
دانشگاه علوم پزشکی شهرکرد
Social Health Determinats Research Center
مرکز تحقیقات عوامل اجتماعی موثر بر سلامت
www.shdrc.skums.ac.ir

اپیدمیولوژی اختلالات گفتار و زبان واوتیسم در کودکان

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مرکز تحقیقات عوامل اجتماعی موثر بر سلامت

اهمیت زبان وگفتار

- ارتباط:انتقال افکار-اطلاعات و احساسات به گیرنده و دریافت متقابل آن
- یکی از ضروری ترین نیاز های زندگی اجتماعی انسان ها توانایی برقراری ارتباط است.
- زبان و گفتار تنها بخشی از پروسه ارتباط هستند.

Epidemiology and Prevention of Communication Disorders

- How many children have speech or language disorders?

- Important to: parents, professionals, policymakers, and researchers who wish to understand communication disorders and optimize assessment and intervention services for these children

- The answer requires estimates of prevalence, “the proportion of people in a defined population who have a particular condition at any one time”

- **However, several challenges make it surprisingly difficult to obtain accurate estimates of the prevalence of various speech and language disorders in children.**

Which challenges????

Challenges:

1. Accepted Definition for everyone????

2. Need for a very large samples (not clinical).

3. Change of nature of disorders with maturity => need to estimate life span

Prevalence Use????

Key Research Questions

1. What is the prevalence of language disorders in children?
2. What is the prevalence of speech sound disorders in children?
3. What is the prevalence of stuttering in children?
4. What is the prevalence of autism in children?

Iranian Studies

Prevalence study of clinical disorders in 6-year-old children across Iranian provinces: Findings of Iranian national health assessment survey

Masoud Amiri, Roya Kelishadi, Mohammad E. Motlagh, Mahnaz Taslimi, Majzoubeh Taheri, Gelayol Ardalan, Parinaz Poursafa

J Res Med Sci 2012; 17(7):596-601

Inequality in School Readiness and Autism among 6-Year-Old Children across Iranian Provinces: National Health Assessment Survey Results

Amiri Masoud, Kelishadi Roya, Motlagh Mohammad-Esmaeil, Taslimi Mahnaz, Dashti Marziyeh, Aminaee Tahereh, Ardalan Gelayol, Poursafa, Parinaz

Iran J Pediatr

Feb 2013; 23 (1) : 71-78

Of these children (955388):

- 39859 (4.2%) had a disease or disorder.
- 3.1, 1.2, 1.8, 1.4 and 0.08 percent showed impaired vision, color blindness, impaired hearing, speech problems and autism, respectively.
- 72605 (7.6%) children had problems with their school readiness assessment.

Why is Prevention Important to the Audiologist and Speech-Language Pathologist?

ASHA's Prevention Curriculum Guide for Audiologists and Speech-Language Pathologists

ASHA= American Speech language and Hearing Association

Foundations of Prevention

- Prevention
  - Inhibiting or interrupting the progression of disease, disorder, or disability
- Health Promotion/Wellness
  - The combination of educational and environmental supports for actions and conditions of living conducive to health

The Professional Role of the Speech-Language Pathologist and Audiologist

- Competencies and Responsibilities
- Prevention Activities
- Assisting with National Initiatives
  - Healthy People Objectives: Now compared to future

Levels of Prevention

- Primary Prevention: mainly information and health education, as well as training of all those professionals dealing with a specific population (WHO)
- Secondary Prevention: mainly screening and early detection of delays or disorders. Early detection and treatment may lead to the elimination of the disorder or to the reduction of the disorder's progress
- Tertiary Prevention: mainly management of the problem including various techniques of rehabilitation and intervention aiming at preventing further problems arising as a result of a disorder

Primary Prevention

- Health Education
- Genetic Counseling
- Environmental Change
- Hearing Conservation
- Immunization
- Prenatal Care
- Vocal Hygiene
- Prevention of Secondary Communication Disorders

Secondary Prevention

- Screenings
  - Speech-Language Disorders
  - Hearing/Balance Disorders
- Early Intervention
  - Hearing/Balance Disorders
  - Speech-Language-Swallowing Disorders

Tertiary Prevention

- Treatment of identified disabilities
- Family/caregiver education programs
- Patient counseling
- Cross-disciplinary consultation

Prevention Science

- Epidemiology
  - Data
- Risk
  - Incidence and prevalence
  - Relative risk and odds ratio
  - Population attributable risk ratio

Models of Health Behavior and Health Education

- Individual Health Behavior Models
- Group Intervention Models
- Applying Health Education Models to Communication Disorders

Genetic Influences

- Genetic Disorders
- Preventive Approaches

Environmental Influences

- Physical
  - Toxins
  - Nutrition
  - Noise pollution
  - Second-hand smoke
  - Lead
- Social
  - Violence
  - Substance abuse
  - Poverty

Multicultural Influences

- Culture
- Influences on health, social, and educational behaviors and practices
- Planning Prevention Targets

Prevention Across the Life Span (Specific Disorders)

- Dysphagia اختلال در بلع
- Literacy and Learning Problems

مشکلات سواد آموزی و یاد گیری

- Oral Problems/Cancer
- Stroke

- Stuttering لکنت
- Traumatic Brain Injury

جراحت مغزی ناشی از ضربه

- Voice Disorders

اختلالات صوت

Prevention Across the Life Span (Distinct Age Categories)

- Prenatal/Antenatal
- Infancy
- Early Childhood
- School-Age
- Adulthood
- Maturity

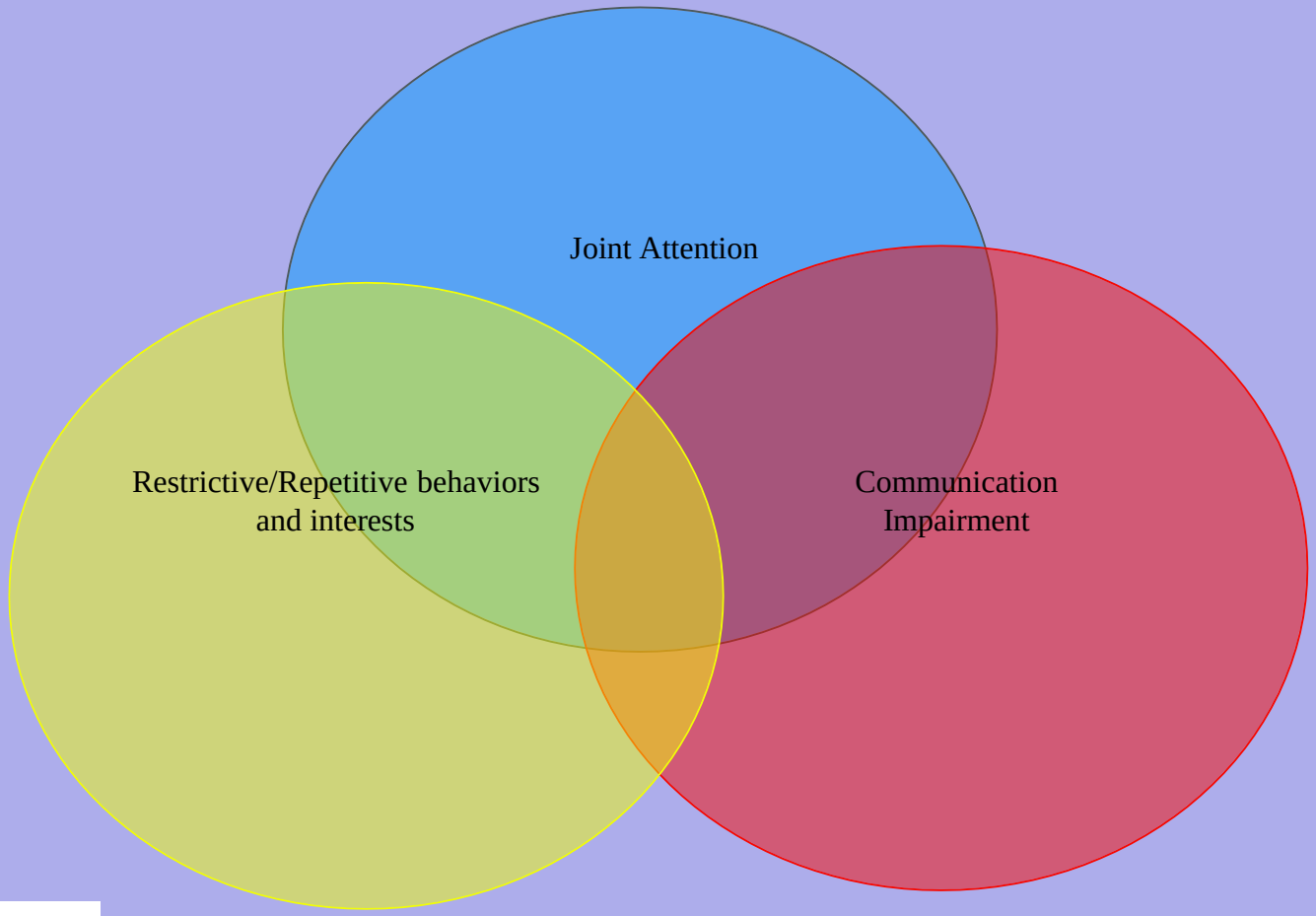
Determining the Success of Prevention Efforts

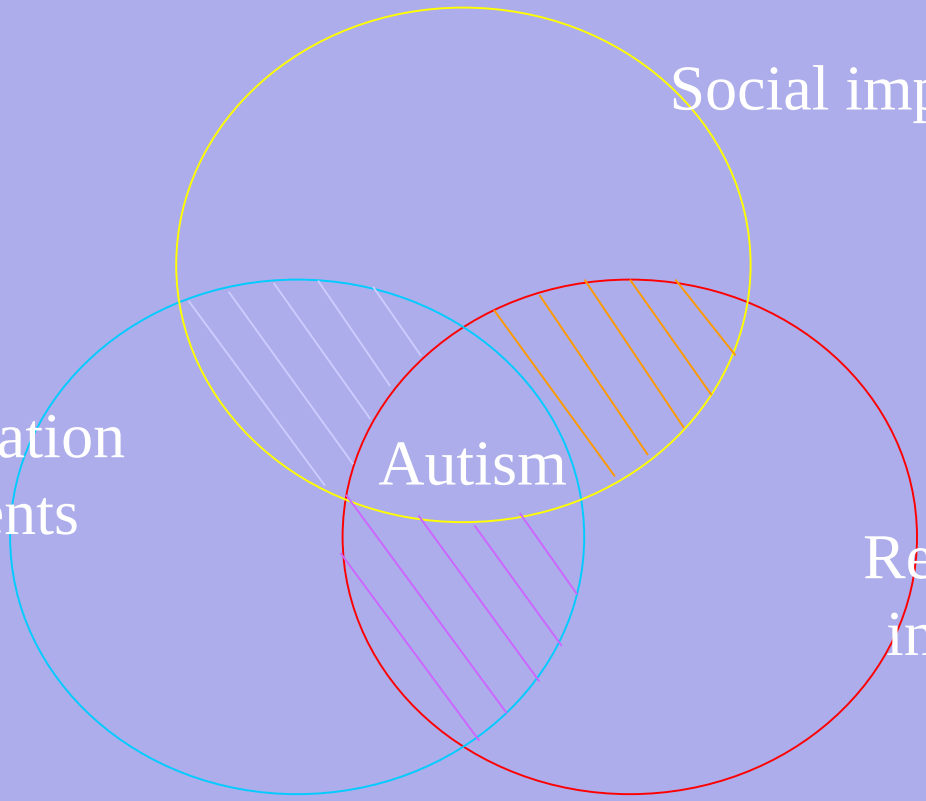
Public Policy and Public Health

- ASHA Public Policy Agenda for Prevention
- Public Health and Professions of Speech-Language Pathology and Audiology

A sample: Autism

Autism Spectrum




Social impairments
Communication impairments
Autism
Restricted interests

Epidemiology of autism

-First epidemiological studies in England in the 1960s

-Since then more than 30 studies in many countries

-All have used a definition of autism that included severe impairment in communication, language, social interactions, play and behavior

-**BUT**- the criteria for autism diagnosis has changed over time

-Studies range from 1966 to 2001

-Range in size of different studies is huge
826 Ğ899,750

-In general smaller studies give higher prevalence

-Total number of children surveyed is around 5 million

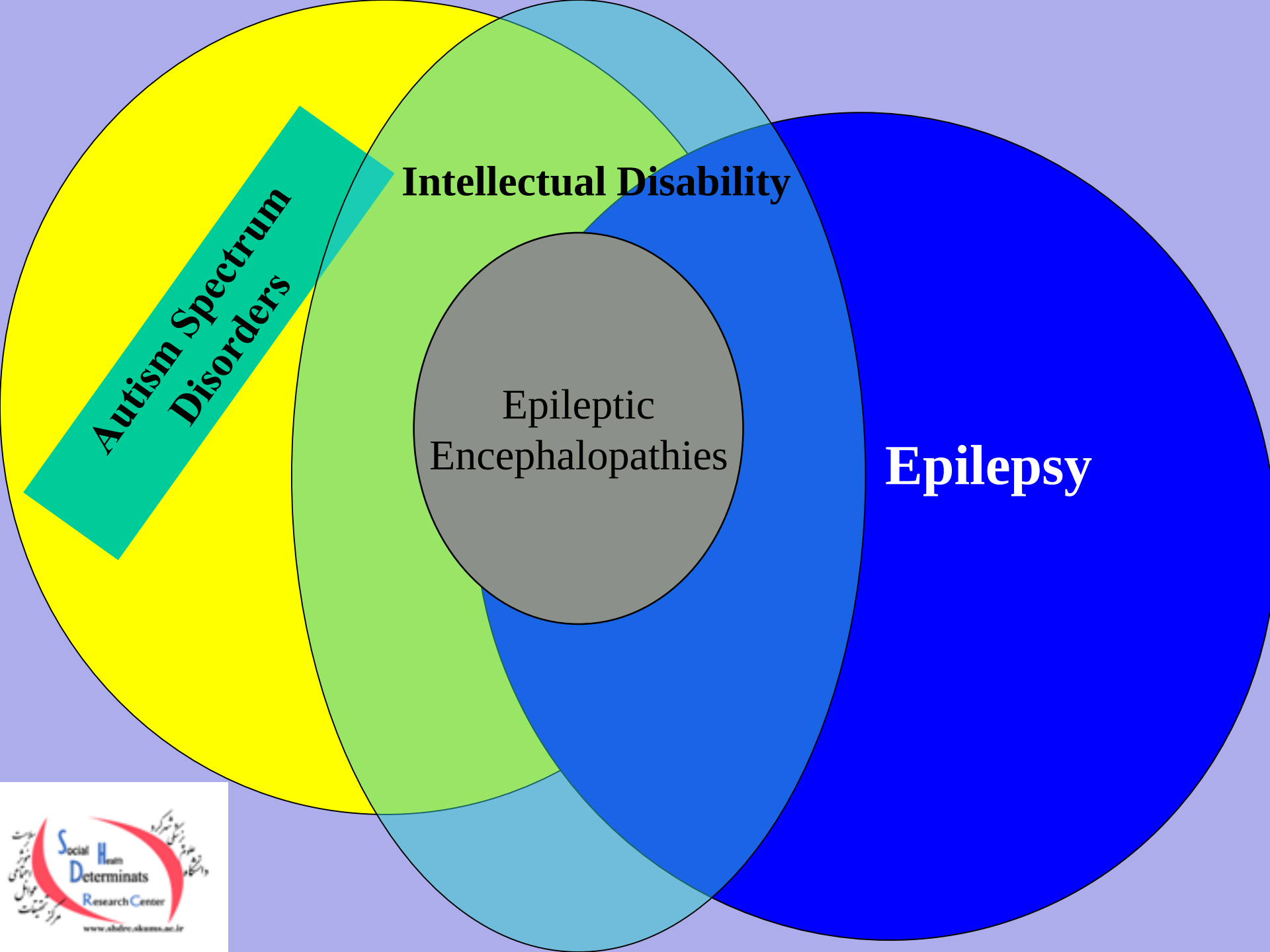
Epidemiologic characteristics

- Male to female ratio: 4.3:1
- Identical twins of an individual with autism has about a 60% chance of also having autism
- Siblings with autism ranges from 2%-4% and as high as 14%
- Little information about ethnicity and racial factors causing autism

- **Prevalence** much higher than believed in the past: ASD in 1% of population, AD in 0.2%
- many studies of prevalence, very few of **incidence**
- **no good evidence that overall rates have soared**
- **but subgroup variation likely (e.g. ”premature autism” has gone up, ”rubella autism” down)**
- **ASD was always quite common? - 0.7% already in the 1970s in Sweden**
  - **Gillberg 1983, Gillberg & Wing 1999, Fombonne 2003**

- Associated with **mental retardation** 15% (80% in autistic disorder/AD)
- Associated with **epilepsy** 5-10% (35% in AD)
- **Medical disorder** in 10% (25% in AD)
- Skewed **male:female ratio** 2-4:1
- High rate of **visual, hearing and motor impairments** **(including at birth)**
- **Sibling rate raised**; **identical twin rate much raised** in classic autism
  - **Rutter 1971, Wing 1981, Gillberg 1983, Gillberg & Coleman 1996, Gillberg 1999, Fombonne 2003**

- Autism is associates with mental retardation, epilepsy and several genetic disorders
- Autism is associates with specific neurogenetic syndromes such as fragile X syndrome, untreated PKU, disorders of the CNS (tuberous sclerosis) and Prader-Willi/Angelman syndrome (PWS/AS).


Autism Spectrum Disorders
Intellectual Disability
Epileptic Encephalopathies
Epilepsy

Prevalence of autism

- Prevalence of autism first estimated at 0.4/1000 (Lotter, 1966)
- More recent studies estimate autism rates as 2-4/1000; and 6-7/1000 for all ASDs (Baird et al., 2000; Bertrand et al., 2001; Chakrabarti & Fombonne, 2001)
- 10-fold increase?
- So is autism increasing within the population?

Prevalence of autism

- Possible reasons for increase
  1) Increase is real – need to explain why. Introduction of the MMR vaccine? No research supports temporal association (e.g. Dales et al., 2001) & no plausible causal explanation (e.g. Halsey et al., 2001)
  2) Artefacts producing false positive diagnosis e.g. overexpansion of diagnostic category – hard to prove as no litmus test (genetic marker)

Prevalence of autism

- Possible reasons for increase
  3) The current rate is correct but there has not been an increase –
    - diagnostic boundaries have changed
    - inclusion of spectrum
    - Increasing recognition of comorbidity (e.g. Downs, Tourette syndrome, cerebral palsy)
    - Improvements in case-finding methods
    - Populations sampled
    - Increased public awareness

Prevalence of autism

- Concurrent decrease in children registered as having mental retardation (Croen et al., 2002)
- Estimates of those with ASD with IQ>70 now 50-80% - implies rise in intellectually able individuals diagnosed
- 70-90% those with ASD diagnoses were male

Prevalence and related factors

- 1960s-1970s: 5 per 10,000
- 1980s: 10 per 10,000
- 1990s: As low as 5 per 10,000 and as high as 72 per 10,000
- Factors Associated with Diagnosis Variation
  - Size and composition of the population studied
  - Means of conduction initial screening
  - Methods and criteria by which cases are confirmed
  - Open to debate due to unknown etiology

Prevalence of autism

- How might we determine whether prevalence is increasing?
  - Cohort study – e.g. comparing 25-yr-olds & 40-yr-olds. But diagnosis less reliable in adults & sampling difficulties
  - Improve methods of measurement – this will be linked to our conceptualisation of ASDs
  - Prospective study of 'at risk' children e.g. siblings of those already diagnosed with autism (Wing & Potter, 2002) – but these may differ from individuals where genetic risk is lower

Risk Factors

- Males
- Monozygotic twins
  - 60% for DSM-IV autistic disorder
  - 71% for ASD phenotype
  - 92% broader phenotype of social and communication deficits
- Siblings 3-20%
- Increasing maternal age
- Intrauterine infections
  - rubella, CMV, herpes, HIV - probably additive brain trauma rather than distinct ASD etiology
- Neurotoxin exposure during pregnancy

Risk Factors / Family History

Genetic loading or genetic etiologies

Dimensional Disorder

- Within families – broader autistic phenotype
  - More social difficulties
  - Higher cognitive, and executive function deficits
  - Increased stereotypic behavior
  - Language and pragmatic disorders
  - Social problems
  - Anxiety
  - Affect disorders
  - Schizophrenia, anxiety, bipolar disorder
  - Cognitive Adaptive Disorder

What Causes Autism?

- Exact cause of Autism remain uncertain
- Factors vary from one individual to another
  - Genetic factors
  - Environmental Influences
  - Certain types of infections
  - Problems before, during, or after Birth

Etiology

A lot of controversy:

- Is it only a cognitive deficit or a disorder of emotional or affective nature? Is there a third disorder that could have cognitive and emotional deficit at the same time?

- Is it only a neurological disorder?

Etiology

- **Autism-No single cause; no single cure**
  Autism is likely the result of a variety of factors, such as:
- Genetic
- Infectious
- Neurologic
- Metabolic
- Immunologic
- Environmental

Controversies in autism

Causes of autism

-Incidence
-The role of the parent
-Vaccines
-Environmental toxins
-Food allergies

Treatments for autism

-Secretin
-Diets
-Facilitated communication
-Drugs
-Behavioral

Behavioral/Social issues

-What distinguishes autism from other PDDs
-Male/female differences
-Mental retardation

“Red Flags”

A child should be immediately evaluated if the following “red flags” are surfacing

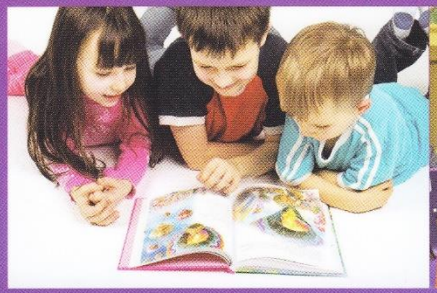
- Does not respond to his/her name
- Child cannot explain what they want
- Tantrums کج خلقی ها
- Gets stuck on certain things
- Poor eye contact

شناسایی زود هنگام اختلالات گفتار و زبان در کودکان

قابل استفاده برای دانشجویان گفتار درمانی، توانبخشی، پیراپزشکی
و مربیان مهد کودک و آموزش و پرورش

با مقدمه ای از پروفسور رابرت اونز

نویسندگان
امید محمدی
دکتر مسعود امیری
دکتر محمد اسماعیل مطلق



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وزارت بهداشت، درمان و آموزش پزشکی

Early Detection of Speech and Language Disorders in Children

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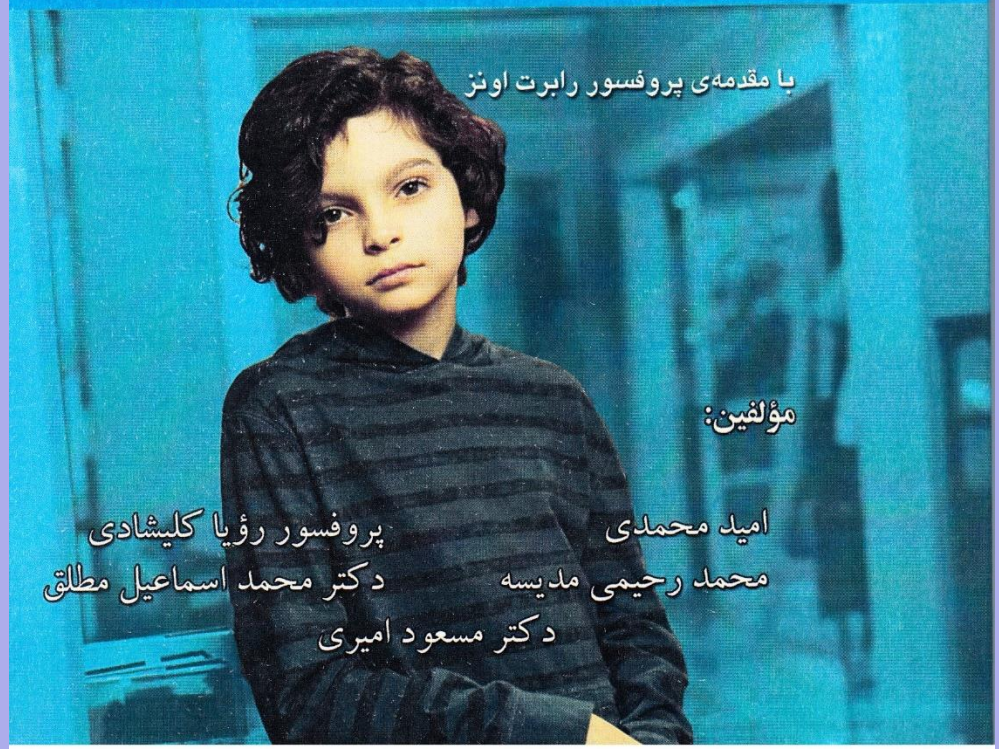

با مقدمه‌ی پروفسور رابرت اونز

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