Original Article

Investigating the Narrative Skills of Late Talkers Through Sequential Picture Stories

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Objectives: The purpose of the present study was to investigate the abnormalities observed in the oral narrative skills of late talkers mostly caused by mental disorders while they try to comprehend a wordless sequential picture story to create and narrate the relevant story.

Methods: Totally 15 (10 male and 5 female) individuals were selected based on the purposive sampling. The participants were the students of a specialized school for physically and mentally retarded students. They were the students of grade one ranging in age from 6 to 13. All of them had language delay which was caused by mental disorder. Their narrations were observed and recorded in a semi natural setting by the researchers and their speech therapist.

Results: Based on the data collected from the interview tackled by the researchers it was concluded that most of the students were not able to keep the sequence while narrating the picture.

Discussion: With regard to syntactic patterns, all of the sentences were holophrastic or two-word utterances bearing a simple structure although some exceptions were noticed. An element which was mostly seen in the participants was their inability to name the objects because of their restricted lexicon; therefore they compensated this shortage through trying to define the function of the words they wanted to utter.

Key words: late talkers; narrative skills; language delay

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Introduction

Naturally between birth and the age of two years, babies and toddlers develop their communicative skills. These skills allow children to start uttering their first words and making simple sentences, and enable them to express their feelings and understand the world around them. Early language skills underpin subsequent reading and writing skills; therefore, children's early language development has a significant impact on future school performance. This is the language and the related communicative skills through which children are likely to reach their full potential [1]. However, things do not occur evenly and naturally anytime. Estimation declared that 10% to 15% of 2-year-olds acquire new words more slowly and start to combine words into phrases later than their typically developing peers, showing obvious delays in language in contrast to seemingly typical development of sensory and cognitive systems [2]. In this way, speech and language disorders as the most common developmental problems noted in preschool children [3].

Children whose language skills develop more slowly are known as having a 'language delay' or be 'language-delayed'. This means that their language skills are developing significantly more slowly than those of other children of the same age. Children who have language delay are slower than other children to start to use words, and are then slower to put simple sentences together by the age of two or three [1]. As it can be inferred based on literature, the use of the word 'delay' suggests that the sequence of the child's language development is following the normal pattern, and it should be distinguished from language 'disorder', where the pattern of development is said to be unevenly disrupted. A distinction is drawn between 'language delay' and 'specific language impairment', where a child's language is slow to emerge but there are no other associated difficulties. However, fining such

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distinctions is not always an easy job, since there are no clear criteria for the level at which a child is considered to be delayed rather than within the normal range of language development [1]. To define "language delay" or "late language emergence" (LLE) certain factors such as age, vocabulary size, and the presence or absence of two-word combinations are to be considered [4]. Zubrick, Taylor, Rice, and Slegers had restricted use of the LLE diagnosis to children at 24 months of age [5], while others included children up to 35 months of age [6]. A commonly suggested cut-off for diagnosis of LLE as the production of fewer than 50 words with regard to vocabulary size is suggested [4,7]. Similarly, it is proved that the children with LLE produced an average of 24.54 words (SD=23.62, range=5-131), while a comparison group produced an average of 235.17 words (SD=73.67, range=27- 319) [8]. In the same vein, it is reported that a lack of two-word combinations was indicative of LLE [7, 8]. Besides theses criteria, other symptoms of late language emergence have been enumerated. Results from a Swedish language screening test, administered to all children in the country at 2.5 years are used as a diagnostic marker for LLE. Children who failed the screening were noted as language-delayed [9]. In a large epidemiologically ascertained sample, LLE is defined as a score of −1.0 SD or below on a communication subscale that asks whether a child points to pictures and body parts, follows simple directions, names objects, combines words, and/or uses early-developing personal pronouns. Using this cut-off, 13.4% of a sample of 1766 children was categorized as LLE [5]. Language delayed children have difficulty to express themselves more generally, respond to questions or tell stories [1]. Late talking children bear some characteristics with regard to their language use and communicative abilities which are unique and comparable to normally developed children as summarized below:

- Late-talking children normally show gross and fine motor and self-help skills comparable to peers[10].
- Such children may use the same or a higher frequency of gestures than do typically developing children to compensate for their limited verbal abilities [11].
- The acquisition of receptive vocabulary of most, although not all, late talkers are often comparable to that of normally functioning children, in contrast to remarkably slower rates of acquisition of expressive vocabulary. By age 2, the expressive vocabulary size of late talkers is often in the range of 20 words, whereas their typically developing peers normally have expressive lexicons of approximately 200 words [12, 13].
- These children produce only a few words at a time, whereas their peers say hundreds of words and combine them into phrases [14].
- The overall profile of late talkers' language skills does not resemble that of the typically developing child and is generally believed to be delayed rather than disordered.
- The syntactic difficulties of late talkers are first manifested by their limited ability to produce two-word combinations at age 2 [12, 15, 16].
- As these children grow older, many of them continue to manifest problems with the grammaticality of their utterances that may have an appropriate semantic focus but lack elaboration using appropriate grammatical morphemes [17].
- Language delayed performed significantly worse than typically developing peers at age 17 on standardized tests of grammar and verbal memory.
- Half of kindergarten children suffering from language delay have identifiable reading and learning difficulties in later primary grades and continue to demonstrate decreased reading achievement compared to typical language peers through at least Grade 10 [18-20].

There are many reasons for delayed language acquisition, including hearing loss, structural abnormalities, mental retardation, neurological disorders, emotional disturbance and deprivation [13]. Genetic and shared environmental influences contribute to low expressive language ability in particular [4]. Other researchers have suggested that there may be significant interaction effects for verbal ability with family chaos, instructive parent-child communication and informal parent-child communication, and have concluded that there was greater group heritability in high-risk environments and that this relationship was particularly true in the most disadvantaged groups. Various other factors are also likely to be associated with early delays. For example, a family history of language delay has been shown to be an important predictor [21].

With regard to the topic of the present study, narrative language is an important aspect of language with direct relevance to the social and academic development of young children. Oral

narratives are defined as storytelling, as a method of verbally relating past experiences and organizing life events [22]. Children with disabilities display poorer storytelling abilities than their typically developing peers [23]. Oral narratives are defined as an integral part of children's daily life both in the classroom and social environments. They denoted that deficits in narrative skills also influence children's everyday social interactions with peers and family members [24]. Children with language impairments exhibit difficulty when producing oral narratives. In comparison to their typically developing peers, oral narratives produced by children with language impairments have been shown to include the following: fewer total words, fewer different words, less story grammar components, fewer complete episodes, less conventional story openings and closings, improper amounts of information given to the listener, fewer successful communication repairs, less accommodations to uninformed listeners, poorer use of cohesive ties, and fewer protagonists attempts, plans, and internal responses [22].

School-age children are compared with and without histories of LLE for performance on standardized narrative comprehension and production tasks, as well as the use of complex sentences and relative clauses in narration and conversation. Both complex syntax and relative clause use are reduced in children with specific language impairment (SLI), so these structures may be useful as indicators of linguistic weakness. Moreover their speech performance lacks the syntactic complexity of their TD peers in conversation [4]. Children with LLE often exhibit growth in language, particularly single-word vocabulary, however; they seem weak on complex narrative and syntactic tasks [6]. Narrative skill is examined at preschool and school age. They divided 23 children with LLE into two groups: 'late bloomers', which included ten children who scored in the average range on the DSS by age 4; and an expressive language-delayed group (ELD), which included 13 children who scored below the 10th percentile on the DSS at age 4. These two groups were compared with TD 4-year-olds on the Bus Story Language Test. Results indicated that the TD children and the 'late bloomers' did not differ for information score, MLU per T-unit, percentage of complete cohesive ties, or for the number of different word roots, while the children with ELD scored significantly worse on all measures [7].

In a follow-up study, the same children are compared with ELD with TD peers in kindergarten, first and second grade [12]. By second grade there were no significant differences between ELD and TD groups for various measures, including MLU per T-unit, lexical diversity, cohesive adequacy or narrative stage [12]. Oral narrative skills of 8- and 9-year-olds who were diagnosed with LLE between 24 and 31 months were weak in comparison with their typical peers. All children were asked to 'tell the story' of a wordless picture book. Children with a history of LLE scored lower than TD peers for syntax, story grammar and evaluative information (e.g. labeling characters' emotions, etc.) [25]. Children with brain lesions to learn more about language development are examined. The participants were 11 children with brain injuries with the median age of six and included eight girls and three boys. The 20-member group of typically developing children included 11 girls and nine boys of approximately the same age as the children with brain injuries. The children were asked to tell a story after given a situation that suggested a narrative, such as, "Once there was a little boy named Alan who had many different kinds of toys." They were prompted by questions such as "anything else?" until the children said they were done. The stories were then analyzed for length, vocabulary diversity, syntactic complexity, overall structure and use of inference. The study found that the children with brain injuries produced shorter, less complex stories than typically developing children. Further testing showed that the children with brain injuries had similar vocabulary and sentence comprehension abilities to the typically developing children [26].

A 3-month intervention is conducted to enhance the sequential time perception and storytelling ability of young children with hearing loss. The children were trained to arrange pictorial episodes of temporal scripts and tell the stories they created. Participants (N = 34, aged 4-7 years) were divided into 2 groups based on whether their spoken-language gap was more or less than 1 year compared to age norms. They completed Kaufman and Kaufman's picture series subtest [27] and Guralnik's storytelling test [28] at pretest and posttest. Measures demonstrated significant improvement in sequential time and storytelling achievement post intervention. Three of the examined demographic variables revealed correlations: Participants with genetic etiology showed greater improvement in time sequencing and storytelling than participants with unknown etiology; early onset of treatment correlated with better achievement in time sequencing; cochlear implant

users showed greater storytelling improvement than hearing aid users [28]. In a longitudinal study, the development of oral language and more specifically narrative skills (storytelling and story retelling) is compared in children with specific language impairment (SLI) with and without literacy delay. Therefore, 18 children with SLI and 18 matched controls with normal literacy were followed from the last year of kindergarten (mean age=5 years 5 months) until the beginning of grade 3 (mean age=8 years 1 month). Oral language tests measuring vocabulary, morphology, sentence and text comprehension and narrative skills were administered yearly. Based on first and third grade reading and spelling achievement, both groups were divided into a group with and a group without literacy problems. Results showed that the children with SLI and literacy delay had persistent oral language problems across all assessed language domains. The children with SLI and normal literacy skills scored also persistently low on vocabulary, morphology and story retelling skills. Only on listening comprehension and storytelling, they evolved towards the level of the control group. In conclusion, oral language skills in children with SLI and normal literacy skills remained in general poor, despite their intact literacy development during the first years of literacy instruction [29].

The number of studies examining narrative comprehension skills of late talkers is relatively few [4]. Moreover, the ability to tell a story is a more complex activity than learning words and sentence structure. Because that skill requires flexibility in using words, it may be more vulnerable to developmental delays than other aspects of language learning [26]. To this point, the purpose of the present is study is to investigate the oral narrative skills of late talkers mostly caused by mental disorders while they try to comprehend a wordless sequential picture story to comprehend and create and narrate the relevant story. Based on this the following research question was posed: What is the pattern of speech of mentally retarded late talkers in narrating a wordless sequential picture story?

Methods

For the purpose of this study 15 participants were selected based on the purposive samplings, who were the students of a specialized school for physically and mentally retarded students. They were the students of grade one based on the categorization of those school with the age range between 6 to 13 years old. All of them had language delay which was caused by mental disorder. A factor distinguished the participants from each other was their learning ability, and their IQ based on Wechsler and Sttanford-Binet test administered [previously by the school administrators. Because of some limitations they did not provide the researchers with the accurate result of that test just categorized the students as weak, moderate, and high level of learnability. The categorization is illustrated in table (1).

Table 1. the degree of backwardness based on the IQ scores

Degree of mental backwardess	Wechsler score	Sttanford-Binet score
Weak	55-69	52-67
Moderate	40-54	36-51
Sever	25-36	30-35
profound	24 and Below	19 and below

To observe and interview the students the consents of the parents and the administrator of the institution were obtained. The speech therapist of the institution was present in all sessions to aid the naturalness of the procedure. Participants were familiar with the speech therapist and the researchers sat in the corner overseeing the children's speech and activities. The procedure lasted for 10 sessions, 4 sessions devoted to the observation of boys, and the last 6 sessions were dedicated to girls. Each session lasted about one and half an hour and children were allowed to go out or take a rest while they felt tired. In a cozy classroom full of pictures of the wall and a carpet on the floor, furnishing with chairs and a table which permit boys to play quite naturally and noisily with the lots of toys provided for them by the speech therapist (ST) and the researchers. While they were busy playing with the toys, the ST intervene and asked them about their daily tasks and summer vacation. As they start talking about themselves and their families or the other topics, quite naturally the ST asked them first about the stories which they were told during their classroom time or to tell a story about the toys they were playing with and then open a book containing a series of wordless sequential picture story, asked them about the event

happened in the pictures. All the time the interactions were recorded by the researchers for later transcription and scoring.

The first story illustrated a bicycle riders entering a street head down, and collided with a lorry crossing the street and then taken to the hospital. The second was about a boy climbing a tree while a girl was looking at her. Then he could not come down, and the girls asked a man to help him using a ladder. And the third story depicted a man sweeping the park, piling up the tree leaves, but suddenly the wind ruined all his work. In the sessions which the girls participated, since they came in pairs or alone, the procedure was tackled in the form of a semi structured interview. The ST welcomed them and started conversing with them. After a kind of a quarter, smoothly she referred to the story book and asked them to narrate the story. Each interview lasted about half an hour since the participants preferred to talk about themselves and their families. All the participants were given a gift after the interview. All the recordings were transcribed and codified for the sake of complexity and grammaticality and whether they were able to preserve the sequence while narrating the stories.

Results and Discussion

Based on the observation and interview with the male students, some of the cases are reported in detail and their performances are described and analyzed. The names are written in abbreviated form.

Case 1: Ho was 13 years old studying in grade one. He was a moderate learner from a low income family suffering from a sever language delay since he was not able to utter a single word till he was 5 years old.

Most of the utterances he produced were dingle words and mostly he repeated the words in the ST question as the answer to the questions. The sentences he produced to narrate the story were of simple structure without any relative clause or embedded sentence and high number of repetitions. He was asked to narrate the stories in three phases. For the first time he was asked to tell the story picture by picture, and then to retell it as a whole and finally to say what happened in the picture story. This process was repeated for each of the three stories. (see the transcription)

Transcript 1: HO, picture story 1,
ST: inja chi shode?
HO: inja baa charkhe ..(4 seconds).. mikhaad maashin ..[3s] inam zade zamin.. oftade zamin.. zade barash… oftade zamin.. inam oftade zamin … saresh shekaste ..[5s].. inam rafte bimarestaan
ST: hala hame ba ham begoo.
HO: in mashinoo ba in mikhore .. [4].. inam dare zade saresh shekaste.. inam dare mibaratesh .
ST: hala begoo che etefaghi oftad.
HO: mashinoo zade ghadesh

The interesting point is that he could not follow the sequence and his narration traced the ST pointing to the pictures. Moreover, for all three stories he summarized the story and retold it in a shorter form as he went on which was due to his short memory span.

Case 2: EH was a 7 year old boy. He was in grade one. He was a weak in learnability and of a low IQ score as reported by the school principal. He was also very shy and resisted to answer any question even when he was asked to say his name. The interview was done in several phases and his interactions with other were recorded naturally to make him interact quite intimately with his peers.

Transcription 2: EH. Picture story 2
Eh to his friend: inja az khaharesh mige.. neram bala? Inja mire bala.. inja mikhad bia paaeen … inaj ham mikhad biofte .. dige hamin.

He was able to track the sequence, but the sentences were all simple. He was not able to name some objects instead he tried to define them or to compensate this using a close lexical item on the basis of its meaning. For example he was not able to use the word ladder [nardeban] instead first he defined its use and then he uttered stairs [pelle]. [See Transcription 3]

Transcription 3: EH. Picture story 2
EH to his friend: oomade inje chi gozashte, ham chi.. ke azesh biad paaeen.. hamin…. Chiza ….. PELLE

Case 3: AL was 8 years old. He was of high learning ability and average IQ however he had tattering. He initiated to talk about different stories which he claimed had happened for him incessantly and excitedly however, there was no time order in his speech. [see transcription 4] He

could not use deictic and to tell the addresses he just uttered "there" [oonja]. For people he just said "he" [oo]. He did not possess a high number of lexical items.

Transcription 4: AL telling a story of one of his relatives
AL to the researchers: yeki az dootam.. pesar khalam.. ammam.. morde bood.. ito kardim oomadim
Researchers: koja bood?
AL: oonja

To narrate the story he could not keep the sequence. He made use of simple sentences and told a story which was not relevant to the main content of the story just narrating something of the appearance of the characters in the pictures. He did not tell any meaningful story. [See transcription 5]

Transcription 5: AL, story 2, boy on a tree
AL to the ST: in dare mikhande … dastesh dade baalaa… in istade… dastesh dade paaeen….dare negeh mikone… inam dare negah mikone … inam rafte bala… negah mikone …

Case 4: BO was 11 years old. He was f low learning ability with low IQ score. He was a physically hyperactive student he started uttering the first words when he was 4 years old. He himself initiated to talk about his father's death. He could not use the appropriate lexical items. For the lexical items he tried to define the words, for example; to talk about objects mostly he told their functions. [see transcription 6]

Transcription 6:
BO to his friend: too tabestoon baron miad.. baoon ke oomad ina hasta …. Hamina ke migirim….roo saremoon migirim… ina ke intoor migirim ..

He talked nonstop and with full energy, however he could not keep the sequence and narrate the content of the story. He made use of the simple sentences, mostly two word utterances devoid of meaning related to the story. [See transcription 7]

Transcription 7: BO, story 2, boy on a tree
BO to ST: mamanesh mige naro naro.. babash mige nardeboon… mire bala… balay derakht … gir mikone lebasesh …. Gir mikone… dige namitoone … in dokhtaroo neshaste… mige naro naro.

Among female participants three of them were selected to be reported and analyzed since their speech were more informative than others.

Case 5: ZA was 9 years old with low learning ability and average IQ in comparison to her typically developing peers. Her speech production was acceptable and near to naturally developing peers as her speech therapist declared. She talked about her future job and life and she made use of communicative strategies well. The ST declared that ZA is able tell lie a lot and to deceive her friends and teachers. She used her communicative skills skillfully and explains, justifies, and visualizes her claims to make other believe her. But her cognitive skills are really low.

In her narration she was able to produce sentences and keep the sequence, although most of her speeches were short phrases with pause between them. The other element in her speech was the over use of the noun and she did not use the pronouns instead of the nouns in her speech. [see transcription 8]

Transcription 8: ZA, story one, bicycle rider
ZA to the researchers: mashinoooomad. Mashinoo zad ghade charkhoo. Charkhoo oftad. Adamoo oftade. Mardoo dare mire
Researchers: say again.
ZA: dashte mirafte ye mashin dare mire.. ta mashinoo oomade.. mashinoo zade ghadesh..oftade hala ham daran mibaranehs bimarestan..

Case 6: FA, was 10 years old, with a sever language delay. She was not able to produce any word till she was 5 years old. She was of low mental ability with low IQ score. As the ST reported she talked inappropriately and could not consider the context when talking with others. She had a short memory span as she forgot what she was saying and if another person say a word she unconsciously insert that word in her speech and made nonsense sentences.

Transcription 9: FA. Story 2. A boy on a tree
FA to Researchers: itori boode … rafte balla ..[10s] .. rafte ….[7s] rafte…[15s] oftad paeein..

As it can be seen from the transcription FA had a little lexical words to aid her utter her intention. She had a long pause in her speech mostly uttered

holophrastic or two word utterances. She could not keep the pace of speaking and could not understand the sequence. Mostly she forgot what she wanted to say and she frequently distracted if any other person say a word.

> *Case 7: MO was 10 years old with average learning ability. She had a short delay in her speech production and the delay was due to her mother's car accident while she was pregnant. Mo underwent surgeries for two times because of a tumor in her brain. She had not had control over her mouth movement and that was appropriately treated using physical messaging.*

She initiated to talk. She started to introduce herself talked about her family members and her plan about future. Whenever she heard a word from her friends she asked for permission to sing a song. It seemed she had no problem to communicate with others but because of the surgeries her eye were twinkling a lot and some of the word were pronounced inappropriately due to her moth motoric movement. Although she had not the production problems in comparison to her peers she had difficulties in comprehending the story. All of her sentences were grammatical and in the form of full sentences. The pause was quite natural and the syntactic order was preserved. [See transcription 10]

> Transcription 10: MO, story 3. The man in the park
> MO to the researchers: in mardoo … kho mifahmi… kargaroo derakhtoo gerfte.. namidoonam dare chi kar mikone …. Dare ashghal jam mikone …

Conclusion

As it was observed most of the utterances produced by the late talkers were holophrastic or two word utterances. Basically, the sentences were short sentences with simple structure. This is in line with the finding of Rice et al. (2008), who reported significantly lower MLU in conversation for 7-yearolds with a history of LLE as compared with their TD peers. The number of words and of complex sentences in conversation appeared to be sensitive markers for reduced linguistic ability as mentioned by Domsch, C. et. al. The second important element which was seen in late talkers utterances in this study was the low number of relative clauses and embedded sentences which concords the findings by Schuele and Nicholls, and Marinellie, although this low frequency of relative clauses can be due to the nature of the picture story which confine them to describe each picture individually, so the participants may not feel necessary to expand their sentences [30, 31]. However the participants can use embedded sentences or subordinate time clauses when narrating the sequence. This point can be elaborated more if the participants are compared with the typically developing peers.

To elaborate more on their narrative pattern, it can be concluded that most of the participants of this study were unable to track the sequence of the pictures and the story. Most of them relied on the hints by the speech therapist or the researchers to keep the track and narrate the story in order. This inability is due to their mental disorder and their low IQ score. Moreover, when they were helped to narrate the story picture by picture and then to retell that as a whole again negligence to the sequence became obvious. Also, the low lexical words available to them was profoundly seen when they made an attempt to narrate the stories. They mostly use compensation strategies by defining the words they needed to describe the pictures.

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