<table>
<thead>
<tr>
<th><strong>Title</strong></th>
<th>Screening for autistic spectrum disorder at the 18-month developmental assessment: a population-based study</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Author(s)</strong></td>
<td>VanDenHeuvel, A.; Fitzgerald, M.; Greiner, Birgit A.; Perry, Ivan J.</td>
</tr>
<tr>
<td><strong>Publication date</strong></td>
<td>2007-09</td>
</tr>
<tr>
<td><strong>Type of publication</strong></td>
<td>Article (peer-reviewed)</td>
</tr>
<tr>
<td><strong>Item downloaded from</strong></td>
<td><a href="http://hdl.handle.net/10468/90">http://hdl.handle.net/10468/90</a></td>
</tr>
</tbody>
</table>

Downloaded on 2022-05-23T17:39:21Z
In summary, we have shown that the CHAT instrument, administered by public health nurses at the 18-month developmental follow-up, is a sensitive screening tool for autism. The use of the CHAT within the broader context of developmental infant screening deserves further consideration. For example, Honda and Shimizo reported that the CHAT instrument has been administered to infants at 18 months of age. Primary health care providers can administer the CHAT. Therefore it can be used as a screening tool for autism in the 18-month developmental assessment in the UK and has been shown to identify potential cases of autistic spectrum disorder for full diagnostic assessment. The CHAT instrument has not been widely used in this age group in Ireland to date. We report findings from a population-based screening study using the CHAT instrument in a sample of 2117 infants presenting to public health nurses for 18-month developmental assessment.

Methods

Sample Group

We used a cross-sectional study design. All Public Health Nurses (PHNs) who worked in counties Cork and Kerry during the target year were sent an information letter and asked to approach agreed to participate (n=2117). 51% of infants administered the CHAT were male (n=1088) and 49% were female (n=1029). The socio-demographic distribution of the study sample (n=2117 with available data) was broadly representative of the children of the Former Southern Health Board area (Cork & Kerry) based on 2002 Census data, allowing for sampling variation (Figure 1).

Each completed CHAT was scored by the PHN into one of three categories: high, medium or low risk for autism. If an infant scored medium or high risk for autism at the first administration, a second screening was administered approximately one month later. All second screenings were administered by the same PHN that conducted the first screening. A total of 7 children received a diagnosis of autism: an overall prevalence of clinically diagnosed autism of 33.1 per 10,000 (95% CI: 13.3 to 68.0). No information was obtained on five of the 10 infants who were eligible, but did not participate in a second screening.

Discussion

This study represents the first assessment of the feasibility of routine administration of the CHAT instrument as a screening tool for autism in an Irish sample of children aged between 18 and 20 months, attending for routine developmental assessment. The findings suggest that use of the CHAT questionnaire is feasible in this setting and that a significant number of autism cases can be detected.

In the UK, Baron-Cohen et al.14 screened 16,235 infants at 18 months using the CHAT instrument. They reported a significant screening rate for autism (medium or high risk CHAT score) of 251 per 10,000 (95% CI: 226-274) following the first administration of the instrument, a somewhat higher rate than that observed in this sample: 137.0 per 10,000 (95% CI: 91.9 to 196.1). As in the current study, a significant proportion of children who screened positive on first assessment did not return for a further assessment. In the UK study, children who scored medium or high risk after two screenings (n=32) were given full clinical assessments at 42 months and 10 cases of autism were diagnosed. Thus the yield in terms of proportion of children who received a positive diagnosis was high relative to the earlier UK study. However, comparisons between the two studies are constrained by the differences in sampling strategies and drop out rates. The inclusion of public health nurses in routine clinical practice, but with formal training in the use of the CHAT instrument, represents a significant difference in the breadth of the study. However, the relatively small sample size is a significant limitation. Although a good response rate for first-time screening was achieved (79%), the sample was small for the relatively rare condition of autism limiting the precision of the prevalence estimate. Thus a precise and accurate estimate of the true rate of autism in the catchment area could not be derived from the study.

Furthermore, the diagnostic test performance of the CHAT instrument limits the accuracy of the prevalence estimate of autism. It is reported to have a sensitivity of 38% and specificity of 98% for identifying autism in this age group. Although high specificity is reassuring, the sensitivity of the CHAT instrument has been underestimated. We were not able to determine the overall diagnostic performance for the CHAT because the diagnostic classification of autism was based on parental observations of the infant.14 The PHNs collected additional socio-demographic data including data on parents’ occupation(s), parents’ age, child’s birth order and child’s birth status (single or twin).

The CHAT instrument was employed in data collection. This is a 14 item interviewer-administered instrument divided into two parts. The first part related to the infant and the second part related to the socio-demographic characteristics of the infant.14 The PHNs collected additional socio-demographic data including data on parents’ occupation (s), parents’ age, child’s birth order and child’s birth status (single or twin).

Participating PHNs administered the CHAT at the 18-month developmental check. The socio-demographic questionnaire was self-completed by the parents. Detailed parental information was used for routine observations of the infant. The PHNs collected additional socio-demographic data including data on parents’ occupation(s), parents’ age, child’s birth order and child’s birth status (single or twin). The CHAT instrument was employed in data collection. This is a 14 item interviewer-administered instrument divided into two parts. The first part related to the infant and the second part related to the socio-demographic characteristics of the infant.14 The PHNs collected additional socio-demographic data including data on parents’ occupation(s), parents’ age, child’s birth order and child’s birth status (single or twin).
and simple instrument for PHNs to use. Given the evidence that early diagnosis improves prognosis in autism\(^1\) there is a clear need for further work addressing the use of the CHAT instrument in routine developmental assessment in Ireland.

References


Like to thank Clara McGarvey for her assistance in the initial stages of the project, the Public Health Nurses who kindly assisted with data collection and parents who participated in the study.

Comments: Birgit A Greiner<br>Department of Epidemiology & Public Health<br>University College Cork<br>Brookfield House<br>Email: b.greiner@ucc.ie

Acknowledgement: No References