
Deafness and autism spectrum disorders: speech therapy evaluation for the differential diagnosis

Surdez e transtornos do espectro do autismo: reflexões sobre a avaliação fonoaudiológica para o diagnóstico diferencial

Sordera y trastornos del espectro autista: reflexiones sobre la evaluación fonoaudiológica para el diagnóstico diferencial

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Abstract

Considering that children under diagnostic investigation for autism spectrum disorders (ASD) should conduct full audiological assessment to establish the differential diagnosis, the aim of this communication is to report an ASD screening intervention proposal in an audiological assessment service. An evaluation procedure was implemented so that children at risk for ASD could be detected among those that undergo audiological assessment. We highlight the potentialities revealed in this intervention with views to the differential diagnosis between deafness and ASD.

Keywords: *Speech, Language and Hearing Sciences; Hearing; Autistic Disorder; Child Development.*

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Authors' contributions: FPM (main researcher) research conception and elaboration, study design, literature review, collection and data analysis, writing and submission procedures. RRRP (collaborator) collection and data analysis, approval of the final version. DRL (collaborator) collection and data analysis, approval of the final version. MCC (research advisor) study conception and elaboration, design and data analysis, approval of the final version.

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Received: 10/05/2015

Accepted: 30/09/2015

Resumo

Considerando que crianças sob investigação diagnóstica para transtornos do espectro do autismo (TEA) devem realizar avaliação audiológica completa para estabelecimento do diagnóstico diferencial, esta comunicação tem o objetivo de relatar uma proposta de intervenção para rastreamento de TEA num serviço de diagnóstico audiológico. Foi implementado um procedimento de avaliação para rastreamento de casos de suspeita de TEA dentre os sujeitos submetidos à avaliação diagnóstica audiológica. Destacam-se as potencialidades reveladas nessa intervenção, com vistas ao diagnóstico diferencial entre surdez e TEA.

Palavras-chave: Fonoaudiologia; Audição; Autismo; Desenvolvimento infantil.

Resumen

Considerando que los niños bajo investigación diagnóstica para los trastornos del espectro autista (TEA) deben llevar a cabo la evaluación audiológica completa para establecer el diagnóstico diferencial, esta comunicación tiene como objetivo el relato de una propuesta de intervención para la detección de TEA en un servicio de diagnóstico audiológico. Un procedimiento de evaluación se llevó a cabo para rastrear los casos sospechosos de TEA entre los sujetos sometidos a evaluación diagnóstica audiológica. Se destacan las potencialidades reveladas en esta intervención, destinada al diagnóstico diferencial de la sordera y TEA.

Palabras claves: Fonoaudiología; Audición; Trastorno autístico; Desarrollo Infantil.

Introduction

The gradual increase of autism spectrum disorders (ASD) has gained attention in the health field. According to the Center for Disease Control and Prevention (CDC), in 2014 its prevalence was 01 in every 68 children, whereas in 2002 approximately 01 in 150 children presented the ASD diagnosis¹. This increase is significant and worrying from the point of view of public health policies.

The ASD are characterized by impairments in communication, social interaction, and in child's behavior². In addition to this classic triad, some recent studies have also pointed out the presence of impairments in sensory integration³⁻⁵.

Hypersensitivity to sensory stimuli, psychomotor agitation or excessive tranquility, difficulties in motor coordination, and problems with feeding and sleeping are often reported to be associated with this clinical condition^{3,5}.

The auditory modality appears as the most affected sense among the deficits in processing sensory information^{3,4}. This is also the most consensual concern among all the concerns presented by parents in the first years of life of their children with ASD⁶⁻⁸.

In other words, complaints concerning language development delays, no response to speech

sounds, no response when called by their names, and speech at increased loudness usually lead parents and health professionals to first investigate some hearing impairment in these children. Such complaints, added to perceptual deficits involving attention and memory are likely to be mistakenly interpreted as hearing problems^{7,9,10}.

For this reason, it is usually recommended that children under medical investigation for ASD diagnosis undergo complete hearing assessment in order to establish the differential diagnosis^{7,11}.

In the clinical practice, it is observed (both in public and private health services) that children commonly start attending speech-language therapy by the age of 3 to 4 years. They usually come with complaints regarding language delays and suspicion of hearing loss, with no previous investigation for ASD diagnosis.

Nevertheless, the worldwide recommended assumption is that early intervention (initiated for children under 3 and a half) has more effective results than those initiated after 5 years of age¹²⁻¹⁶.

It is known that the neonatal hearing screening programs allow the early detection of hearing loss, in the first 6 months of life¹⁷. Thus, the audiological diagnosis in older children - that may reinforce or exclude the suspicious of ASD or other development impairments - is very important, since it

makes possible conducting early intervention concerning hearing aids adaptation or psychiatric and/or psychological treatment.

In that sense, it can be considered that the diagnostic audiology services constitute a favorable field for the implementation of procedures to track the occurrence (or even the co-occurrence) of ASD; targeting early appropriate referrals and treatments, as widely recommended in the literature¹⁴⁻¹⁶. It is noteworthy that for appropriate early intervention, it is indispensable the access by the speech-language pathologists to instruments that assist them in the procedures for assessment of children with ASD.

Having made these considerations, this communication aims to describe an intervention proposal for ASD screening in a diagnostic audiology service.

Description

This study was approved by the Research Ethics Committee of the Institution where it was carried out (protocol number 766.311). All participants' legal guardians have signed the consent form, giving authorization for using the data for research purposes.

The intervention proposal was implemented from May of 2014 to May of 2015 in a high complexity health service, accredited by the Unified Health System (UHS) that provides assistance to children with suspected or already diagnosed hearing loss, as follows: audiological diagnosis, selection and indication of hearing aids, speech-language therapy and family support.

The service's usual routine is as follows: first, appointment with the otolaryngologist, followed by interview with parents/ guardians conducted by the speech-language pathologist for gathering information about children's hearing development, and the audiological evaluation.

For complementary AES screening, the following procedures were adopted:

Participants Selection (based on medical records), according to the following criteria: age over 18 months*, absence of genetic, neurological or metabolic disorders.

Right after the initial interview conducted by the speech-language therapist, the IRDI-questionnaire¹⁸ and the M-Chat (Modified Checklist for Autism in Toddlers)^{19**} were administered. These screening instruments were administered with parents or children's guardians (40 children were assessed, 32 male and 08 female).

In the presence of warning signs of ASD (based on the results of the screening tests), clinical evaluations and case discussions by the multidisciplinary team (otolaryngologist physician and speech-language therapists from the health service) were carried out. Once confirmed the suspicion of ASD, the children were referred to specialized services in the UHS net (Psychosocial Care Centers for children or Centers specialized in rehabilitation, in most of the cases), that have been chosen according to the available services nearby the child's home.

It is highlighted that although the audiological exams are traditionally carried out in children suspected of ASD, the interval from performing the exams until treatment onset is longer than recommended.

The present study intended to propose a reflection with the view to reduce the time spent moving through the diagnostic process, as well as to provide greater clarity about the needs of each case.

It is important to emphasize that this communication is not suggesting performing diagnosis based on non-specific criteria, but the identification of patients for referring to specialized health services, in which the diagnosis investigation could be done with the necessary care.

Final considerations

The research that supports this communication is in progress and the results will be presented in a future publication. However, we judge relevant to point out and scientifically show the potentialities

* Participant's age was determined in accordance with the criteria for administering the assessment instruments adopted for this study.

** Both the IRDi-questionnaire and the M-chat are screening instruments for ASD. The IRDI-questionnaire is designed for parents and it is composed of retrospective questions about children's early development, with answers in a Likert scale comprising 5 levels (never, seldom, sometimes, often, and always). The M-chat is an American test, already translated into Brazilian Portuguese and validated, that comprises yes or no questions addressed to parents about the behaviors of their children.

revealed in this intervention, aimed at differential diagnosis of deafness and ASD.

It is noteworthy that the intervention reported here has demonstrated effectiveness in identifying warning signs of ASD in the studied subjects.

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