A Survey on Prevalence Rate of Attention-deficit Hyperactivity Disorder among Elementary School Students (6-7 years old) in Tehran

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Abstract

Attention deficit hyperactivity disorder (ADHD) is one of the most common mental disorders that develop in children. This study has been performed to assess the prevalence of attention deficit hyperactivity disorder (ADHD) among the elementary School students in Tehran. 1000 elementary school students (380 boys and 620 girls) in Tehran were used as sample of this study. Parents of the students filled the 18-item SCI-4 questionnaire for ADHD. The results showed the prevalence rate for attention deficit (AD) = 4.1%, hyperactive impulsive (HI) = 4.7%, and combined type (CT) = 1.7%. The prevalence rate of ADHD in boys was higher than girl students. The rate of probable attention deficit hyperactivity in Tehran is nearly similar to other counties and it is more common in boys than girls. Interview with different informants (teacher report) of child behavior are needed for documentation of diagnosis.

Keywords: First Attention-Deficit Hyperactivity disorder (ADHD), Prevalence, elementary students;

Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most common mental disorders that develop in children and becomes apparent in the preschool and early school years. (Scahill, Schwab-Stone ,2000, Polanczyk , et al,2007). It is described as the persistent condition of carelessness, hyperactivity, and impulsivity in children and is mostly associated with psychosocial consequences, especially when ignored (Burger, Lang ,1998). The core symptoms of ADHD include inattention, hyperactivity, and impulsivity (Barkley, 1996, Reiff, Banez, Culbert, 1993).

Children with ADHD may experience significant functional problems such as school difficulties, academic underachievement (Zentall ,1993), troublesome interpersonal relationships with family members (Almond, Tanner, Goffman, 1998) and peers, and low self-esteem. Children with ADHD may continue to show symptoms as they enter adolescence and adulthood (Biederman and et al, 1996). Data about prevalence of ADHD in Children with ADHD have been shown to be at increased risk for a broad range of negative outcomes, including depression,

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The diagnosis of ADHD is based on criteria specified by the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM-IV). A set of guidelines for the diagnosis of ADHD and its treatment in the primary health care setting was developed. According to these collaborative guidelines, the diagnosis of ADHD should be based on information obtained from parents, school, and health professionals who may have been consulted, along with an interview and examination of the child (American Psychiatric Association, 1994, Committee on Quality Improvement, 2000).

The prevalence rate of ADHD is a controversial matter. Although the DSM-IV gives an interval of between 3% to 5%, possibly the value most widely accepted by the scientific community, there is in fact a very high degree of variability. Several literature reviews have reported highly variable rates worldwide, ranging from as low as 1% to as high as nearly 20% among school-age children (Bird, 2002, Swanson and et al. 1998). ADHD manifests in approximately 4-12% of children between the ages of 6 and 12 years (Brown, et al., 2001). Several studies estimated a prevalence of ADHD of 4-8% in USA (Subcommittee on ADHD and Committee on Quality Improvement, 2001), 7.6% to 9.5% in Korea (Chae, Jung, Noh, 2001), 10-20% in India (Malhi, Singhi, 2000).

Awareness of the epidemiology of ADHD in Iran helps us to plan the allocation of funds for mental health services in a more effective manner. Early diagnostic and treatment of ADHD might improve educational and psychosocial development of these children.

The aim of this study was to determine the prevalence of ADHD among elementary children in Tehran.

Methods

Participants

This study was undertaken in elementary schools in Tehran. 40 elementary schools were selected by multistage (stratified cluster random) sampling from 2 educational distinct of Tehran and 1000 students (620 girls and 380 boys) were selected and the questionnaire were given to the parents of students. Participation in the study was voluntary and anonymous and the participants were assured that the information collected was confidential.

Instrumens

The ADHD checklist of child symptom inventory-4 (CSI-4) was used for assessment of ADHD symptoms. It is a screening test for behavioral symptoms of many DSM-IV children disorders including ADHD. The ADHD symptoms contained 18 items including nine for ADHD-I, and nine for ADHD-II; all of the items are used for ADHD-C. Each symptom was scored on a Likert scale consisting of four choices of “never,” “sometimes,” “often,” and “almost always.” The scoring procedures for screening is through counting the symptoms (categorical model) with a score of 0 for “never/sometimes,” and 1 for “often/ almost always.” The maximum score is nine and minimum score is zero for each dimension. Students with total scores of ≥6 on the “inattention” dimension were considered to have probable inattentive types of ADHD (ADHD-I). Students with scores of ≥6 on the “hyperactivity impulsivity” dimension were considered to have hyperactive-impulsive type of ADHD (ADHD-HI). Students with scores of ≥6 on both dimensions were regarded as having combined type of ADHD.

The ADHD checklist of CSI-4 had been translated to Persian and back translated into English. Its content validity had been confirmed by several child and adolescent psychiatrist and psychologists. Its convergent and discrimination validities were enough. The alpha coefficients were found to be 0.81, 0.85, and 0.83 for DSM-IV ADHD-I, ADHD-II, and combined type of ADHD (ADHD-C), respectively (Alipour, Esmaile, 2004, Ghanizadeh 2008).
has and specificity for each of the subtypes of predominantly inattentiveness, predominantly hyperactive impulsiveness, and combined type (Alipour, Esmaile, 2004).

**Procedure**

The parents of students were asked to fulfill the DSM-IV ADHD Checklist. They received and returned back the checklist within one week through the school.

**Results**

The overall prevalence of types of ADHD was shown in table (1), with a prevalence of 4.1% for inattention disorders, 4.7% for hyperactivity impulsivity, and 1.7% for combined ADHD.

The prevalence of hyperactivity impulsivity and combined ADHD in boy students are higher than girl students.

<table>
<thead>
<tr>
<th>ADHD type</th>
<th>Girl(n=620)</th>
<th>Boy(n=380)</th>
<th>Total(n=1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inattentive types</td>
<td>21 (2.1%)</td>
<td>20 (2.0%)</td>
<td>41 (4.1%)</td>
</tr>
<tr>
<td>Hyperactive-impulsive type</td>
<td>22 (2.2%)</td>
<td>25 (2.5%)</td>
<td>47 (4.7%)</td>
</tr>
<tr>
<td>Combined type</td>
<td>6 (0.6%)</td>
<td>11 (1.1%)</td>
<td>17 (1.7%)</td>
</tr>
</tbody>
</table>

**Discussion**

This study provided a detailed report about prevalence of ADHD, in a large sample of Iranian elementary school in Tehran. Using parental reports, the prevalence rate of ADHD was 4.1% for inattention disorders, 4.7% for hyperactivity impulsivity, and 1.7% for combined ADHD. This study was consistent with previous findings about the rate of ADHD disorders that were more common among boys than girls, which has been noted in other populations as well (Martin, Volkmar, Lewis, 2007, Freeman, 2007).

The results of our study suggest that the Prevalence of ADHD symptoms in Iran is very similar to other countries (Ghanizadeh, 2008).

Based on a systematic review conducted around the world the ADHD/HD worldwide -pooled prevalence was 5.29%. Although this estimate was associated with significant variability depending on the diagnostic criteria, source of information, requirement of impairment for diagnosis, and geographic origin of the studies, but since questionnaire used in our study was primarily a screening device, it seems that what eventually will be compared is the percentage of children at risk whose diagnosis shall be confirmed by a psychiatrist interview (Polanczyk and et al., 2007).

In two different places of Iran, North-East and some parts of Tehran the prevalence of hyperactivity and attention and concentration deficit was estimated to be 12.3% and 11% respectively (Polanczyk and et al, 2007, Ardalan, Farhud, Shahmohammadi, 2002). The perceived difference in our results can be related to different tools we used in the research.

There were some constraints in the process of data collection. As a result, generalization of our data may be limited and may not be reflective of the broader elementary school population.
References


