior therapist.
>
> P8: But if we are talking about a child having the majority of these behaviors all the time and everywhere, definitely I will seek help, because the child with these behaviors needs more than my help, the child needs professional help treatment.

Mothers' Inability to Control the Behaviors

Mothers' concerns about not being able to control a child's behavior were noticed in their responses. Moreover, they considered this inability as motivation for them to seek help for the child, because they thought that if the child was left without intervention, the child's behaviors would get worse.

> P1: …well if I tried to manage the child's behaviors at home and I still see him struggling, then I will ask for help [because] the child needs more than my help, he needs treatment.

Having All/Most of the Behaviors Together

When mothers were asked about their thoughts regarding the listed behaviors, they frequently responded that if they would examine each behavior separately, the behaviors would not concern them. However, when grouping all the behaviors together, mothers were concerned and they expressed the need to seek help to modify the child's behaviors.

> P1: …each behavior from these behaviors [ADHD behaviors] alone is normal and I think many children have some of these behaviors. But if you talk about a child who has many of these behaviors then that would be a problem.
>
> P2: …if the child has the majority of these behaviors and he is acting like this all the time and everywhere I would be concerned, but if the child is having one or two of these behaviors and he is acting like this occasionally…that would not bother me.
>
> P3: … if the child has all these behaviors, it is a problem, but if he is having just one or two, I think that is normal.

Child's Developmental Stage

The developmental stage of the child was reported by mothers as a factor for them to decide if she would seek help for the child. Mothers discussed their abilities to tolerate a child's behavior to a certain developmental stage because they considered it normal at a certain developmental stage. For the mothers, at a certain age the child should be able to control his/her behaviors and they should be responsible for their behaviors. For instance, one mother stated:

> P12: … it depends on the child's age, I mean I can tolerate from a young child being talkative not paying attention, leaving seat and stuff, but I will not accept these behaviors from a teenager for example. It's just hard because by that time [teenage] they should be more responsible and more mature, they will understand and control the way they behave.

Another mother emphasized that by eight years old and older, children are not supposed to have any of the listed behaviors because for her, the child is mature enough to understand the consequences of these behaviors.

P14: It depends on the [child's] age; if the child is so little I think this is normal but if he like 8 years or 12 years, I think definitely there is something wrong.

Mothers' Responses, by Length of Stay in the U.S.

The listed subcategories were noticed across the three groups. The listed triggers were equally considered when it comes to mothers' decisions whether to seek help. No pattern of responses was observed with regard to length of stay in the U.S. (see Table 21).

Table 21. Mothers' Responses for Help Seeking Triggers, Based on Length of Stay in the U.S. (*n*=16)*

Length of stay in U.S.	Academic Achievement	Consistency/ Persistence	Presence of All/Most Behaviors	Inability to Control Behaviors	Developmental Stage	Total
1–5 group (n=5)	5	5	5	5	5	25
6–10 group (n=6)	6	6	6	6	5	29
>10 group (n=5)	5	5	5	5	5	25
Total	16	16	16	16	15	79

*Participants may have more than response.

Sources of Help

Once again, mothers reported the same sources of help as the ones reported for the behaviors depicted in the two vignettes. Among these sources were family and

friends, school services, physicians (pediatricians/family physicians), and professional mental health help (psychiatrists/psychologists) respectively. Mothers stated that they would seek help from their families and schools first and then would seek medical help.

Family and Friends

Asking family and friends for advice and help was reported as the first choice for seeking help among mothers in this study. Mothers stated that family members and close friends would better understand their situations and would help mothers in dealing with the child's behaviors.

> P11: …my mother will understand, and she will help me and give some advice…
> P10: …I know my family and my close friends will help me…that is what family is for…
> P7: I usually ask my mom or my sister if I have problem, they know how to help me…sometimes I do ask my close friends because I know they will understand…

School Services

Because of the mothers' concerns about the child's academic achievement, mothers reported that they would go to the school and talk with teachers about how to manage the child's behaviors to prevent negative consequences in academic achievement, whether teachers could refer parents to school resources to manage their children's behaviors, and if teachers would work with the parents to help with the child's problems. Again, even though mothers did not know what a counselor in the school was or how he/she could help with behavioral problems, interestingly mothers mentioned consulting the counselors in schools.

P1: … I will go to the school and talk with the teacher; we might work something out to help him if I could not control the behaviors …something like this.
P2: I think here in the States they have school counselors, so yeah I mean they have to talk with these people so they can figure out how to help this child.
P3: Maybe I need to ask for others to help me in some things that will help to deal with these behaviors in the school especially the teachers and if they have extra effort to deal with that.

When mothers were asked about the reasons for why they would go to the school for help, mothers reported the same reasons they reported when they responded to the ADHD vignette (the teacher is a source of information about the child's behaviors and about the availability of the community services).

Physician (pediatrician/primary[family] physician)

Again, mothers reported seeking help from a primary physician if they did not benefit from the other sources and if they were referred to see the physician by the school. *"… then I'm going to consult his/her primary care physician."* Also, mothers reported going to physicians to seek an evaluation and assessment for a child's behavior: "…if nothing works, I might talk with his pediatrician and ask him [the physician] to evaluate my child and advise me."

Seeking Professional Help

As with the ADHD vignette, many mothers consistently reported that they would not seek professional mental health help unless they have been advised to do so by the school teacher/counselor, a primary physician, or a pediatrician. *"I would go for a psychiatrist or a psychologist if the physician or the teacher recommended that, but I don't think so that I will go if they did not recommend…"*

Only four participants reported that they would consult a psychiatrist or a psychologist to help with the child's behaviors. *"…But if we are talking about a child having the majority of these behaviors all the time and everywhere, definitely I will seek professional* [psychiatrist/psychologist] *help."* One of the mothers mentioned that the psychiatrist and the psychologist could help in terms of behavioral treatment. *"I know these professionals* [psychiatrist/psychologist] *will do behavior therapy or something to manage the behaviors of this child."*

Mothers' Responses to the ADHD Checklist, by Length of Stay in the U.S.

Mothers in groups 1–5 and 6–10 were more frequently said they would seek help from family, friends, and school services first. Mothers in the >10 group reported that they would seek help from professionals (psychiatrist/psychologist). However, mothers in all groups reported seeking help from school services and physicians (see Table 22). The same patterns were observed with the mothers' responses to the ADHD vignette.

Table 22. Mothers' Responses for Sources of Help, Based on Length of Stay in the U.S. (*n*=16)*

Length of Stay in U.S.	Family/Friends	School Services	Physician (pediatrician/family physician)	Professional Help (psychiatrist/psychologist)	Total
1–5 group (n=5)	5	5	5	0	15
6–10 group (n=6)	6	6	6	0	18
>10 group (n=5)	0	5	5	4	14
Total	11	16	16	4	47

*Participants may have more than one response.

Mothers' Information about ADHD

At this point, mothers were informed that the listed behaviors are the behaviors of ADHD. All mothers reported that they had heard about ADHD while they lived in the U.S. but not before that. The main sources of their knowledge about ADHD were TV, friends, and the Internet. One mother learned about ADHD because her two sons were diagnosed with ADHD; this mother explained that first she started to notice that her children were acting differently than other children and the teachers at school kept complaining about her children's behavior and their academic achievement. Then her husband and she decided to take their children to a physician, who diagnosed both children with ADHD. Another mother reported that she was informed about ADHD from her friend, who is an American with a child diagnosed with ADHD. Two other mothers reported that they learned about ADHD while they were studying; one of them is a psychologist and the other a physician.

In general, all mothers demonstrated general knowledge about ADHD, even though they were not able to specifically label the behaviors as ADHD. For example, one mother described ADHD as follows:

> P13…it means that those kids [who have ADHD], they have problems in their attention and they are not organized and they do not take care of the other things because they are hyperactive and they cannot focus.

The mother who disclosed that her sons had been diagnosed with ADHD in the U.S. and treated with medication said the following:

> P11…a child with these behaviors will be hyperactive when playing or talking or playing with other children, he will have these behaviors all the time and everywhere to the extent where the parents might become concerned about their

> child's safety. For example, this child can jump in front of a car because he is not paying attention and they have so much energy that they cannot control. This disorder affects the child's life in different ways and specifically their schoolwork…

When she was asked to clarify, she said that a child with such problems would have problems with his/her friends because no one would want to be friends with them. Also, the child cannot focus and that is why they would have problems in their daily life activities and with finishing tasks, especially schoolwork.

On the other hand, one mother doubted the existence of ADHD as a diagnosis because she thinks that a child is a child, and he/she can be active sometimes.

> P6: I'm not sure if ADHD even exists. I think people made it up because they want a perfect child, in reality it's normal for children to act out sometimes and not focusing but to diagnose them with a disorder and start giving them medication is not fair.

Another mother was against labeling children with ADHD because she thought that children who exhibited these behaviors are smart. *"For me, to be honest, I don't think that this is a disorder, I think children with these behaviors are smart and clever… I will not consider it as a disorder."* This mother's rational for describing these children as smart was because she has a child who exhibits most of these symptoms, and he is an "A" student in school. Even though he was very active and teachers and other people used to complain about his behaviors, the mother did not consider it a problem because it was not affecting him in school and he was doing well finishing his homework.

Mothers' Responses, Based on Length of Stay in the U.S.

(see Table 23)

Mothers across the three groups reported that they had heard about ADHD after they moved to the U.S. but not before that. Only one mother (the mother of the two sons diagnosed with ADHD) from the >10 group reported that her experience with her sons informed her about ADHD. Two mothers from the 6–10 and the >10 groups reported that they learned about ADHD during their studies. One mother from the >10 group reported that she had heard about ADHD from friends. The rest of the mothers reported that their sources of information about ADHD were the media and press (e.g., TV, newspapers, magazines).

Two mothers from the 1–5 group doubted the existence of ADHD as a disorder. However, two other mothers from the >10 group demonstrated that ADHD is a disorder that needs to be treated.

Table 23. Mothers' Sources of Information about ADHD, by Length of Stay in the U.S.

Length of Stay in U.S.	Friends	Media	Education	Having a Child with ADHD	Total
1–5 group (*n*=5)	0	4	1	0	5
6–10 group (*n*=6)	0	6	0	0	6
>10 group (*n*=5)	1	2	1	1	5
Total	1	12	2	1	16

*participants may have more than one response.

Mothers' Attitudes toward Treatment Modalities

With the regards to the treatment modalities available for children with ADHD behaviors, mothers reported an interesting aspect about using behavioral therapy and/or medication to address the child's behavior. Mothers preferred using behavior therapy techniques over using medication.

> P5: I will do the behavioral management, but the medication! I think the kids are too young to put them on medication, and I think the medications are bad.
> P7: I am with doing behavior treatment, but definitely no for medication.
> P10: I would not go with medication; I heard its bad for the children. I heard that sometimes they [clinician] teach the mother how to deal with the behaviors by using some techniques.

All mothers demonstrated general knowledge about behavior therapy and how this process works. For example, mothers described behavior therapy as follows:

> P1: … behavioral therapy includes rewarding, having schedules [for the child] to get the child on track and to have him be more focused …it helps in modifying the child's behaviors.
> P3: Behavior therapy, it is like rewarding the child if he behaves well and I know they [clinicians] use it to teach the child new behaviors…
> P13: Using behavior therapy cannot harm the child, I mean parents have to try it, if it works it works, if not it will not harm.
> P16: I'm with the behavioral treatment, I mean it's good for parents and teachers to know how to deal with the child's behavior and try to change it by using some behavior manipulation or treatment.

Many mothers talked about the importance of involving more than the parents with the behavioral treatment process (e.g., teachers, siblings, and friends).

> P4: You know, everyone needs to learn how to deal with the child's behavior…I need to do that, the teacher needs to do it, and everyone.
>
> P7: It's [behavior therapy] effective if all people who are in contact with the child learn it and follow it…
>
> P16: All the people who deal with the child (who has problematic behavior) should be involved with this technique, because if one person follows it and the others did not, it will not work.

On the other hand, mothers reported negative responses about using medication to treat children with ADHD behaviors, except for two mothers in the >10 group (the mother of sons diagnosed with ADHD who were on medication, and the psychologist). Mothers reported the negative side effects of these medications on the child. For example, one mother said, *"But I'm not sure about medication, I heard its bad for children like it affects them negatively, I think if I have a child with this disorder I will not give him medication."* When mothers were asked to clarify the kind of side effects they think the medication would cause, many mothers could not give a precise response.

> P1: To be honest I don't know exactly [the side effects] I just heard that it is not good.
>
> P4: I don't know.
>
> P6: I have no idea, we [a group of mothers] were having a conversation and one mother said that medications are bad for kids.

Some mothers elaborated on the fact that medications do not treat the cause of the behaviors; it just calms the child and makes him drowsy and slow.

> P9: I heard that these medications are just calming the child and it is not making them any better, also it makes them slow. I think that these medications can affect the child when he is grown up.
>
> P12: One of my friends told me that her neighbor's child was diagnosed with ADHD and he is on medication, and since the child started taking the medication he seemed slow and dull…so maybe the medications are bad for children.
>
> P13: I think that medication does not treat the cause it just makes the child slow…

Interestingly, when mothers were asked to report their sources of information about the medications, twelve mothers reported that they had heard about it from TV or the Internet, four mothers reported that they had heard about medication and its side effects from friends, three mothers reported that they had read about it, and three mothers said that they had heard about it from school.

The mother of the two sons ADHD on medication stated that in the beginning, when one of her sons was diagnosed with ADHD, she started with behavioral therapy and followed that for a long time. She said that the treatment was not effective, so the physician recommended medication. The mother mentioned that *"…in the beginning I was concerned about giving him the medication."* However, after she started the medication for her son, she noticed the immediate effect of the medication on her child's behaviors as he became less active and more focused. *"When I started giving him the medication, I started to notice the improvement in his behavior. I realized how much the medication helped him."* She elaborated, *"Well I started to see that he is more focused now, he is more involved with us, you know he is not as crazy* [hyperactive and not concentrating and all over the place] *as he was before the medication."*

Mothers' Attitudes about Treatment Modalities, by Length of Stay in the U.S. (see Table 24)

In general, mothers across the three groups were in support of behavior therapy and against using medication to treat children with ADHD. Mothers reported that these medications could affect the child negatively. The only mother who reported a positive attitude about medication was the mother whose sons were diagnosed with ADHD, and both of them were on medication.

Table 24. Mothers' Attitudes about Treatment Modalities by Length of Stay in U.S. (*n*=16)*

Length of Stay in U.S.	Behavioral Therapy	Medication	Total
1–5 group (*n*=5)	5	0	5
6–10 group (n=6)	6	0	6
>10 group (*n*=5)	5	1	6
Total	16	1	17

*Participants may have more than one response.

Aim Three: Compare Arab Immigrant Muslim Mothers' Perceptions of the Diagnosis and Management of ADHD with Western Cultural Practices in Diagnosis and Management

To address this aim, mothers were asked how they would respond to a child's behaviors if they were in their home countries, and how would other people in their home countries perceive the child's behaviors if he/she exhibited the behaviors depicted in the vignettes. Additionally, aim three was addressed in relation to the ADHD behavior checklist by asking specific questions related to ADHD and if this disorder was

recognized in the participants' home countries, as well as the diagnosis and management procedures of this disorder in their home countries. Data will be presented in terms of three categories: peoples' perceptions of externalizing behavioral problems, including ADHD, in the participants' home countries; the diagnosis and management of the behavioral problems, including ADHD, in the participants' home countries; and participants' impressions about the diagnosis, management, and treatment of ADHD in the U.S.

Peoples' Perceptions of Externalizing Behavioral Problems, Including ADHD, in the Participants' Home Countries

This category represents the participants' responses about the peoples' perceptions of the externalizing behaviors, including ADHD, in the participants' home countries. In this regard, mothers across the three groups emphasized the idea that people back home would mainly perceive the child as an active, naughty, or undisciplined child. For example, one mother stated:

> P7: Where I used to live [Egypt], there were lots of kids who might have this problem [ADHD], but people would refer to that child as an active child, or he lacks discipline, but they[other people] would never say that this child might have a problem.
>
> P9: People back home perceive the active child as a naughty child, or his/her parents did not know how to teach the child good manners.
>
> P11: I do not think that parents back home would think that there is a problem with the child if he is extra active. For them [parents back home], the child is just hyperactive and lack discipline…

In terms of ADHD behaviors, mothers were asked if people back home knew about ADHD; their responses indicated that ADHD is not recognized in the home countries and not many people know about it.

I: Is ADHD recognized in your home country? Do many people know about it?

P2: No, I don't think so.

P6: I never heard anyone talk about it back home.

P8: No, when I lived there I never heard about it.

Furthermore, mothers' responses indicated that people back home would be annoyed about a child's behaviors and would not want the child to be with their children.

P1: They [people back home] will say he is *galelet adab* [lack of discipline, she is not respectful], she is naughty, and they are not comfortable being around her [the mother's daughter, if she exhibited the ADHD behaviors] with their kids, because they will think that she will be a bad model for their kids.

P2: They [people back home] will not consider it as a problem they will consider the child noisy or over-active, and no one wants to be with that child.

P7: They [people back home] will not like it when the child is around; they [people back home] will be so annoyed. They [people back home] might even prevent their children from hanging out with this child because they will think that the child [with ADHD behaviors] will have bad influence on their kids…

Mostly, mothers reported that people back home would think that the child's behavior is a temporary status and that the child would outgrow the bad behaviors.

P2: They will think that it is normal and when they grow up they will be ok.

P5: I think they [people back home] see it [the behavioral problem] as a temporary period and when the child grows up he will be ok, and they will forget about these behaviors.

P7: Parents back home will say to ignore the child, he will be good one day [out-grow the behavior].

P14: They [people back home] will think it's a temporary phase and the child will out-grow it.

Mothers repeatedly reported that people back home would blame the parents, mainly the mother, for the child's behaviors because they would think that it is the parents' [mother's] fault that the child is not well behaved, is disrespectful, and lacks discipline.

P: They [people back home] will talk behind [your back], and they will blame me as a parent, they think that I did not do a good job raising my child and teaching him manners.

P2: Of course they [people back home] will blame the parents because they will think that it is the parents' fault that their child is acting like this [having behavioral problems] and they [the parents] didn't discipline him and they did not teach their kids good behaviors and how to respect others.

P3: They will think that I'm not a good mom, I don't know how to raise kids well. And I will feel bad that my child conveys something that is not true about me. For sure they will not understand it if the child is having a real problem.

Mothers stated that they would be really careful about their children's behaviors in front of other people back home because of their concern that they would be blamed for the child's behavior. *"The child can embarrass his/her parents. That's why the*

parents there, they are very careful about the way their kids act in front of others." In addition, they stated that it is important for the mother to have a well-behaved child so that people would not blame her or think poorly about her.

> P14: Because you know, it is hard to have a misbehaved child, this will ruin my reputation as a mother in front of other people, I mean they will think that I'm not doing a good job raising this kid, and I don't like it when people critique my style.

Other mothers reported the idea that the child's behaviors sometimes represent the home environment to other people, so if the child misbehaved that meant that the home environment was not good, and people would think poorly of the family and their lifestyle.

> P12: They would think that our home is not stable, and we always fight and we are bad parents, you know…it is hard sometimes to explain to those people that the child is having a problem or something, they won't understand that, they will jump to conclusions immediately.
>
> P15: People back home are very criticizing. If the child misbehaved they will think that the parents are bad at home and that parents are not setting a good example for their children.
>
> P16: They [people back home] will think that the child's behaviors come from his home, and that means that the parents are not good or the home environment is bad for the child.

Other mothers gave emphasis to the importance of having a well-behaved child because it's their culture and they want their children to follow the social norms of their culture, norms like respecting the parents and others, behaving well in all circumstances,

and obeying parents. *"I mean we raise our children to respect others and behave as expected, it's our culture."*

Mothers were asked how other peoples' perceptions about a child's behaviors would affect them. Mothers responded that the mother would feel isolated and unwelcomed because no one would invite them to events nor would they want to be with the mother because of the child's behavior. For example, one mother stated, *"...but maybe they will not invite them to attend some occasions or events because they do not want to deal with the child who behaves poorly."*

The Diagnosis and Management of Behavioral Problems, Including ADHD, in the Participants' Home Countries

Across the three groups, all mothers emphasized the fact that behavioral problems, including ADHD, in children are not recognized in their home countries. They also reported that the diagnosis of behavioral problems is uncommon as well.

> P1: No one would think that the child is having problems in the behaviors…and even if they knew, they will not know where to go.
>
> P4: I never heard of professionals [back home] who are specialized in children's behavioral problems.
>
> P13: Parents and families back home, they do not recognize that children might have behavioral problems; even if they do, they will not know where to go for help.

Moreover, mothers stated that there are no professionals who specialize in children's behavioral problems to diagnose such problems.

P7: Because back home, there is not much help they [the parents] can get, because there are no professionals who can help in diagnosing these problems.

P8: I'm not sure if there are professionals to treat children if they [the children] have bad behaviors…

P11: Back home, it is just hard, I never heard about any professionals…

Mostly, mothers reported that in their home countries people do not recognize behavioral problems as problems; rather, they would perceive them as part of a temporary phase, assuming the child would out grow them someday. Also, mothers reported that parents do not know about children's behavioral problems.

P2 I never heard anybody talk about it [ADHD], but they will say that this child is active.

P6: No one knows about ADHD, I never heard anyone talk about it…

P7: People will say the child is just active, there is nothing wrong with him…or the child is not disciplined and they will blame the parents.

In addition, mothers highlighted the fact that there is a lack of resources in their home countries and that may contribute to the parents' inability to recognize and address the behavioral problems of children.

P5: …but there are not many resources they [parents back home] can seek help from for the child, I mean they will deal with it themselves and they will involve the family.

P8: … what resources are available for people there [back home]! It is hard to find source of help because you don't know what is available and how to reach.

P15: Back home, there are not many resources for parents to seek help from; it is just hard for people back there.

Other mothers emphasized the inability of the teachers in schools back home to recognize behavioral problems because of the teachers' lack of knowledge about behavioral problems of children. Also, teachers back home manage larger classes compared to teachers in the U.S. and have limited school resources.

P2: I think families overseas, they don't have many options, talking about classrooms that have 45 students in classes with one teacher, they are already limited in regular normal things that we take for granted here in U.S., and the services I don't think that there is anything that is available for them to help them deal with a child with these kinds of behaviors.

P7: Even in the school, the teachers do not know about it [the behavioral problems], there is no any kind of help in the school for such problems.

P8: If you visit a school back home, you will find fifty students in each class and imagine one teacher is dealing with all these kids…also, teachers do not do anything about behavior problems, I don't think so.

Mothers repeatedly talked about the stigma associated with seeking help from professionals for behavioral problems. Mothers often reported that even if people back home recognized behavioral problems and knew that they needed to seek help from professionals to deal with these problems, they would not do it because other people would think that the child was "crazy," "insane," "*majnoon*[crazy]." Mothers talked about seeking professional help back home and its effect on the child and family as well. Mothers frequently mentioned that it was shameful back home to seek help from professionals for such problems.

P1: You know, I told you, because people [back home] will think that this child is crazy, insane or something, and no one wants their kids to play with this child, and the label will stuck with the child forever. Also, it is bad for the family because everyone around them will say that their child is crazy.

P2: The problem is… in the Middle East, people still do not like the psychiatric or the psychological problem especially for kids because this is not accepted very much by the parents or by the culture.

P3: I saw children with mental problems and they are at home and the parents would not take them to a psychologist or a psychiatrist because it is a shame and it will affect the family and the child, I mean the child will be labeled as crazy for his/her life and the family will be stigmatized and people will think low of the family and the child.

When mothers were asked about how they would respond to a child if he/she exhibited problematic behaviors back home, mothers reported that definitely they would act differently if they were in their home countries. *"If I'm in my home country, maybe I will discipline more but here* [in the States] *you just cannot because it's just there are so many ways you can get help for the child."* Mothers reported that if they were in their home countries, they would deal with behavioral problems themselves by using parental strategies. Mothers emphasized that punishment was the most common strategy parents would use to deal with problematic behaviors. *"They will punish the child to fix his behaviors…"* Mainly, mothers stated that parents back home would use physical punishments like hitting and spanking to address a child's behaviors rather than using a reward system or other techniques (e.g., time-outs, taking away privileges, communication with the child).

Besides dealing with the behaviors themselves, mothers stated that they would seek family help to assist in dealing with the child's behaviors because families would understand the situation, and because back home parents would not seek help from outside the family to solve their problems. It's just their culture. *"Usually, family would help in this matter, like mothers, sisters. Back home you would not seek help from out of the family, it is not good to get help from others…"*

Many mothers in the 1–5 and 6–10 groups demonstrated concerns about seeking out a psychiatrist or psychologist to get help for a child. However, it is interesting to note they discussed that if they were referred to see such professionals, they would go because they are here in the U.S. But if they were in their home countries, they would never consider going, even if they were referred. When the researcher asked one mother about the kind of help she would seek for her child if he/she exhibited ADHD behaviors, she stated that *"…if the teacher or the physician told me to go and see a psychiatrist or a psychologist [here in the U.S.] I think I would go, but back home…no way…"* When she was asked about her response, she replied:

> P8: Because I'm here [U.S.A.] it is ok for me to see a psychologist to manage the problem [behavior problem], but in my country I will be concerned about the psychologist or psychiatrist. The culture does not accept the idea of seeing a psychologist or a psychiatrist.

The researcher asked the participants for their thoughts on how seeking help from a psychiatrist or a psychologist would be perceived by other people. Mothers mainly responded that seeking mental health services is considered shameful in their home countries. Also, mothers expressed feelings about the effect of such perceptions on children and their families.

P9: Well, this will affect the way they [other people] look at the child, it will affect the child when he goes to school, or wants to apply for a job. And no one would want to be around him, and they [other people] will think low of our family.

P10: It is a sensitive issue, in my country [Sudan] going to a psychiatrist or a psychologist is a big deal, because people will think that the person is crazy and this will affect the person's family as well, because people will think low about the family…

Moreover, when mothers were asked about their willingness to seek professional help in the U.S. but not in their home countries, they defended their stance, saying that here in the U.S., it is common for people to go to a psychiatrist or a psychologist when they need to and no one interferes with that or considers it a shame. In their home countries, however, it would be considered shameful and dishonorable to the family if one member saw a psychiatrist or a psychologist. *"Here* [in the States] *it's easier to go to a psychiatrist or a psychologist because it's not perceived as shameful. It's the opposite, people here would go to these professionals for several reasons sometimes, it's just because they feel down."*

Participants' Impressions of the Diagnosis, Management, and Treatment of ADHD in the U.S.

Mothers were asked their thoughts on how ADHD is diagnosed, managed, and treated in the U.S. The majority of mothers reported that they have positive feelings about how this disorder is diagnosed and managed in the U.S. For example, one mother stated that:

P9: I think the diagnosis and management of such a disorder [ADHD] here in the U.S. is fascinating, I mean the process is complicated but I understand it's important to do all the needed assessment before diagnosing the child with such a disorder.

P10: I think it is good to be able to figure out the behavioral problems in children. I like the way they assess it and manage it.

P13: The diagnosis and management process here in the States is very organized and comprehensive…here they take so much care of the children and their health.

However, other mothers were totally against the diagnosis of ADHD in children.

P6: I mean that I'm not sure if ADHD even exists. I think people here made it up because they want a perfect child, in reality it's normal for children to act out sometimes and not focus, but to diagnose them with a disorder and start giving them medication is not fair.

P5: I think people here are exaggerating the problem and so they diagnose any child with some unusual behaviors with ADHD, I don't think this is right.

Summary

The results of this study revealed that the mothers used several terms to describe problematic behaviors in children, words like active, overactive, spoiled, concentration problems…etc. Also, mothers reported several strategies as to how they would respond to a child's behaviors if he/she exhibited behavioral problems. Among these responses are communication, punishment, work collaboratively with teachers, use a reward system, and become more involved with the child. In addition, mothers endorsed using many resources to help a child, such as family and friends, school services, physicians, and

some of the mothers would choose to see a mental health professional to modify the child's behaviors.

Mothers reported various issues they considered to be triggers that would cause them to seek help for a child's behaviors. One such trigger was when problematic behaviors began to interfere with a child's academic achievement. The inability of the mother to control negative behaviors was another trigger endorsed by mothers across the three groups that would send them out to seek help. Also, mothers considered the child's developmental stage and the consistency and the persistence of disruptive behaviors as triggers to seek help for a child. These triggers were equally reported by all mothers across the three groups, regardless of how much time they had lived in the U.S.

Finally, mothers reported that the way the behavioral problems were diagnosed and managed in the United States is different from how these behaviors are handled back in their home countries. Moreover, mothers emphasized the issues of stigma, lack of knowledge, and lack of resources as problems that would hinder them from seeking professional help to treat behavioral problems in children back home. Interestingly, mothers reported that their attitudes toward children's behavioral problems differ when in the U.S. than the generally accepted attitudes held in their home countries, as discussed previously.

CHAPTER 5. DISCUSSION

The purpose of this study was to elicit mothers' perceptions of and responses to behavioral problems in children, especially those behaviors associated with ADHD, in a purposeful sample comprised of Arab immigrant Muslim mothers. Mothers are considered the primary caregivers of children and the ones who spend the majority of time with children in the Arab culture. Thus, the underlying assumption of this study was that knowledge of parental beliefs and perceptions of child behavior problems such as ADHD is fundamental to better understanding, identifying, and managing these problems in Arab children. This information should aid in the development of culturally appropriate prevention and intervention programs for Arab immigrants in the United States. Consequently, three specific aims were addressed in this study:

1. Explore how Arab immigrant Muslim mothers describe and manage children who display externalizing behaviors (e.g., inattention, impulsivity, hyperactivity, and oppositional attitudes).
2. Examine Arab immigrant Muslim mothers' understanding and perceptions of ADHD.
3. Compare Arab immigrant Muslim mothers' perceptions of the diagnosis and management of ADHD with western cultural practices in diagnosis and management.

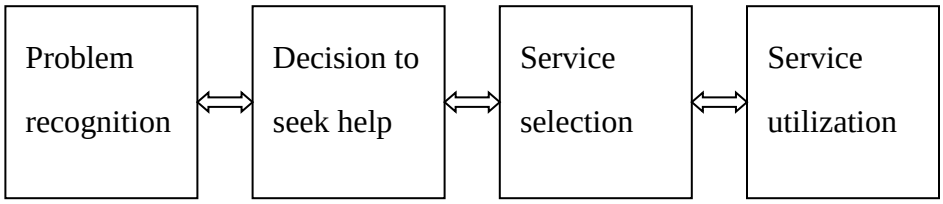
In this chapter, the main findings of this study are discussed within the context of the existing literature. Three major findings emerged from this study corresponding to the three specific aims. First, Arab immigrant Muslim mothers recognized the behaviors depicted in the vignettes and the ADHD signs and symptoms checklist as problematic behaviors. Second, mothers' help-seeking behaviors to address the problematic behaviors were linked to the presence of several triggers that cued the help-seeking process. And third, differences in results by length of stay in the U.S. showed that cultural background

may impact the way mothers perceived and responded to the problematic behaviors. Findings one and two address aims one and two, and the third finding addresses the third aim. To the researcher's knowledge, there are no studies available that address how Arab immigrants Muslims perceive problematic behaviors in children. For comparison, the researcher discusses the findings from this study in relationship to results from studies that involved other racial or ethnic groups and parental perceptions of problematic child behaviors. Study limitations are summarized. This chapter concludes with a discussion on future research and clinical implications of the current study findings.

Aims One and Two: Major Findings

Early recognition and identification of the signs and symptoms for ADHD is needed in order to provide timely intervention and prevent further complication (Bussing, Gary, Mills, & Wilson Garvan, 2003; Eiraldi , Mazzuca, Clarke, & Power, 2006; Sayal, Taylor, & Beecham, 2003; Sayal, Goodman, & Ford, 2006). The Help-Seeking Behavior Model (HSBM) has been proposed as a framework to explore Latino parents' perceptions of their children's ADHD and parents' treatment-seeking behaviors, and their actions to find help for their children (Eiraldi et al., 2006). Also, the model has been used to explain factors that may be predictive of service use among minorities. The ADHD HSBM by Eiraldi and colleagues was developed based on previous help-seeking models (Cauce et al., 2002; Wills & Depaulo, 1991; Goldsmith, Jackson, & Hough, 1988; Kadushin, 1969). The HSBM consists of four stages: problem recognition, decision to seek help, service selection, and service use (Figure 2).

Figure 2: The HSBM.



Source: Eiraldi et al. 2006.

This model fits the current study findings; thus, the researcher will use this model and the ecological model to frame the discussion of the major findings for aims one and two.

Problem Recognition

One important finding of the current study was the ability of the Arab immigrant Muslim mothers to recognize the depicted behaviors in the vignettes and the behavioral checklist as disruptive and problematic behaviors, though not necessarily recognizing the behaviors as ADHD or ODD. According to the HSB model, the concept of parental problem recognition is the first step in the help-seeking process for children with emotional or externalizing behavioral problems (Eiraldi et al., 2006). Thus, when the parents acknowledge the presence of problematic behaviors, parents tend to explore the facts about the behaviors (e.g., why these behaviors are happening, how to modify these behaviors, and whether or not to seek help for the child). In the current study mothers were able to recognize the behaviors as problematic; this is important because recognition implies that mothers are in the first step toward seeking help for the child. Thus, seeking help for the child might decrease the negative impact of the problem behaviors on the child's life.

Few studies have explored the parental ability to recognize problem behaviors in their children. In a study conducted by Slade (2004), the researcher concluded that many

children do not receive adequate help because parents or other adults (teachers, health professionals) do not recognize that a child is in need of help, or they do not recognize that the child's behaviors are outside the limits of what is typical (Slade, 2004). These findings indicate that many children may suffer from behavioral problems and they may not be recognized. Thus, they may suffer from complication later in their life as a result of not being treated. Indeed mothers in the current study verbalized the need to seek help to manage a child's behavior problems if they interfered with the child's ability to do well in school fearing that failure in classroom would lead to poor outcomes in their adult lives.

Sayal and colleagues (2006) found that eighty percent of the parents in their study of British parents of children with ADHD, recognized a problem with their children's behaviors (hyperactivity, inability to concentrate and focus); also, the researchers found that this recognition was associated with factors like the severity of the symptoms and the impact of the behaviors on the child's life (school problems, peer problems). In keeping with Sayal et al's findings, Bussing and colleagues' (2003) study of African American and Caucasian parents of school age children revealed that the participants in their study were able to recognize problematic behaviors that were not typically seen in children. However, in the same study the researchers found that African American parents were less likely to recognize problematic behaviors compared to White parents. Furthermore, in a study conducted by Diaz (2009) to explore Latino parents' perceptions of ADHD, the mothers were able to perceive and recognize the behaviors as problematic, especially hyperactivity. The mothers' recognition of the problem motivated them to seek help for the children.

Another factor that is associated with parental recognition for the problematic behaviors is parental tolerance for the child's "misbehaviors". Parental ability to accept a behavior as either normal behaviors or abnormal behaviors varies among parents from different cultures because they may have different tolerance levels of acceptance for a

child's behaviors. Weisz and colleagues termed these tolerance levels as thresholds for recognizing a behavior as problematic (Weisz et al., 1988). In their original study, Weisz and colleagues (1988) found that Thai parents rated a child's behavioral problems less serious and less worrisome compared to American parents, who had high sensitivity to child behavioral problems (e.g. shyness, fear, disobedience, fighting). In the same study, the researchers reported that cultural variables play a role in parents' thresholds for child emotional and behavioral problems. They stated, "One effect of culture is to set adult thresholds for distress over child problems, thus influencing whether such problems are considered serious and influencing which actions will be taken in response" (p. 601). The main outcome of the Weisz et al. study was the development of the Threshold Model. The Threshold Model proposed that individuals in different cultures tend to differ in their threshold (tolerance) for child behavioral problems.

In their study, Brestan and colleagues (2003) found that parental tolerance for misbehavior was associated with parental recognition of child behavioral problems. Therefore, low parental tolerance may lead to a lower threshold of problem recognition. Additionally, children whose parents have low tolerance for misbehavior may seek referral for treatment more quickly. Consistent with Brestan's et al (2003) and Weisz et al (1988) studies, the mothers in the present study talked about their ability to tolerate a child's misbehavior until a certain point, where they start to think that the child might have a problem that is not likely to be resolved by itself.

Mothers in the current study reported that the depicted behaviors in the study vignettes and the ADHD symptoms checklist would impact the child's life and his/her family in different ways if these behaviors were not treated. Mostly, in this study, mothers were concerned about the child's hyperactivity and the inability of the child to concentrate. These symptoms fueled the mothers' ability to recognize that the child was having a problem. As mothers started to recognize that the child is having difficulties with his/her behaviors, mothers offered several parental strategies in order to modify the

child's behaviors. Mothers talked about punishment, helping the child to be more organized and more focused, communication, rewarding the child for good behavior, and working collaboratively with the child's teacher, in order to correct the problematic behaviors. The parental strategies reported by the mothers in the present study, are consistent with the reported parental strategies by the mothers in Diaz's study. In his study, the participants reported using communication, punishment, and talked about helping the child with homework and organizing the child's environment to help the child focus better (Diaz, 2009).

Interestingly, the parenting strategies reported by mothers in this study are in line with the behavioral treatment approaches used in the behavioral parent training (BPT) program (Barkley, 1998). The basic idea of BPT is to provide parents with behavior modification techniques that are based on social learning principles to modify the child behavioral problems (Barkley, 2006; Barkley et al., 2000; Chronis, Chacko, Fabiano, Wymbs, & Pelham, 2004). In the BPT program, parents are taught to identify and manipulate the antecedents and the consequences of child behavior, how to target and monitor the disruptive behaviors of their children, use praise as a reward for their children's problem behaviors, and implement different technique to reduce the incidences of unwanted behaviors (e.g., tangible rewards, time-out, ignoring, and nonphysical discipline techniques). Such programs have been proven to help families of children with ADHD by reducing the child's problematic behaviors (Barkley, 2006; Barkley et al., 2000; Chronis et al., 2004). For example, in the current study mothers reported using disciplinary strategies like privileges removal and time-outs, which are components of behavioral parent training. Mothers also discussed using rewards to motivate the child to meet behavioral expectations, which is a primary element of BPT for use in both home and school settings (APA, 2000; Barkley, 2006; Mash & Barkley, 2003). Also, mothers in the current study reported ignoring the child's behaviors in order to prevent the behaviors from happening again. Ignoring the behavior is also reported in the BPT. This

strategy involves lessening parental attention to avoid reinforcing negative behavior when the child misbehaves with the goal of obtaining parental attention.

That mothers in this study were able to recognize the child's behaviors as problematic suggests that they accepted the idea that the child is having a problem. Consequently, they have to consider the pros and cons of different ways to deal with the problem and decide whether they are willing to seek help or not. The following section discusses the decision to seek help among Arab immigrant Muslim mothers.

Decision to Seek Help

According to the HSBM, after parents recognize that a child has ADHD, they need to decide whether they want to pursue treatment (Eiraldi et al., 2006). In this study, the mothers reported that they would deal with the child's behaviors when they noticed them until a certain point was reached and they felt they were no longer able to tolerate the behavior, and then they would go for help—this point was coded as a "trigger." Several triggers were reported by mothers that would motivate them to seek help for a child's behavior: a child's developmental stage, consistency/persistence of the behavior, the mother's inability to control the behavior, and interference of the behavior with the child's academic achievement. This finding adds to the limited body of literature about when parents from ethnic minorities reached the point where they admit that they cannot handle the child's behaviors and need to seek help.

The current study findings are similar to the findings of Arcia and Ferandez (2003) in a study conducted with Latina mothers. They found that mothers went through several stages before deciding to seek help including noticing the problem, becoming concerned, and reaching a point where they acknowledged that the child's behaviors were problematic and out of the parents' control before deciding to seek help. Also, their participants' decision to seek help was influenced by several factors including difficult

life events, school reports of negative behaviors and negative school achievement, mothers' inability to handle the behaviors, and the child's age.

Consistent with the Arcia and Ferandez (2003) findings, the mothers in the present study first noticed that the child was having behavioral problems, and they expressed concern over the child's behaviors. Then, with the presence of the previously mentioned triggers, mothers reached a point where they acknowledged the seriousness of the behavioral problems and decided to seek help. The present study findings revealed that for mothers, the decision for seeking help was motivated when multiple factors came together that encourage mothers to seek help, a sort of tipping point. This finding is consistent with the available body of literature. For example, in a qualitative study among Latino mothers of children with ADHD who sought treatment for their children, the researchers found that hyperactivity and school complaints about the child's behaviors were the primary reasons mothers sought treatment for their children (Arcia & Fernández, 2003). Furthermore, participants in both the Perry et al. (2005) and Kendall (1998) studies with Latino parents reported that typically they observed that the child was having difficulties at home and school, and parents struggled to manage the daily realities of ADHD until at some point they acknowledged the behaviors were chronic, and that the behaviors required treatment (Kendall, 1998; Perry, Hatton, & Kendall, 2005).

According to the HSBM, parental knowledge about what causes the behaviors is an important factor in the process of making help-seeking decisions (Eiraldi et al., 2006). Thus, if parents attributed the behaviors to internal causes that were not controlled by the child or the parents (e.g., genetic), they were more likely to decide to seek formal help for the child (e.g., school services, health professionals, or physician); however, if they attributed the behaviors as external and under the control of the parents or the child (e.g., home environment), they were more likely to seek informal help (e.g., family, friend) (Bussing, Schoenberg, & Perwien, 1998; Bussing et al., 2003). In the present study, mothers started to talk about what might cause a child's problematic behavior, but the

results are not sufficient to use as a factor for mothers' decisions to seek help. Thus, further research is needed to explore this phenomenon.

Service Selection

The next step in the HSBM was the parents' decision to seek help for the child, and then to decide where to go for help (Eiraldi et al., 2006). In the current study, mothers reported seeking help from different sources to address the behaviors. For instance, in general mothers reported seeking help from family, friends, and school services first, and then if they were referred by school personnel to see a physician, they would seek help from a physician (pediatrician/family physician). These findings are consistent with the available body of literature about help-seeking practices among Arab Muslim individuals. Arab Muslim people follow a hierarchical pattern in terms of seeking-help (Al-Krenawi, Graham, Dean, & Eltaiba, 2004). First, individuals seek help from family members; next, they seek help from close friends; and lastly, they seek help from general medical doctors (Al-Krenawi & Graham, 2000; Al-Krenawi, Graham, Dean, & Eltaiba, 2004; Al-Krenawi, 2005). This may explain why mothers, in the current study, often reported seeking help from family, friends, and school services and then, if they have been referred to see a physician, they would seek help from a physician. It is important to note that in the Arab-Muslim culture, individuals live in a family environment and are regularly surrounded by supportive social networks, and so formal help may not be considered as primary sources of help for emotional and psychological problems. Besides, seeking help for emotional and psychological problems outside the family is viewed negatively in the Arab-Muslim culture.

Mothers reported seeking help from school services because teachers spend a significant amount of time with the child, so mothers recognized that teachers are in a position to notice inappropriate or problematic behaviors. This indicates that Arab Muslim mothers have faith in the U.S. school system, and they rely heavily on this

system for seeking help for their children. This finding adds to the body of literature about Arab immigrant Muslims and school because there is no study that examines Arab immigrant Muslim mothers' utilization of school services to address the child's behaviors (e.g. seeking the advice of school teachers and counselors) in the United States. Also, this finding is important because it supports the importance of developing programs inside the schools to educate mothers about child behavioral problems and the community resources available to help families.

The finding that Arab immigrant Muslim mothers indicated trust in the school system to help children is inconsistent with the studies conducted among other minorities in the U.S. For example, in their study, Bussing et al. (2003) found that African American parents expressed mistrust in the school system and were less likely to pursue help from the school system.

The finding that Arab immigrant Muslim mothers in this study viewed seeking help from general medical physicians as acceptable may be due to the fact that Arab Muslim individuals do not differentiate between emotional- psychological illnesses and physical illness (Okasha, 1999; Al-krenawi &Graham, 2000; Al-krenawi, Graham, & Kandah, 2000). Thus, mothers may think that the child is having a physical health problem, and so they seek the help from the family physician and/or the pediatrician. Primary physicians are considered the gate-keepers for other health care services in the U.S. (Sayal et al., 2006). Since Arab immigrant Muslim mothers are living in a culture where family physicians and pediatricians are considered the gate-keepers for other medical services, this may influence their choice to seek help from the family physician or the pediatrician before seeking help from mental health professionals.

Mothers in the current study were reluctant to seek professional help (psychiatrist/ psychologist) for problematic behaviors. Furthermore, they did not consider ADHD a mental health problem; instead, they considered it a behavioral problem that could be corrected through behavioral modifications and parental strategies. This might contribute

to their reluctance in seeking professional (psychiatrist/ psychologist) help for the problematic behaviors. Even if they considered the problematic behaviors (e.g., ADHD) as mental health problems, they were still reluctant to seek professional help due to the societal stigma associated with these services in the Arab culture. The pattern of seeking mental health services among Arab individuals is influenced by the societal stigma associated with these services (Al-Krenawi et al., 2004; Al-Krenawi, 2005). It has been reported in the literature that Arab cultural views about mental health services are connected to a sense of shame and stigma for the patient and his/her family, as it affects the individual's social status within the community (Abudabbeh & Aseel,1999; Abu Ras, 2003; Al-Subaie and Alhammed, 2000; Al-Krenawi, 2005). In the current study, mothers reported the sense of stigma as a barrier for them to seeking mental health help for their children. Mothers reported that seeking mental health services might affect the child's life and future, because he/she could be stigmatized by having a mental health problem. Interestingly, mothers reported that if they were referred to a mental health professional (psychiatrist/ psychologist) to address their child's behaviors, they would do so because they are in the U.S. Mothers in the current study claimed that seeking mental health services in the United States is not as much of a stigma as it is in the Arab culture.

An interesting finding in this study was the inability of mothers to differentiate between a psychiatrist and a psychologist, except for the one mother who is a psychologist herself. Lack of familiarity with the mental health care system may affect attitudes toward seeking professional help for their children. Lack of knowledge about the differences between a psychologist and a psychiatrist is supported in the literature. In a study conducted by Al-krenawi and Graham (1999), the authors found that individuals from Arab origins had a difficult time differentiating between psychiatrists and psychologists. The participants in that study had problems identifying the services offered by each profession, which contributed to the participants' reluctance to seek help from either of these professionals.

Another barrier to seeking mental health services among Arab immigrant Muslim mothers was their concern about the treatment modalities available for children with ADHD. In the current study, mothers reported that they supported behavioral treatment modalities but were against medication. Mothers' knowledge about the medication treatment was superficial, as they reported media and friends as their source of information about medication and the side effects of these medications. The only mother in this study with two children diagnosed with ADHD (and they are on medication) reported that she supports using both behavior treatment and medication. This mother explained that at the beginning, she refused to give the medication to her children, but then when the behavior treatment was not effective, she agreed to try the medication. It was after this that she started to notice an improvement in her children's behaviors. Gage and Wilson (2000) conducted a study to investigate the treatment acceptability options among 30 parents of children with ADHD and 30 parents of children without ADHD. Gage and Wilson found that behavioral treatment was generally acceptable to parents of children without ADHD, while parents of children with ADHD preferred a combined treatment over using either modality alone. Given the fact that the majority of the mothers in the current study did not report having children with behavioral problems that might explain their preference of behavioral treatment over medication, as the Gage and Wilson study results suggested.

Other studies conducted to explore parental acceptability for behavioral and medication treatment among children with ADHD are in contrast with the Gage and Wilson results as they report that parents of children with ADHD preferred behavioral treatment over medication. For instance, Krain and colleagues (2005), in their study of fifty-five families whose children received an evaluation for ADHD, found that 89.1% of parents rated behavior therapy as more acceptable than medication in treating children with ADHD, while only 47.3% rated medications as acceptable (Krain, Kendall, & Power, 2005). Parental acceptance for behavioral treatment over medication treatment

was also reported in a study conducted by Johnston and colleagues (2008), in which they examined the acceptability of behavioral and pharmacological treatments for ADHD among 109 mothers of children with ADHD, the mothers in their study varied in their ethnicity (e.g. 86% described their ethnicity as Canadian-European, 3% as Asian, 2% as First Nations, and 9% reported a variety of other ethnicities) (Johnston, Hommersen, & Seipp, 2008).

Despite the fact that many studies examined parental preferences for ADHD treatment modalities, no study explored the reasons behind these preferences. It has been proposed that parents' views of medication treatment for ADHD are not based on any scientific evidence; rather, their views may reflect concerns about side effects or stigma in taking medication (Krain et al., 2005). The current study confirmed this when mothers shared their concerns about using medication to treat ADHD because of the potential side effect of these medications. Although mothers were not able to speak of the medications' side effects, they reported that they had heard that medications affected children negatively. The findings from the current study add to the limited studies that examine parental treatment preferences for ADHD by minority groups.

Service Utilization

The final step in the HSBM is Service utilization and this was not addressed in the current study. Future research is needed to address this among Arab immigrant Muslim mothers. The assessment of service utilization patterns among ethnic minorities involves an organized evaluation of the types of services accessed by families who have children with ADHD. It is essential to have information about the type of services accessed by minority groups, as well as the type of services that are accessed first (Eiraldi & Diaz, 2010), because data regarding these patterns are valuable in developing strategies to

decrease barriers and facilitate the search for interventions among families of different cultural backgrounds.

Aim Three: Major Findings

In the present study, trend differences in results by length of stay in the U.S. showed that cultural background may impact the way mothers perceive and respond to problematic behaviors. For example, mothers who had the shortest length of stay in the United States were less often able to recognize the problematic nature of the child's behaviors. Mothers' selections from whom they would seek help varied by the mothers' length of stay in the U.S. For instance, mothers who spent less time in U.S. more frequently reported seeking help from families and friends, while mothers who lived longer in the U.S. did not report seeking help from families and friends; rather, they reported seeking help from schools and family physicians, and they were not reluctant to seek help from mental health providers (psychiatrist/ psychologist).

These findings may be explained by the cultural beliefs and the acculturation process among these mothers, as mothers who lived longer in the U.S. may be more acculturated than mothers who lived in the U.S. for shorter time periods. The role of culture is considered important in the help-seeking process at every stage among minorities in the U.S. (Cauce et al., 2002; Eiraldi et al., 2006). According to Cauce et al. (2002), who studied the cultural and contextual factors affecting ethnic minority adolescents' pathways into services for mental health disorders, the researchers argued that culture is viewed as permeating the entire help-seeking process. They also argued that cultural norms impact the problem recognition, decision to seek help, and service selection and utilization (Cauce et al., 2002).

The influence of cultural values on the attitudes toward mental health services among immigrant Arab individuals has been reported in the literature. For example, Haque-Khan (1997) conducted a qualitative study to assess Muslim women's attitudes

toward mental health services. The results of the study indicated that the less acculturated women were much less likely to seek mental health services than were those who were highly acculturated. Additionally, Arab immigrants were found to demonstrate less familiarity with western models of mental health problem treatments and the nature of the health care system in these countries (Erickson & Al-Timimi, 2001; Al-krenawi, 2002, Al-krenawi, Graham, & Kandah, 2000).

Among other ethnic minorities, studies emphasized the effect of acculturation and the individuals' health attitudes. For example, in an original study of Mexican-American adults, Wells et al. (1989) divided the sample into low- and high-acculturation groups. The researchers found that adults with low acculturation had a significantly lower probability of seeing a doctor for physical or emotional concerns than those with high acculturation (Wells, Golding, Hough, Burnam, & Karno, 1989). In another study, Pachter and Weller (1993) found that Latino parents caring for children with asthma and who had low acculturation were less compliant with treatment regimens than high-acculturation parents (Pachter & Weller, 1993). Furthermore, there is a gap in literature investigating the acculturation process among Arab immigrants in terms of child mental health problems in general, and how Arab Muslim cultural values are related to the acculturation process and health services more widely. How the acculturation process impacts Arab families and their perceptions of children's behavioral problems in specific has not been investigated. It is also worth noting that no studies have been conducted to assess the impact of acculturation on parental decisions to seek help for ADHD specifically (Eiraldi et al., 2006).Thus, there is a need for more research in this area to capture the importance of the level of acculturation and its impact on attitudes about and health seeking behaviors for mental health illnesses among Arab immigrants. It is important to consider the preceding discussion with caution, because in the current study there were only five women in the >10 year group, and of those one mother has two sons

diagnosed (in the U.S.) with ADHD and another mother is a psychologist. Therefore the trends we see in the current data may not be related to length of stay in the United States.

An interesting finding in the current study was that the majority of the mothers stated that they had never heard of ADHD before they came to the U.S. Mostly, mothers' sources of information about this disorder were the media and friends. Some mothers heard about it during the course of their education. In general, mothers demonstrated some knowledge about ADHD, even though they were not able to specifically name the behaviors as ADHD. This finding is important as it supports the idea that even though Arab researchers were able to report prevalence rates of ADHD in Arab children, it is unknown whether parents who completed the studies' instruments recognized the listed behaviors as ADHD. This idea was also supported in the current study, as all mothers reported that ADHD or any other behavioral problems are not recognized as such in their home countries. Mothers explained that people back home perceive the problem behaviors as misbehaviors resulting from inappropriate parenting. The idea that the majority of parents and individuals in Arab countries lack awareness about psychological development and behavioral problems among children has been reported in the literature (Okasha, 2003).

In sum, mothers' responses in the current study varied by their length of stay in the U.S., as mothers who have been in the U.S. longer tended to adopt the current U.S. cultural traditions in dealing with a child's behavioral problems. Mothers who have been in the U.S. for short periods of time appear to hold thoughts about behavioral problems in children that are closer to their cultural norms about these behaviors.

Summary

An interesting finding in this study was the fact that even though mothers in this study did not have children with problematic behaviors, their responses of how they would respond to their children if the exhibited problematic behaviors was similar to how

mothers of children with behavioral problems responded to their children. Hence, the researcher of this study used another framework, other than the study framework, inductively to discuss the findings of this study. According to the ecological model, complex systems of families, neighborhoods, schools, and social and cultural activities are the contexts that may support or challenge child development. The model proposes that the family unit (microsystem) is the principal context where human development takes place; thus, parents play key roles in the ecological system (Bronfenbrenner & Morris, 2006). Some researchers considered parents as "gatekeepers" to health services for children (Bussing, Koro-Ljungberg, Gary, Mason, & Garvan, 2005). Accordingly, they are the ones most responsible for seeking help for their children who have emotional and behavioral problems. According to the ecological model, parents and their parenting strategies are critical component because they shape the child's developmental process and experiences within his/her immediate environment (Bronfenbrenner & Morris, 2006). Accordingly, parental beliefs are influenced by the broader culture (macrosystem), as the later plays a significant role in shaping the parenting process. In the current study, the results indicated that mothers tried to deal with the problem behaviors within the context of family first, until they reached a trigger point where they decided to seek help out of the family context. Mothers in this study talked about using several parental strategies to deal with the child's behaviors, the proposed strategies were influenced by the mothers' family's traditions. When the mothers' parental strategies did not help them dealing with the child's behaviors their responses indicated that they would move to the other spheres of the ecological model (e.g. community). For example, mothers talked about going to school for help and if there was a recommendation of seeing a physician they did indicate that they would seek help from physicians too.

Cultural beliefs influence the way parents perceive the proper skills and competencies that their children should develop in order to fit in and function effectively within the culture. Parents tend to adopt culturally-shaped childrearing values to nurture

their children, with the aim that children achieve specific developmental goals (Rubin & Chung, 2006). In the ecological systems model, parental behavior toward child behavior is highly motivated by the parents' cultural beliefs about appropriate child behavior as well as parenting strategies for specific behaviors.

In the present study, mothers' responses were influenced by their cultural beliefs and values. For example, mothers' responses for the child's problem behaviors were influenced by their cultural beliefs of appropriate childrearing values. Also, mothers talked about tolerating the child behaviors until a certain point where they realize that they cannot deal with the behaviors and they would seek help for the child. Such tolerance may be derived from their cultural beliefs that mothers are the ones who are responsible for the child's behaviors. The present study results revealed that if the parents recognized that a child is experiencing behavioral problems, they were the ones who might hinder or facilitate the help-seeking and the treatment process for the child. Moreover, if parents recognized problematic behaviors, they tended to seek beyond the family context to modify the child's behaviors. Also, as parents become more confident in their surroundings and the available services, they tend to seek help for the child from outside the family (e.g. school, physicians, etc…). Also, parental beliefs and knowledge about the type of services available for children with problematic behaviors was the key for pursuing the appropriate service and so helping the child in dealing with the problematic behaviors. As presented in the current study findings, parental cultural beliefs about mental health services played a role in the mothers' decision on seeking help from this venue. So to remedy the situation appropriate programs should be implemented to educate those parents about the nature of the mental health professional work (e.g. the kind of treatment they provide, how to reach them, how they could help, etc…). On the other hand, programs should be conducted to educate the mental health professional about the Arab cultural beliefs and the appropriate method of approaching those parents for treatment.

In summary, all the ecological system levels are interacting with each other to shape the child's development and the parental strategies and responses toward the child's behaviors and development. Furthermore, as the parents become more confident and familiar with their surrounding they tend to go beyond their comfort zone to reach out for the available resources in their community.

Study Limitations

The results of the present study should be interpreted with caution because of the study's limitations. One limitation of this study was that the majority of the participant mothers did not have children with an ADHD diagnosis or any other type of externalizing behavior disorder. Thus, the presented results may not represent the perceptions of parents of children who have ADHD or another disruptive behavior diagnosis. Other researchers reported that the perceptions of parents who have children diagnosed with ADHD differ from parents who do not have children with ADHD (Diaz, 2009; Gerdes & Hoza, 2006; Johnston & Freeman, 1997; Johnston, Chen, & Ohan, 2006). For instance, when talking about the causal attributions of ADHD behaviors, parents of children with ADHD more often attribute the behaviors to biological causes (e.g., genetic or neurological problems), and parents whose children do not have ADHD attribute behavior problems to non-biological factors (e.g. environmental factors) (Bussing, Schoenberg, & Perwien, 1998; Bussing, Gary, Mills, & Wilson Garvan, 2003; Johnston, Chen, & Ohan, 2006). Also, mothers of children with ADHD may have more emotional reactions towards their child's behaviors than mothers of children without ADHD. Therefore, mothers of children without ADHD may perceive and respond differently to a child's problematic behaviors, and they may also have different perspectives about how to address such behaviors (Johnston, Chen, & Ohan, 2006). As a result of these differences, the researcher could consider conducting a study with Arab immigrant

Muslim mothers who have children diagnosed with ADHD to elicit their perceptions of children with ADHD.

Another limitation of the current study was that mothers' perceptions and responses were elicited using vignettes of the behaviors associated with ADHD and ODD, and vignettes may not elicit the same reactions as actual child behaviors. However, use of behavioral vignettes is one of the most frequent methods for assessing parental attributions regarding behavior (Bickett, Milich, & Brown, 1996; Johnston et al., 2006), mainly because vignettes permit standardization of the behavior to which parents are asked to respond. Future studies might use videotapes of actual children displaying problem behaviors and ask parents to respond to questions similar to those used in this study. This approach may be more accurate for understanding parents' perceptions and responses to problematic behaviors.

The main limitation of this study was excluding the perceptions of fathers about children's behavioral problems. In other studies mothers and fathers were found to differ in their ratings of children's behavioral problems (Chi & Hinshaw, 2002; Duhig, Renk, Epstein, & Phares, 2000). As a result, their perceptions of these behaviors as being problematic and their choice of help-seeking decisions may also differ. Such differences may affect the decision for seeking help for the child and thus exaggerate the effects of the problem behaviors exhibited by the child. In the Arab culture, Arab families tend to be male dominant, where men are considered the heads of the house and thereby have the final word in any family decision (Aroian, Katz, & Kulwicki, 2006). Therefore, even if mothers recognize the problematic behaviors in their child, they cannot make any decision until the father agrees. Hence, if the father considers the child's behaviors as non-problematic, then nothing will be done to address the child's behaviors, including proceeding with the help-seeking process. For future studies the perceptions of both parents will be sought for more in-depth information about Arab parental perceptions of ADHD.

Despite the preceding limitations, the findings from this study provide a beginning understanding of how Arab immigrant Muslim mothers perceive and respond to ADHD-related behaviors. The study findings provide a base for increasing clinical understanding and future research to explore Arab immigrant Muslim parents and children with behavioral problems in more depth.

Clinical Implications of the Current Study Findings

Given that this study was among the first to explore parental perceptions and responses toward children's behavioral problems in Arab immigrant Muslim mothers, the findings in the present study have important implications for clinical practices.

An important implication from the current study was that Arab immigrant Muslim mothers recognized the depicted behaviors in the vignettes and the ADHD symptoms on the checklist as problematic, even if they did not necessarily label such behaviors as ADHD or any other behavioral problem. Given the importance of problem recognition and treatment of children with ADHD and other behavioral problems, it is crucial to implement culturally sensitive educational programs that improve parents' abilities to identify problems and provide information about the available resource services, in hopes of increasing the likelihood of getting assistance to those children who are in need of help. An example of one such educational program would be the development of workshops (e.g. in Schools, Mosques, Community Centers,…) that are coordinated by bilingual (speaking Arabic and English) individuals to talk about children behavioral problems (e.g. ADHD). Having a bilingual person to communicate with Arab parents helps those Arab parents who have problems in speaking or understanding the English language. Furthermore, school teachers can develop brochures about children behavioral problems and include the available sources of help for children with behavioral problems. Another strategy would be to conduct educational programs that include using a video tape of an Arab child with behavioral problems and then ask parents to watch it and ask

them to discuss their thoughts and descriptions of the presented behaviors. Another strategy would be to conduct workshops that use focus groups to educate parents about behavioral problems (manifestations, causes factors, treatment modalities, and help sources). The focus groups may include Arab immigrant Muslim parents of children diagnosed with ADHD (or other behavioral problems).

Mothers in this study indicated they would seek services for their children at different times. Several factors contribute to when and if help-seeking would occur. Therefore, the present study served to provide information about when parents seek help and what kind of help they seek. This is important for health care providers, as such findings shed light on the importance of professional recognition and understanding of the factors that may influence Arab families' attitudes toward childhood behavioral problems and, specifically, ADHD. This study provided information about the Arab Muslim cultural and traditional views concerning perceptions of children's behavioral problems, since the Arab culture tends to play a significant role in shaping an Arab individual's attitudes and behaviors, particularly when it comes to children's mental health issues. Therefore, in order to provide good care for individuals, health care professionals working in the mental health field should take into account Arab immigrant Muslims' cultural and traditional beliefs about behavioral problems as well as barriers for seeking professional help for children with behavioral problems. Furthermore, they should educate themselves about Arab and Muslim cultural and traditional beliefs, as this will mediate the relationship between the need for professional mental health services and Arab Muslim help-seeking attitudes toward mental health services.

This finding adds to the body of literature about Arab immigrant Muslims and school because there is no study that examines Arab immigrant Muslim mothers' utilization of school services to address the child's behaviors (e.g. seeking the advice of school teachers and counselors) in the United States. Also, this finding is important because it supports the importance of developing programs inside the schools to educate

mothers about child behavioral problems and the availability of community resources available to help families.

The current study findings demonstrated that Arab immigrant Muslim mothers indicated they would exhaust informal resources (e.g., family, school services) and other services (e.g., general physicians, pediatricians) before making contact with formal mental health service providers. An awareness and understanding of the help-seeking attitudes among Arab immigrant Muslim mothers will aid health care providers to be aware of how, when, and from whom mothers would seek help for a child's problematic behaviors. For example if the behavior problem is identified at school, Arab Immigrant families may be more willing to receive treatment from a primary care provider first. This would be important for teachers and school nurses to know because they may be the first to identify a child's behavior problems.

The finding that mothers in the present study indicated they would approach school services (e.g. seeking teachers' and school counselors' advice) for help in managing a child's behaviors is important because it highlights the importance of the role of the school system as a source of help and information for Arab immigrant Muslim parents. Thus, implementing educational workshops and programs within school systems to educate and increase the awareness of Arab immigrant Muslim parents about children's behavioral problems, the effects of these problems on the child's social life and academic achievement, the causes and factors of behavioral problems, and the available services of help in the community would be important and may impact Arab immigrant Muslims' attitudes toward children with behavioral problems and the applicable health care services available. Also, school teachers can frame a child's problematic behaviors within the academic context when communicating the child's problematic behaviors to the parents. Such an approach might highlight for parents the importance of addressing these behaviors in order to enhance educational achievement, thereby motivating parents

to actively participate in school-based interventions and other available sources of help to reduce associated impairments resulting from behavioral problems in children.

The current study reveals that Arab immigrant Muslims tend to hold less favorable attitudes toward seeking formal mental health services because of the existing social stigma associated with mental health services and a lack of knowledge about how mental health professionals can help. This, in turn, may affect their overall utilization of these services. Therefore, implementing an educational program about the benefits of mental health services in treating children's behavioral problems may help in decreasing the sense of stigma currently associated with seeking help from mental health professionals among Arab immigrant Muslim mothers.

In general, the results from this study imply that innovative and culturally sensitive strategies and educational programs are important in order to increase the Arab immigrant Muslim parents' knowledge about externalizing behavioral problems. Implementing available, accessible, acceptable, affordable, culturally-sensitive mental health services for Arab immigrant Muslim parents is believed to increase the likelihood of using these formal services and result in better intervention outcomes. Researchers suggested that services sensitive toward specific minority groups through awareness of their cultural values and beliefs may facilitate the parents' use of these services and improve attitudes toward these services (Al-Krenawi, 2002; Al-Krenawi and Graham, 2003).

Future Research

The current study points out the need for more research related to Arab immigrant Muslim parents and children's behavior problems. This study provided basic information about how Arab immigrant Muslim mothers' perceive and respond to children's behavioral problems, with a main focus on ADHD. Future research is needed in order to address the issues surrounding problem recognition and help-seeking behaviors among

this minority group. Such information should provide a basis for more evaluation and intervention programs pertaining to Arab immigrant Muslim parents.

Exploratory studies are needed to examine the help-seeking patterns for children's behavioral problems and preferred sources of help by Arab Muslim parents. Specifically, future studies should be implemented to study Arab immigrant Muslim parents' attitudes toward mental health services, barriers to seeking such services, and how to facilitate and enhance parental attitudes toward these services.

Service utilization was not addressed in the current study. Future research is needed to address this among Arab immigrant Muslim parents. It is essential to have information about the types of services accessed by minority groups, as well as the types of services that are accessed first (Eiraldi & Diaz, 2010). Data regarding these patterns are valuable in developing strategies to decrease barriers and facilitate the search for interventions among families with different cultural backgrounds.

This study provides initial data about the effect of the acculturation process on mothers' perceptions of externalizing behaviors and the source of help they would seek to address the child's problematic behaviors. Future studies should be implemented to assess the impact of acculturation on parental help seeking behaviors in Arab immigrant Muslim families whose children have ADHD.

Furthermore, future studies are needed to explore parental understandings of the causes of behavioral problems in children among Arab immigrant Muslim mothers, as researchers reported that parental understanding of the causes of the problematic behaviors does impact parental decisions to seek help (Eiraldi et al., 2006; Bussing, Schoenberg, & Perwien, 1998; Bussing et al., 2003). In the present study, mothers started to talk about what might cause a child's problematic behavior. Therefore, further research is needed to explore parental understanding of causes of behavior problems in more depth.

In future studies, researchers should include both parents when addressing Arab immigrant Muslim parents' perceptions of children with behavioral problems. It is important to elicit both parents' perceptions, understandings, and responses to children who exhibit behavioral problems to have more complete data about Arab immigrant Muslim parents' perceptions of children's behavioral problems.

Additionally, future studies should include more homogenous samples in terms of countries of origin. This approach would provide a more in-depth knowledge of the cultural beliefs and values that are unique to specific countries within the Arab world. This type of study would provide greater accuracy about the impact of cultural beliefs and values on parental recognition and the help-seeking process for children with behavioral problems among Arab immigrant Muslim parents.

Summary

Despite the limitations in this study, important information about parental perceptions of children with behavioral problems among Arab immigrant Muslims has been provided. Most importantly, mothers were able to recognize the problematic nature of the behaviors depicted in the study vignettes and described on the ADHD checklist. The findings of the current study provide preliminary information for health care and education professionals as well as researchers about help-seeking patterns and the parental-cultural beliefs and norms that might facilitate or hinder the pursuit of help for children who may suffer from behavioral problems. An interesting approach in this study was the fact that even though mothers in this study did not have children with problematic behaviors, their responses of how they would respond to their children if the exhibited problematic behaviors was similar to how mothers of children with behavioral problems responded to their children. Hence, the researcher of this study was delighted to use another framework, other than the study framework, inductively to discuss the findings of this study.

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APPENDIX A: DEMOGRAPHIC QUESTIONNAIRE

1. Age: _____

2. How many children do you have? _____

3. How old are your children (list all ages): _____

4. What is your employment status? [Circle one]

    a. Full Time

    b. Part Time

    c. Unemployed

    d. Student

5. What is the highest level of school that you completed? [Circle one]

    a. Grade School (6th grade or less)

    b. Some High School (11th grade or less)

    c. Graduated from High School

    d. Some College

    e. Graduated from College

    f. Graduate/Professional School

6. What is your country of birth?

☐ Algeria	☐ Bahrain
☐ Egypt	☐ Iraq
☐Jordan	☐ Kuwait
☐ Lebanon	☐ Libya
☐ Morocco	☐ Oman
☐ Palestine	☐ Qatar
☐ Saudi Arabia	☐ Sudan

☐ Syria ☐ Tunisia

☐United Arab Emirates ☐Yemen

7. How many years have you lived in the United States? _____ years

APPENDIX B: INTERVIEW GUIDE REGARDING PARENTAL RESPONSES TO HYPOTHETICAL BEHAVIORAL VIGNETTES

The following vignettes will be used to elicit information specific to the study Aims one and three:

Part one of the questions will be used to address specific *Aim 1***:** Explore how Arab immigrant Muslim mothers describe and manage children who display externalizing behaviors (e.g. inattention, impulsivity, hyperactivity, and oppositional).

Part two of the questions will be used to address specific *Aim 3***:**

Compare Arab immigrant Muslim mothers' perceptions of the diagnosis and management of ADHD with western cultural practices in diagnosis and management.

Verbal instructions to participant: I am going to tell you a brief story. Please listen carefully to the behaviors I describe. After I tell you the story, I will ask you to answer some questions.

Vignette (1)

A 7 years old child is the middle of 3 children (Brother aged 9 years, sister aged 4 years). He/she is often described as being disruptive in class and occasionally acting aggressively towards other children. Also, he/she is having a lot of trouble getting his/her chores done and completing his/her homework because he/she gets easily distracted and has difficulty following instructions. He/she is having a lot of trouble paying attention in school too. Due to his/her problems in class the teacher has had several contact with his/her family and she was complaining about his/her and say that he/she often makes careless mistakes when he/she does his/her schoolwork and tries to avoid doing things that require him/her to focus for too long. The teacher reported also, that when he/she sits down to do his/her schoolwork, he/she has trouble staying in his/her seat and moves around a lot. The teachers say that this disturbs the other students and makes it difficult

for the teacher to teach. Also, he/she runs around a lot and makes a lot of noise, even when he/she is playing by him/her self.

Question (to be asked following the vignette):

After reading/hearing this case scenarios: the following questions will be asked to address specific *Aim 1*: Explore how Arab immigrant Muslim mothers describe and manage children who display externalizing behaviors (e.g. inattention, impulsivity, hyperactivity, and oppositional).

1. How would you describe these behaviors?
2. What do you think of these behaviors?
3. What would you call these behaviors?
4. Do you feel that there is a child who you know that exhibits any of these behaviors?
5. How do you feel when these behaviors occur by your child or any other child?
6. How would you respond to these behaviors, if your child exhibits them?
7. How would you manage these behaviors, if your child exhibits them?
8. Do you consider this child as having a problem that demands professional help?
9. If so, would you seek professional help to treat this child?

To address specific *Aim 3:* Compare Arab immigrant Muslim mothers' perceptions of the diagnosis and management of ADHD with western cultural practices in diagnosis and management. The following questions will be asked:

10. How would you act toward this child if you are in your own home country?

11. If you were in your home country how would people respond and perceive such child's behaviors?

Vignette (2)

An 8 year old child; he disobeys his/her parents and other adults a lot. He/she often refuses to do things he/she is been asked to do, such as picking up his/her toys or cleaning up his/her room. When his parents ask him/her to do something he/she often has a temper tantrum which includes yelling and throwing things. If anything breaks during a temper tantrum he/she sometimes yells at and blames other people. He/she argues with his parents a lot, especially when he/she doesn't get his/her own way. Also, he/she often described by his/her parents and his/her teacher that he/she does things to bother other kids, such as poking them over and over to make them cry. Every time his/her parents try to talk to him/her about his behavior, he/she gets touchy and annoyed.

Question (to be asked following the vignette):

After reading/hearing this case scenarios: the following questions will be asked to address specific *Aim 1*: Explore how Arab immigrant Muslim mothers describe and manage children who display externalizing behaviors (e.g. inattention, impulsivity, hyperactivity, and oppositional).

1. How would you describe these behaviors?
2. What do you think of these behaviors?
3. What would you call these behaviors?
4. Do you feel that there is a child who you know that exhibits any of these behaviors?
5. How do you feel when these behaviors occur by your child or any other child?
6. How would you respond to these behaviors, if your child exhibits them?

7. How would you manage these behaviors, if your child exhibits them?
8. Do you consider this child as having a problem that demands professional help?
9. If so, would you seek professional help to treat this child?

To address specific *Aim 3:* Compare Arab immigrant Muslim mothers' perceptions of the diagnosis and management of ADHD with western cultural practices in diagnosis and management. The following questions will be asked:

10. How would you act toward this child if you are in your own home country?
11. If you were in your home country how would people respond and perceive such child's behaviors?

APPENDIX C: INTERVIEW GUIDE REGARDING PERCEPTIONS OF DSM-IV ADHD SYMPTOMS

The following tool and the guideline questions will be used to elicit information from mothers about specific aims two and three.

Aim 2: Examine Arab immigrant Muslim mothers' understanding and perceptions of the diagnosis of ADHD. Will be addressed by the questions in group one.

Aim 3: Compare Arab immigrant Muslim mothers' perceptions of the diagnosis and management of ADHD with western cultural practices in diagnosis and management. Will be addressed by the questions in group two.

Verbal instructions to participant: I will ask you about your description of each one of these behaviors and what each one means to you. [Instructions should be repeated throughout as needed; each item will be read out loud to participant]

Behavior Description
1. Fails to give close attention to details or makes careless mistakes in his/her work
2. Fidgets with hands or feet or squirms in seat
3. Has difficulty sustaining his/her attention in tasks or fun activities
4. Leaves his/her seat in classroom or in other situations in which seating is expected
5. Doesn't listen when spoken to directly
6. Seems restless
7. Doesn't follow through on instructions and fails to finish work
8. Has difficulty engaging in leisure activities or doing fun things quietly
9. Has difficulty organizing tasks and activities

10. Seems “on the go” or “driven by a motor”
11. Avoids, dislikes, or is reluctant to engage in work that requires sustained mental effort
12. Talks excessively
13. Loses things necessary for tasks or activities
14. Blurts out answers before questions have been completed
15. Is easily distracted
16. Has difficulty awaiting turn
17. Is forgetful in daily activities
18. Interrupts or intrudes on others

Now I will ask you some questions about these behaviors.

The following questions will be used to address Aim 2**:** Examine Arab immigrant Muslim mothers’ understanding and perceptions of the diagnosis of ADHD. Will be addressed by the questions in group one.

1. In general, how do you describe these behaviors?
2. What would you call it?
3. How would you respond if your child exhibits these behaviors, why?
4. Would you seek professional help for this child?
5. How would you feel if a teacher or other professional wanted to talk to you about your child’s behavior?
6. Have you ever heard about/of ADHD?
7. If yes, what do you know about the disorder?
8. From whom did you hear about the disorder?

9. What does Attention Deficit/Hyperactivity Disorder mean to you? (Please explain your understandings of ADHD)?
10. Would you consider it a mental health problem?

The following questions will be used to address Aim 3**:** Compare Arab immigrant Muslim mothers' perceptions of the diagnosis and management of ADHD with western cultural practices in diagnosis and management.

11. In your home country is ADHD disorder recognized?
12. Do many people know about it?
13. What would people call it?
14. How do people perceive a child who exhibits these behaviors?
15. How do they treat it?
16. In your home country, what would the parents do if the child exhibits these behaviors?
17. How is ADHD treated and managed in the US?
18. If the participants do not know how ADHD is treated and managed in the US, the researcher will state that "in the US, children who exhibit these behaviors they would be diagnosed with ADHD and they would be treated with medication and other modalities. Also, such disorder is well recognized in this country".
19. What do you think of how is ADHD is being treated and managed in the US?