

Early communicative intervention in children at-risk/with neurodevelopmental disabilities

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Speech and Language Pathology: Scope of practice

- Communication
- Speech
- Language
- Swallowing (Oro-pharyngeal phase)

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Speech
بازنمودی از زبان
که قابل شنیدن
است.

Language
پیامی که گفتار،
واسطه انتقال آن
به مخاطب است.

FIGURE 11.1

A Conceptual Model of Communication, Language, and Speech

Language
Language expressed through speech and through other means (e.g., manual sign language, written communication)

Speech
Speech without language, (e.g., a parrot's sounds)

Spoken Language

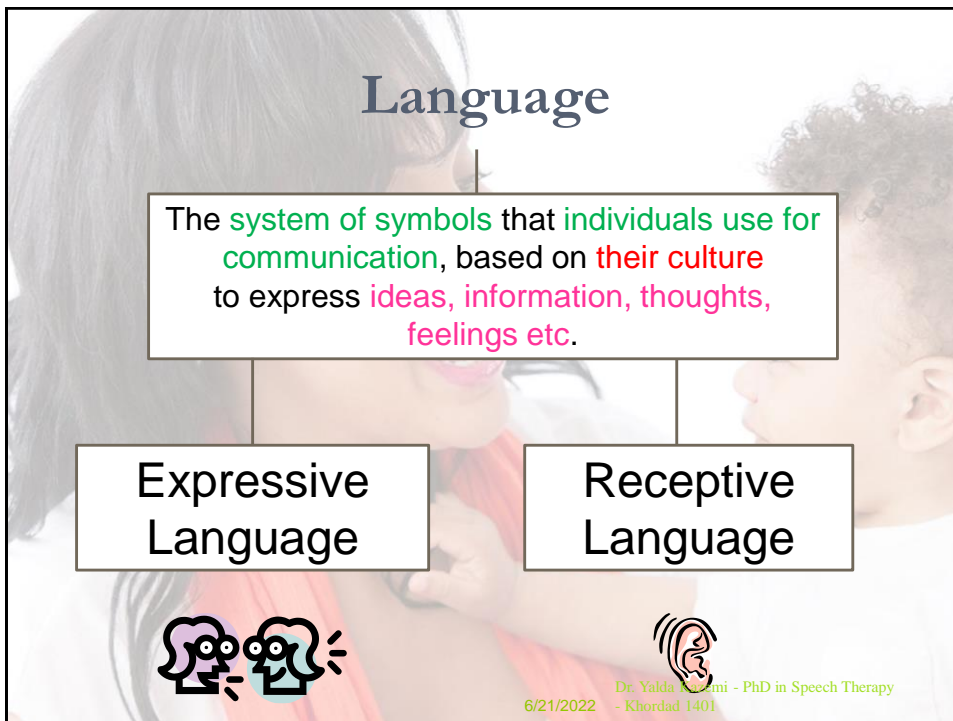
Language can exist without speech (left), and not all speech constitutes language (right), but spoken language (center) is one outcome of typical human development. Communication is the broad umbrella concept that includes speech and language. Although communication *can* be achieved without these components, it is greatly enhanced by them.

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Communication

- Exchange of ideas, information, thoughts, and feelings between senders and receivers which doesn't require speech or language:
 - Gestures
 - Posture
 - Eye contact
 - Facial expression
 - Head and body movement
 - ...

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Language

The system of symbols that individuals use for communication, based on their culture to express ideas, information, thoughts, feelings etc.

Expressive Language

Receptive Language



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Receptive Language Problems

مشکلات در زبان درکی

مثالها:

- ✓ مشکل در فهم آنچه که دیگران می گویند یا در اطراف می شنود.
- ✓ مشکل در درک شوخی ها، ضرب المثل ها، استعاره ها، یا مفاهیم انتزاعی زبان مادری.

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Expressive Language Problems

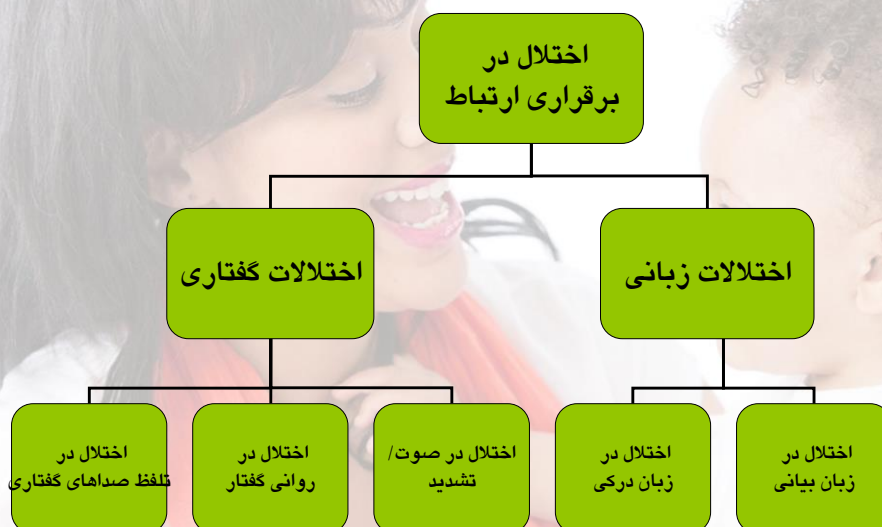
مشکل در زبان بیانی

مثالها

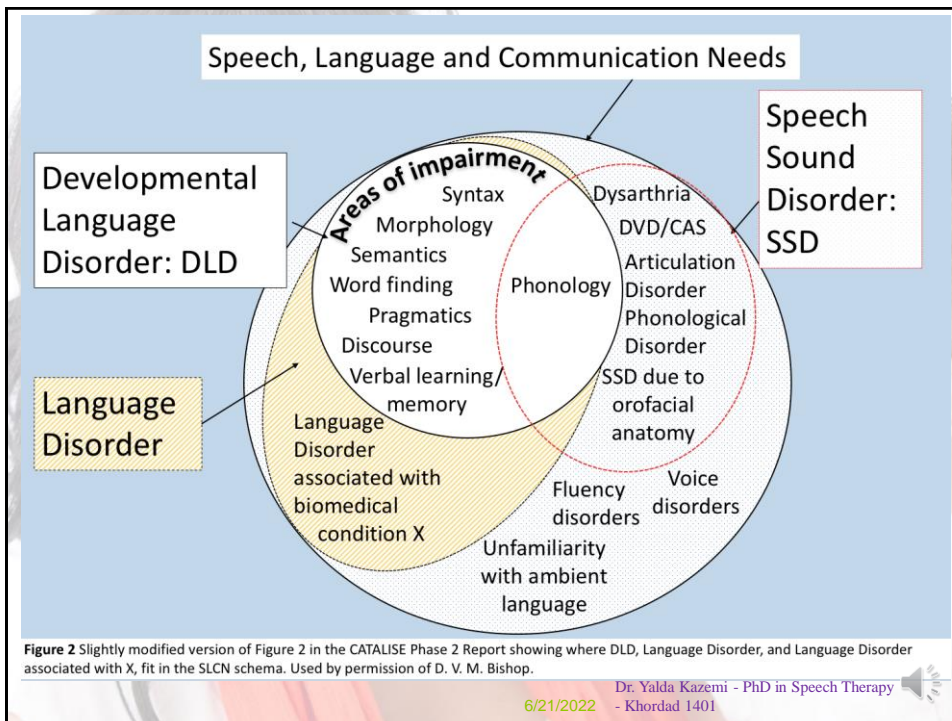
- ✓ دایره محدود واژگان بیانی
- ✓ کلمه/واژه یابی
- ✓ ضعف در زبان اجتماعی
- ✓ طفره رفتن از سوال پرسیدن
- ✓ شاخه به شاخه پریدن
- ✓ موضوعات انتخابی برای صحبت، بیشتر عینی هستند تا انتزاعی یا اینکه زمان بندی مشخصی ندارند.
- ✓ چند بار تکرار یک موضوع و غیرمشخص حرف زدن

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تقسیم بندی کلی اختلالات ارتباطی



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Numbers!

- Of children eligible for Early Intervention, **80% have problems in the communication** domain
- 15-20% of young children have a communication disorder
- The **most common developmental disorders** in preschool years: **Language Disorders**, estimation between 7% - 19%
- At risk infants are potentially at risk for language disorders
- 19% of all students receiving special education

(American Speech-Language-Hearing Association-ASHA, 2008)

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- تخمین زده می شود از ۸ میلیون و ۴۰۰ هزار کودک زیر ۶ سال ایرانی در ابتدای سال ۱۳۹۴:

- حداقل یک میلیون و ۲۶۰ هزار کودک دارای اختلالات تکاملی
- حداقل ۱ میلیون از این کودکان دارای مشکل در برقراری ارتباط هستند.

- A prospective study (2012) showed significant difference in size of vocabulary between LBW infants (n=42) and their term peers (n=42) using MacArthur-Bates Communicative Development Inventory with the greatest effect size of .71 across infants between 24 and 30 months old.

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Risk factors for infants

- Prenatal Factors
 - maternal drug or alcohol abuse
 - exposure to toxins or in utero infections

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Risk factors: Prematurity

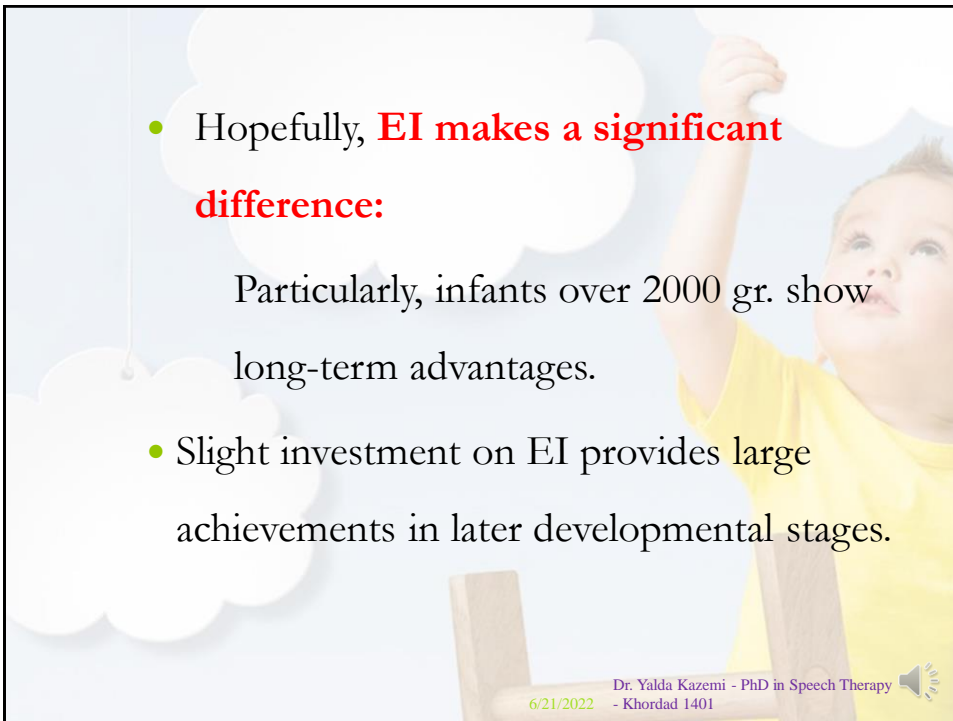
- Low birth weight, respiratory distress → risk of developmental delay directly or indirectly
- NICU environment, treatments provided, and types of care → intubation, tracheostomy, communicative environment
- Less baby-parents interaction: hospitalisation, less willingness
- Developmental delay: 50% of prematurely-born infants
- Cognitive scores lower than term infants

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Risk factors (cont.)

- **Genetic and congenital disorders**
 - number of syndromes
 - autosomal chromosomal abnormalities
 - sex chromosome disorders
 - craniofacial disorders
 - metabolic disorders

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- Hopefully, **EI makes a significant difference:**
Particularly, infants over 2000 gr. show long-term advantages.
- Slight investment on EI provides large achievements in later developmental stages.

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Risks after the newborn period

- Hearing Impairment
- ASD
- Developmental language disorders
- Abuse/neglect

Impossible to detect until later childhood.

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Family-centred practice

- Considerations:

- Stress
- Existence-dependant infant
- The best environment for child's growth and development

IFSP:
Individualised Family
Service Plan

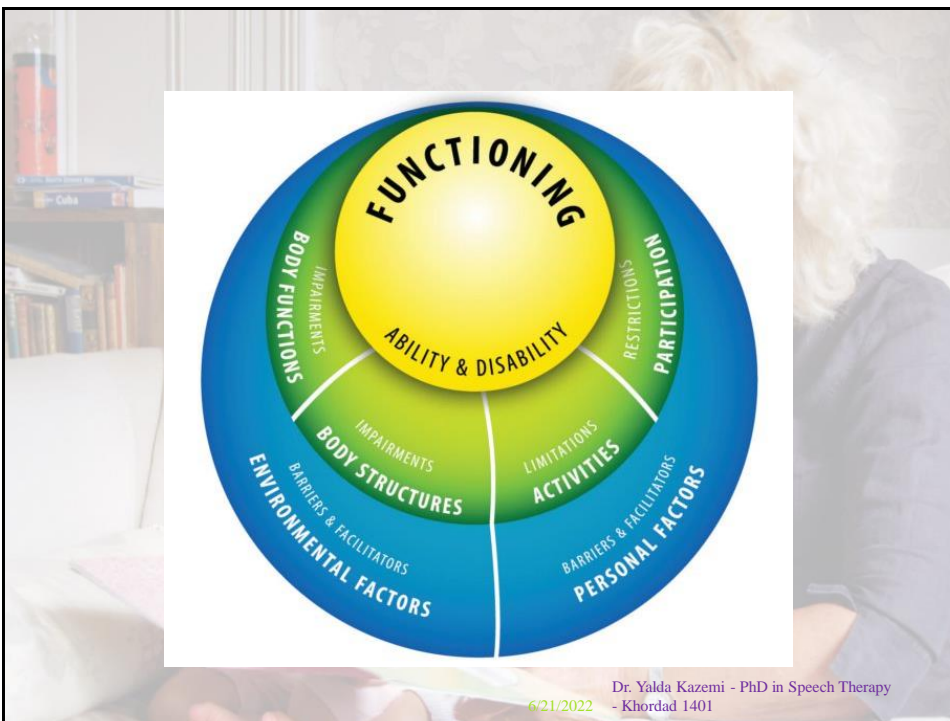
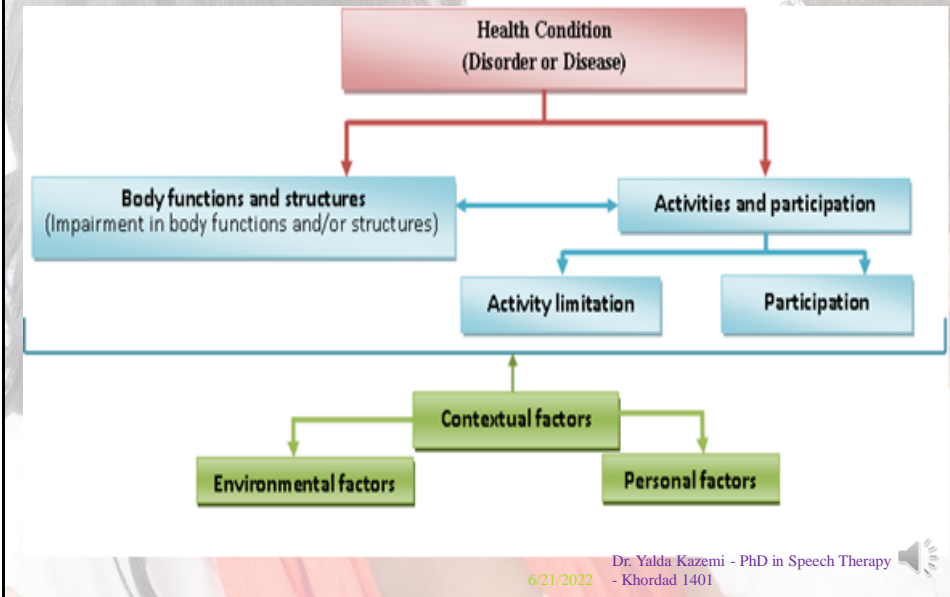
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International Classification of Functioning, Disability, and Health (ICF) – Children & Youth (CY)

- ICF(-CY) provides a **systemic framework** for looking at child's health: started to be included in educating SLTs in Iran
- Considers:
 1. Development
 2. Child's nurturing environment

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Current interaction between different components of ICF (World Health Organisation, 2002)




Importance of family

ASHA :

- Caregivers' and parents are significant partners who should be supplement any standardised instrument
- Add flexibility and ecological validity to the process of assessment

In one word: natural context

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Normal Milestones in the Development of Language and Speech

Age	Receptive Skills	Expressive Skills
Birth	Turns to source of sound Shows preference for voices & interest in faces	Cries
2-4 months		Coos Takes turns cooing
6 months	Responds to name	Babbles
9 months	Understands verbal routines (wave bye-bye)	Points Says ma-ma, da-da
12 months	Follows a verbal command	Uses jargon Says first words
15 months	Points to body parts by name	Learns words slowly
18-24 months	Understands sentences	Learns words quickly Uses 2 word phrases
24-36 months	Answers questions Follows 2 step commands	Phrases 50% intelligible 3 or more word sentences Asks "what" questions
36-48 months	Understands much of what is said	Phrases 75% intelligible Asks "why" questions Masters m, b, y, n, w, d, p, h
48-60 months		100% intelligible and tells stories!

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فلوجیارت اجرایی مدیریت اختلالات تکاملی کودکان

- 1- برنامه کودک برای معاینات دوره ای مطابق سنه انجام کودک سالم.
- 2- در خانه بهمانند توسط پیروز و در پایگاه بهداشتی توسط سانا (پرستار انجام خواهد شد).
- 3- اقدامات از نظر تکامل در منزل، مرکز بهداشتی درمانی یا مراکز جامع تکامل کودکان.
- 4- تست ASQ توسط ازمنه بهداشتی تیم سلامت مرکز بهداشتی درمانی روستایی یا شهری بجای پریشانی خانواده و نظام ارجاع (سانا) پرستار (آزبان بهداشت خانواده) انجام و جمع ندهی و اشتراک ندهی شده و عامل تست به شماره کودک و سوابق صلاح ایلی جهت ویزیت به پریشانی خانواده مسئول فرستاده می شود.
- 5- در صورتی که تست تشخیصی یعنی در شهرستان موجود است باید این تست برای سوره ارجاعی ASQ انجام و تفسیر آن توسط پریشانی معین آموزش دیده انجام شده و در مورد ادامه مسیر تشخیصی و درمانی تصمیم گیری نماید. در صورت عدم وجود تست تشخیصی یعنی در شهرستان، پریشانی معین معاینات تشخیصی ASQ در مورد ادامه مسیر تشخیصی و مداخلات آزمون در مورد کودک تصمیم خواهد گرفت. در صورت وجود مرکز جامع اختلالات تکاملی کودکان به این مرکز ارجاع داده می شود و در صورت عدم وجود مرکز جامع اختلالات تکاملی کودکان در صورت لزوم به هر یک از مراکز حایه حایه مراجعه (اکزیرمان) گذشت (روایتی و روستایی و ... ارجاع داده می شود.

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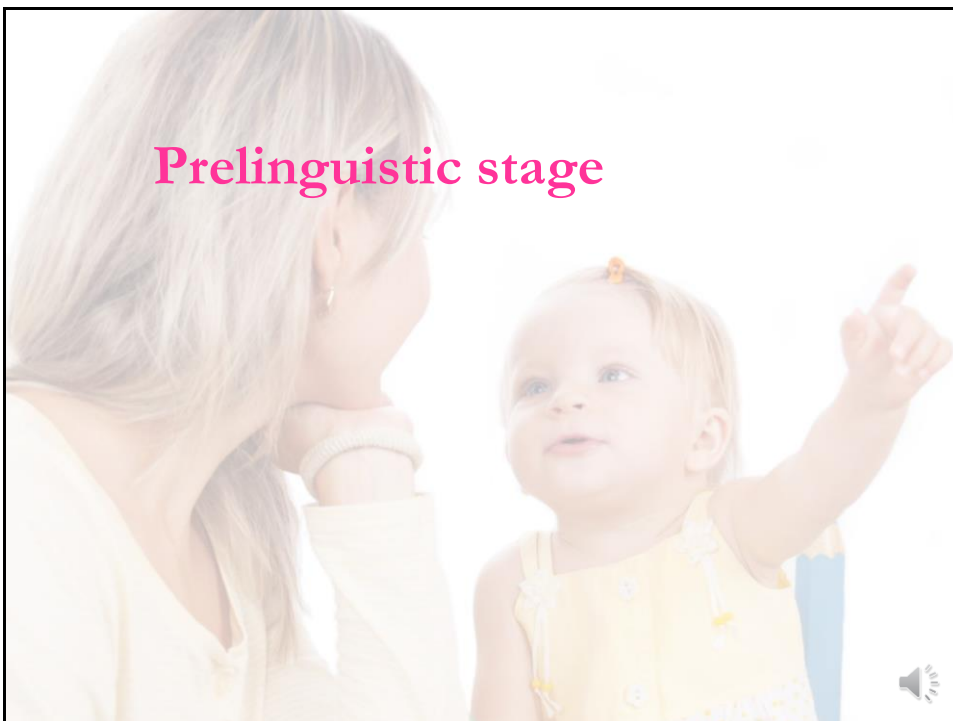
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Stages of Communication Development for Intervention

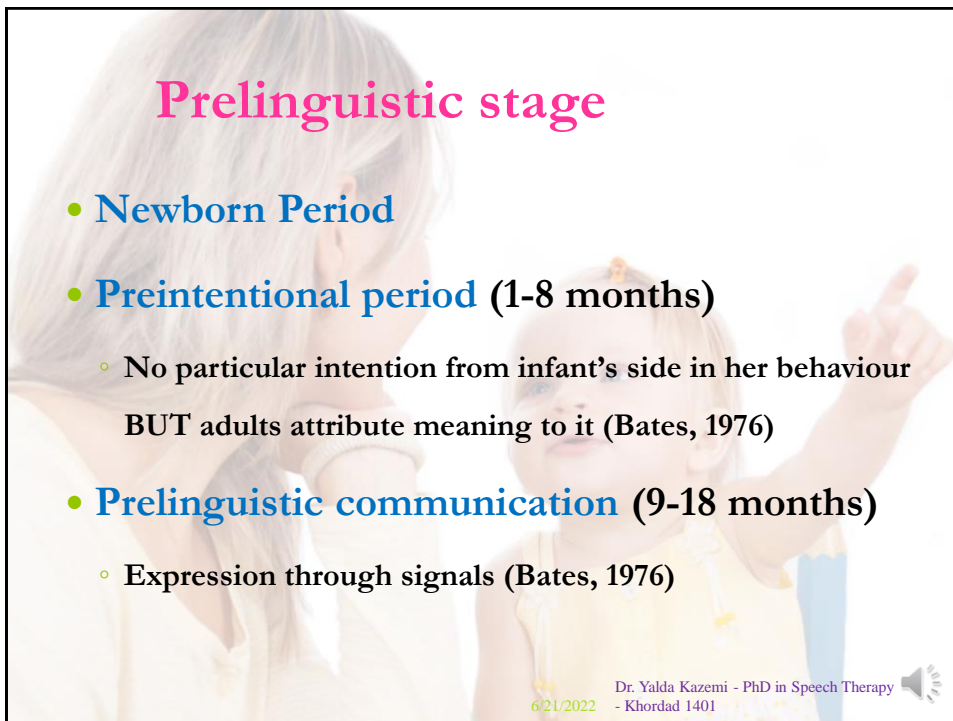
- ۱- دوره پیش زبانی ارتباط
 - کودک در NICU (newborn)
 - ۱ تا ۹ ماهگی Pre-intentional period
 - ۹ تا ۱۸ ماهگی Pre-linguistic communication
- ۲- مرحله شکل گیری زبان - ۱۵ تا ۳۰ ماهگی Emerging language
- ۳- مرحله پیشرفت زبان - ۲ یا ۳ سالگی تا ۵ سالگی Developing language

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Prelinguistic stage

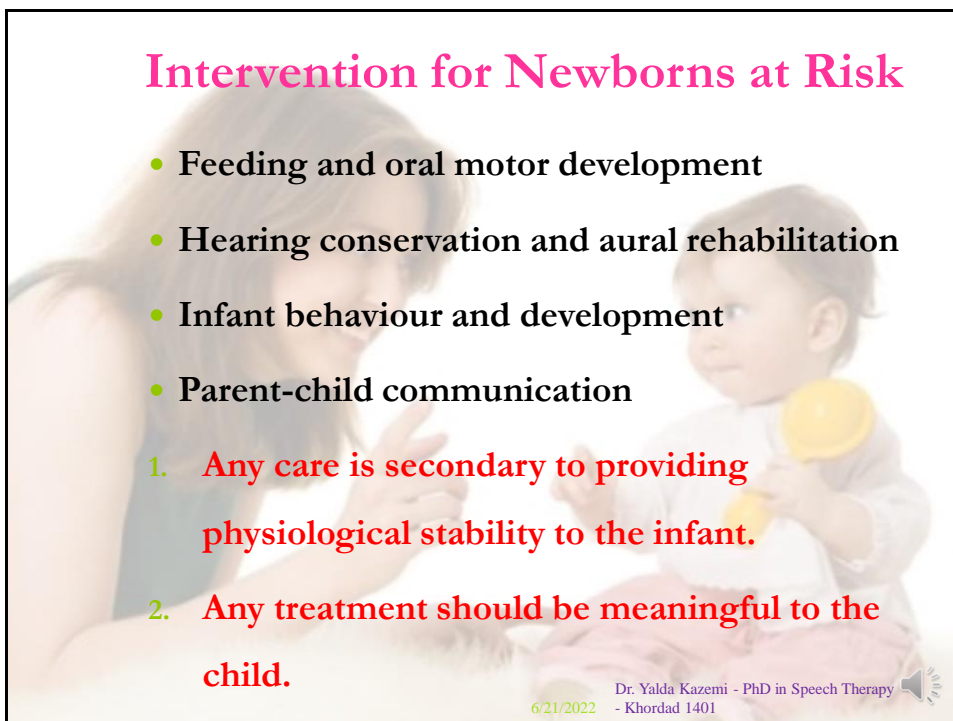




Prelinguistic stage

- **Newborn Period**
- **Preintentional period (1-8 months)**
 - No particular intention from infant's side in her behaviour
BUT adults attribute meaning to it (Bates, 1976)
- **Prelinguistic communication (9-18 months)**
 - Expression through signals (Bates, 1976)

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Intervention for Newborns at Risk

- Feeding and oral motor development
- Hearing conservation and aural rehabilitation
- Infant behaviour and development
- Parent-child communication

1. **Any care is secondary to providing physiological stability to the infant.**
2. **Any treatment should be meaningful to the child.**

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Intervention for Newborns at Risk

- Type of SLT intervention is largely **preventive** (**primary prevention**):
 - **reducing the risk of occurring communicative problems**
 - **minimising the impact of deficits** (infants with cleft lip/palate, feeding problems, hearing impairment, and neurological and behavioural difficulties)

All in a collaborative context with other professionals.

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Emerging language (toddlers)



Developmental Language Disorder (DLD)

- ▶ Receptive or expressive language disorder, or both with **no associated developmental disability**
 - ▶ Also known as **Specific Language Impairment (SLI)**, Primary DLD, language-learning impairment, developmental dysphasia, or developmental aphasia.
- ▶ Incidence of DLD in 5 year olds : 7.6%
- ▶ Children with DLD are usually late talkers and mostly—67% to 84%—are boys.

RAADLD RAISING AWARENESS OF DEVELOPMENTAL LANGUAGE DISORDER

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Late Talking vs. Late Blooming

دیرگفتاری و دیرشکوفائی زبان

- ▶ Most children who have DLD were late talkers \neq most late talkers will have DLD
- ▶ Consider population of 1000 children:
- ▶ In whole population, 10% are late talkers = 100 cases
- ▶ Suppose 3% of children have severe DLD
 - In population of 1000, will be 30 cases of severe DLD
 - 88% of severe DLD were late talkers (i.e. first words after 18 months), = 26 cases
- ▶ Followed 26 2 year-olds after 5 months (Fischel et al. 1989)
 - Approx 1/3 no improvement (DLD)
 - 1/3 mild improvement (DLD?/Late-bloomers?)
 - 1/3 in the normal range (late-bloomers)

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DLD

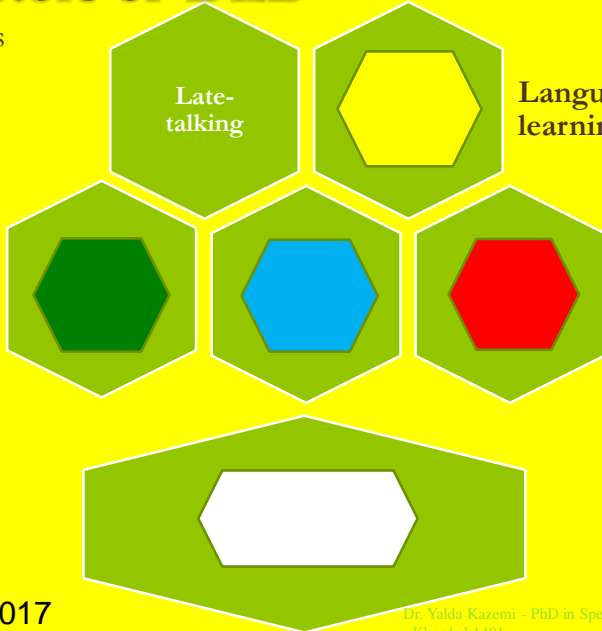
- ▶ **1–2 years:** no babbling, not responding to speech and/or sounds, no interaction;
- ▶ **2–3 years:** minimal interaction, no display of intention to communicate, no words, minimal reaction to spoken language, regression or stalling of language development;
- ▶ **3–4 years:** at most two-word utterances (in their first language), child does not understand simple commands, close relatives cannot understand much of child’s speech.

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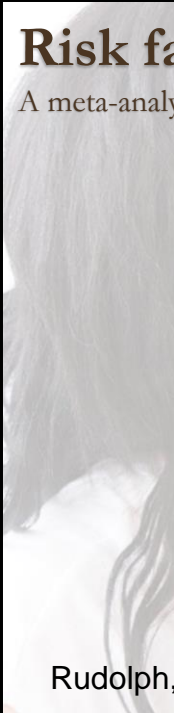
Risk factors of DLD

A meta-analysis



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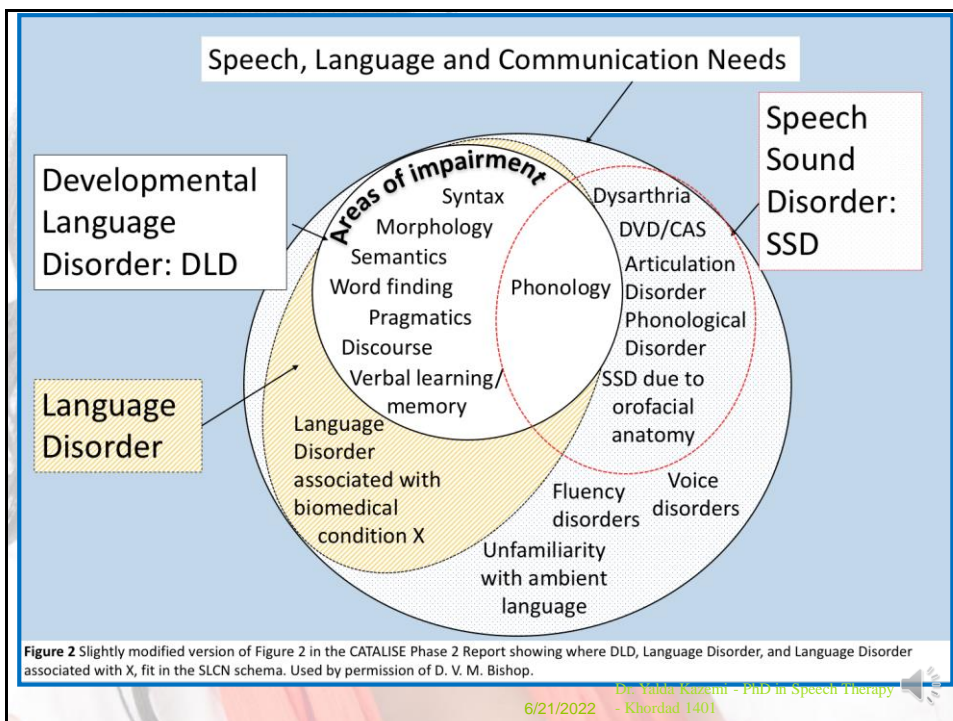
Rudolph, 2017



نشانه های قطعی برای ارجاع از سوی پزشک

- هیچ غان و غون، اشاره کردن/نشان دادن، توجه مشترک و ژست تا ۱۲ ماهگی
- هیچ تک کلمه تا ۱۶ ماهگی
- هیچ ترکیب دو کلمه ای خودانگیزته/استفاده از هیچ فعل تا ۲۴ ماهگی
- هر گونه پسرفت regression در مهارتهای زبانی یا مهارتهای اجتماعی در کل دوران کودکی

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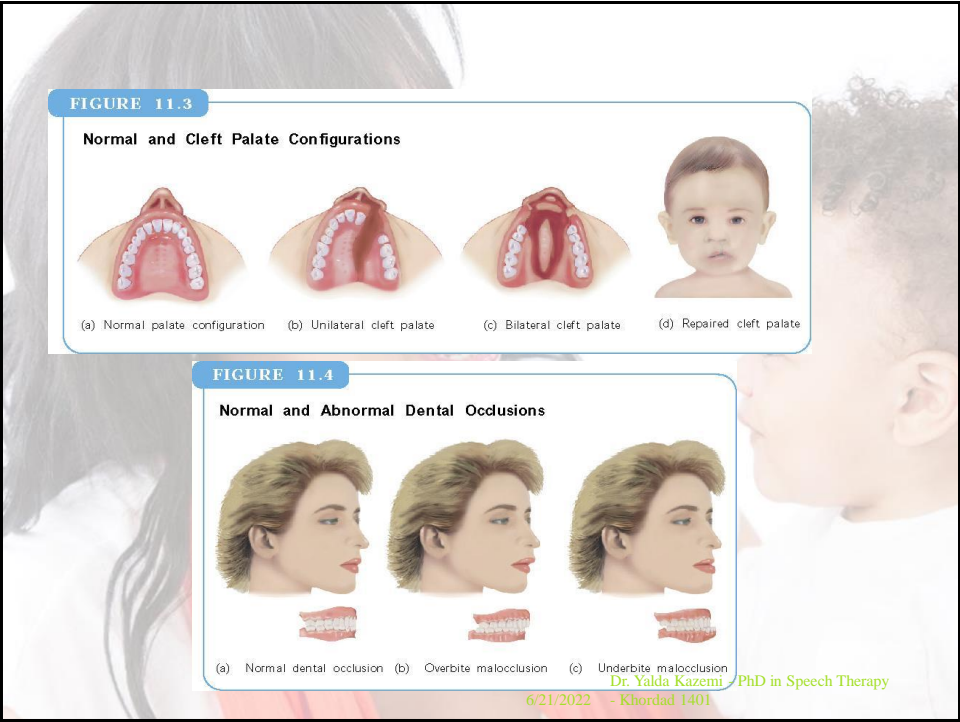
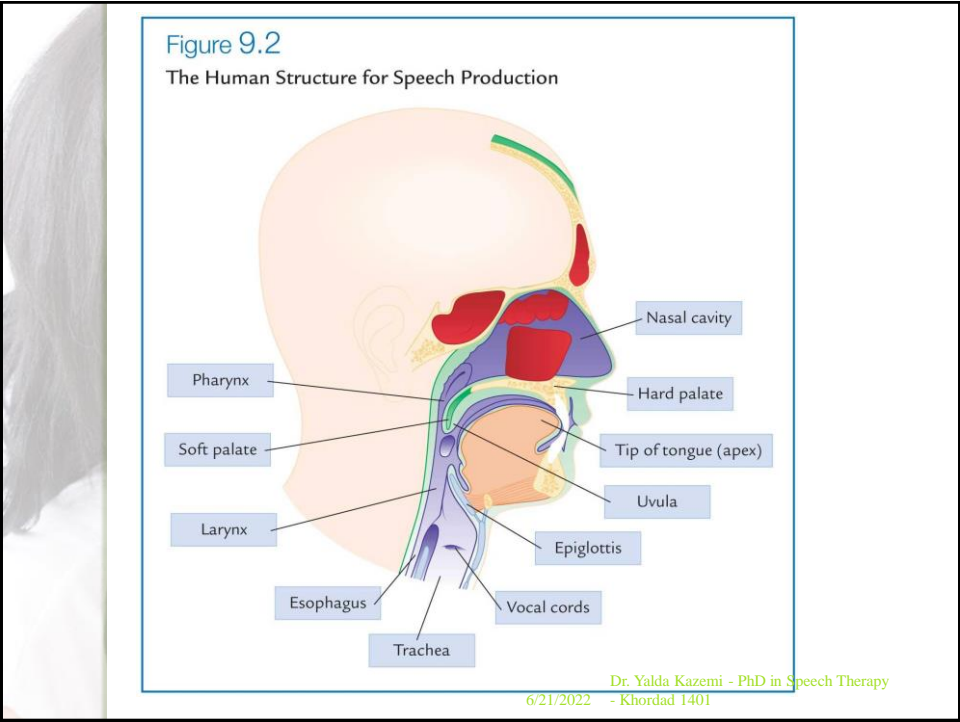
◦ Language disorders

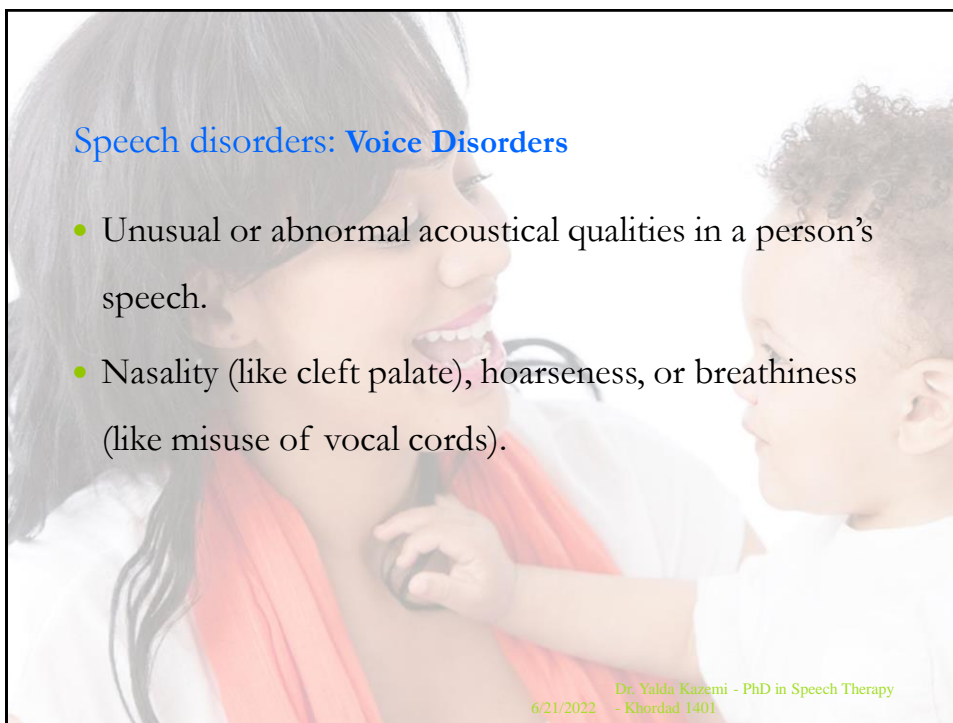


Speech

- Articulation (misarticulation, phonological delay, dysarthria, developmental verbal apraxia,
- Resonance / Voice
 - Pitch, intensity, quality
- Fluency

اختلال در هر کدام از این جنبه ها به طوری که از حالت طبیعی خارج بوده و توجه شنونده را جلب کند با نام کلی **اختلال در گفتار** شناسایی می شود.

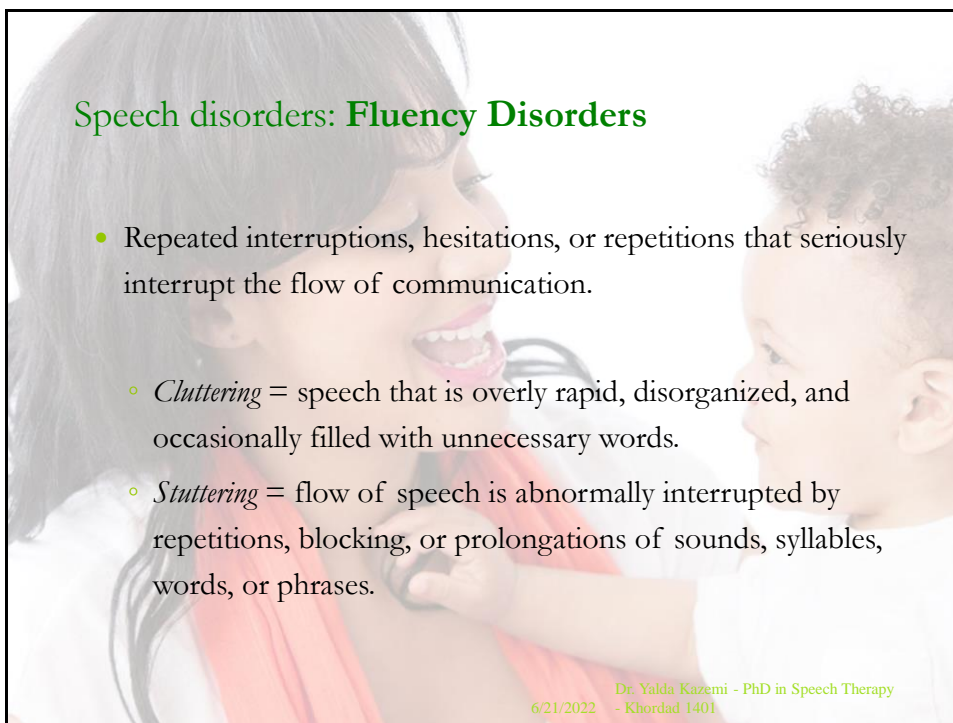




Speech disorders: **Voice Disorders**

- Unusual or abnormal acoustical qualities in a person's speech.
- Nasality (like cleft palate), hoarseness, or breathiness (like misuse of vocal cords).

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Speech disorders: **Fluency Disorders**

- Repeated interruptions, hesitations, or repetitions that seriously interrupt the flow of communication.
 - *Cluttering* = speech that is overly rapid, disorganized, and occasionally filled with unnecessary words.
 - *Stuttering* = flow of speech is abnormally interrupted by repetitions, blocking, or prolongations of sounds, syllables, words, or phrases.

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۴ اصل در ارائه مداخله زودهنگام تیمی برای کودک at-risk یا دارای communication disorder

Paediatrician, Child Psychiatrist, Child Neurologist,
Speech & Language Pathologist, Occupational Therapist, Audiologist,
Plastic Surgeon, Craniofacial Surgeon, ENT, Optometrist, Nursery Teacher, etc.
PARENTS & FAMILY

۱. ارائه خدمت باید متمرکز بر خانواده بوده، فرهنگ و زبان کودک را در مداخله مد نظر قرار دهد،
۲. باید از تکامل کودک حمایت کرده و باعث ارتقاء مشارکت کودک در محیط طبیعی او شود،
۳. باید جامع، هماهنگ، و مبتنی بر کار تیمی باشد، و
۴. باید بر بالاترین سطح شواهد علمی که در دست است، استوار باشد.

(American Speech and Hearing Association, 2013)

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از توجه شما سپاسگزارم.

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