

Urdu-Speaking Boy of 7 Years with Developmental Phonological Disorder

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Abstract

This paper attempts to study a case of a 7-year-old boy, 'M', with Developmental Phonological Disorder (DPD). M is a monolingual Urdu-speaking child. The speech of M was analyzed by using *Picture Naming Tasks* and *Non-word Repetition Tasks*. The result showed that his phonological impairment is severe and systematic in nature. The case study is presented in five sections: primer on developmental phonological disorder, case history, speech assessment, assessment issues, and speech evaluation.

Keywords: Urdu-speaking, Developmental Disorder, Speech, Phonological Disorder

Primer on Developmental Phonological Disorder

Developmental Phonological Disorder (DPD) is one of the subtypes of Speech Sound Disorders. DPD occurs when a child's speech errors are based on the implicit rules of a language (e.g., stopping, fronting, final consonant deletion) despite the ability to produce those sounds correctly in other contexts. One of the examples of DPD is the deletion of lateral sound at the word-final position. A child may be able to say the lateral phoneme /l/ as in leaf, lion, or lip but not in bell, feel or pill; despite the ability to produce the phoneme at the beginning of the word, the child does not produce the same phoneme at the end of the word.

DPD exists without any identifiable aetiology. However, the learning environment is thought to be a default explanation and the genetic explanation has provided an alternative account. Recent research, in addition, suggests that impairment in phonological working memory is considered to underlie the phonological disorder in children as it underlies the creation of phonological representation. Furthermore, the literature studies revealed that children with palatal cleft are at the highest risk of phonological disorder.

An extensive research has been conducted on speech sound disorders among English speaking children. However, it is important to consider whether features of phonological disorder in English speaking children are also found in children who speak other languages. It would have implications for language acquisition theories, and for evaluation and treatment of children with

phonological disorder. Recently, some investigators have highlighted that English language shares some of the features of phonological disorder with other languages (Hua and Dodd as cited in Cummings). Other investigators have revealed that features of phonological disorder are language specific (Brosseau-Lapre and Rvachew’s study as cited in Cummings).

The prevalence of speech sound disorder is 15.6% among 3-years-old children (Campbell et al., as cited in Vick et al.), and approximately 4% of all children have speech delay at age 6 years (Shriberg, Tomblin, and McSweeny’s study as cited in Vick et al.). The estimate of the world prevalence of functional speech sound disorder is approximately between 3.8% to 10%. While as the phonological disorder is estimated to vary between 3% to 5% in normal children and primary population (Kirkpatrick, and Ward’s study as cited in Dodd, Leahy, & Hambly 1989). However, the prevalence of phonological disorder varies as children are not a homogeneous group in terms of types of errors and varies according to the different investigations. It has been studied that girls show low prevalence of phonological disorder than boys.

Case History

M is a 7 year old boy. His mother is a nurse and father, a govt employee. Urdu is the only language spoken at home. His physical development was normal. He has a normal hearing mechanism and normal oral functioning. M is described by his mother as a healthy, cheerful, and helpful boy. His mother reports him as enjoying a number of activities —playing with friends, listen to music, play games and watch cartoons. M’s teacher reports that he likes to take part in classroom activities and is a very cooperative child. It also states that M can only be understood within know context. However, M never gets frustrated when his speech was not understood rather, he would repeat several times what he wants to say. The report also states that M was aware of his speech problem and was sensitive about it. M has been teased for his speech problem by other children. Despite his problem, he loves to attend parties, take part in competitions, readily answers questions in the classroom, and makes new friends.

Speech Assessment

The speech of M was extensively evaluated. He was assessed on *Picture Naming Task* where he was asked to name the given picture and a list of *Non-Word Repetition Task*. Non-Words were played individually on a sound recorder where M was asked to repeat the same. Some of the M’s single word productions (Table1) and non-word productions (Table 2) are shown below with their phonemic target.

S.no	Urdu	English	Phonemic Target	Client Production
1.	bacha	child	/bətʃtʃa/	[batta:]
2.	tamatar	tomato	/ʈama:ʈar/	[tama:tə]

3.	dhol	drum	/dʰol/	[do:]
4.	gaas	grass	/ga:s/	[ga:]
5.	chat	roof	/tʃʰat/	[tat]
6.	jangal	forest	/dʒaŋal/	[kakkal]
7.	fawwara	fountain	/favva:ra:/	[pama:la]
8.	gosla	nest	/gʰōsla/	[go:ta]
9.	zuban	tongue	/zuba:n/	[duba:n]
10.	hath	hand	/ha:tʰ/	[a:tʰ]
11.	roti	bread	/roʃi:/	[u:ti]
12.	eid	festival	/i:d/	[i:t]
13.	kala	black	/ka:la:/	[ka:va]
14.	sanp	snake	/sã:p/	[ta:p]
15.	gubara	balloon	/yuba:ra:/	[guba:la]
16.	bhai	brother	/bʰãi/	[bãi:]
17.	pahad	mountain	/paha:dʃ/	[pa:r]
18.	budha	old man	/bu:dʰha:/	[bu:da]

Table 1: Picture Naming Tasks; single word with both actual and client's production.

S.no	Non-Word	Phonemic Target	Client Production
1.	luphan	/lupʰan/	[vupan]
2.	saad	/sa:dʃ/	[ta:]
3.	takhi	/ta:kʰi/	[ta:ki:]
4.	hoog	/hu:g/	[uk]
5.	raqa	/raqa:/	[aqa:]
6.	rij	/ridʒ/	[jid]
7.	pazi	/pa:zi:/	[ka:di:]
8.	itta	/iʃa:/	[ita:]
9.	badhal	/baɖʰal/	[baɖə]
10.	oob	/ob/	[op]
11.	daghab	/da:yab/	[da:kap]
12.	ribh	/ribʰ/	[jip]

Table 2: Non-Word Repetition Tasks; phonemic target with client's production

Assessment Issues

There is a dearth of Phonological Assessment Tools in languages other than English. The lack of assessment of phonological development in children is due to the lack of common consensus of phonological norms in other languages (Da Saliva et al as cited in Cummings). This

may have an unfavourable outcome for the assessment of monolingual and bilingual children of other languages with phonological disorder. M's sound preference was assessed by using an informal phonological assessment procedure—*Picture Naming Task* and *Non-Word Repetition Task*. However, it was ensured that each phoneme in all the word positions was taken into consideration. Picture Naming Task access the internal lexicon to generate the rule-based string of phonemes. While Non-Word Repetition Task were used to study the underlying phonological system. However, non-word task is the easiest task as it needs not to access the internal lexicon. McLeod and Baker (2014) states that Speech Language Pathologists use informal assessment procedures to diagnose multilingual children with speech sound disorder.

Speech Evaluation

It is clear from the above data that M is making the use of systematic sound preferences. Systematic sound preference is considered to be the evidence of phonological disorder (Grunwell's study as cited in Cummings). Fronting, backing, stopping, gliding, devoicing, substitution, deletion, un-aspiration, de-nasalization, cluster reduction or simplification, are the most occurrence of the M's sound system. M engages in un-aspiration of Aspirated sounds at the word's initial, and medial position. The alveolar trill [r] is either deleted or substituted with lateral alveolar [l] at the final or the middle position of a word. And lateral alveolar [l] itself is either glided or deleted at the initial, middle, and final position of a word. M does not produce nasalized vowels as in example 8 and 14 of Table 1. M extends vowels beyond their normal duration before and after plosive alveolar [t]. M engages in initial consonant deletion particularly the glottal fricative [h] (e.g., 10; Table 1), and alveolar trill [r] from the non-word task (e.g., 4; Table 2). M involves in fronting of sounds particularly plosive at word initial, medial, and final position and devoicing of plosives at initial and final position of a word. M engages in cluster reduction at final syllable of a word and stopping at word-initial, word-medial, and word-final positions. The instance of backing can be seen in the example 7 of Table 2.

M showed the same error pattern in *Picture Naming Tasks* and *Non-Word Repetition Tasks*. It can be seen that M has difficulty in remembering particular phonemes in a particular environment. There can be two possible reasons: children with phonological disorder may store incomplete phonological representation of a word (Chiat's study as cited in Dodd, Leahy, & Hambly 1989). Another possible reason can be, phonological representation can be stored but the mental operations which are involved in generating the output may be impaired (Leahy and Dodd's study as cited in Dodd, Leahy, & Hambly 1989).

Concluding Remark

A great number of research on Developmental Phonological Disorder (DPD) has been driven by advance in both applied linguistics and cognitive science. Especially, research in psycholinguistics and cognitive neuroscience have pointed out the structure of language among

typical and atypical individuals. An extensive research has been conducted on DPD among English speaking children. However, research on language other than English is crucial to find out the nature of language deficit.

As is evident from the above M displayed restricted phonemic inventory, systematic error patterns and distorted syllable structure in his speech. It can be easily ascertained by the fact that error patterns are language specific i.e., depends on the phonological structure of the language. However, general inclination of errors is visible in all the languages.

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Appendix

	Urdu	English	Phonemic Target	Client Production
1.	paise	money	/pese /	[pete]
2.	phal	fruit	/p ^h al/	[pa]
3.	bacha	child	/bətʃtʃa/	[batta:]
4.	ek	one	/ek/	[et]
5.	teen	three	/ti:n/	[ti:]
6.	thali	plate	/t ^h a:li:/	[ta:i:]
7.	makaan	house	/maka:n/	[maka:n]
8.	tamatar	tomato	/tama:tar/	[tama:tə]
9.	khetti	sour	/k ^h ətʃi:/	[kəta:]
10.	imli	tamarind	/imli:/	[imi:]
11.	ghadhi	watch	/g ^h əʃi:/	[gədi:]
12.	dhol	drum	/d ^h ol/	[do:]
13.	khana	food	/k ^h a:na:/	[ka:na:]
14.	gaas	grass	/ga:s/	[ga:]
15.	ghar	home	/g ^h ar/	[gal]
16.	chaar	four	/tʃa:r/	[ta:]
17.	chat	roof	/tʃ ^h at/	[tat]
18.	jail	net	/dʒa:li:/	[da:i:]
19.	jangal	forest	/dʒaŋal/	[kakkal]
20.	jadu	broom	/dʒa:ru:/	[da:vu:]
21.	fafwara	fountain	/favva:ra:/	[pama:la]
22.	gosla	nest	/g ^h ōsla/	[gō:ta]
23.	zuban	tongue	/zuba:n/	[duba:n]

24.	shair	lion	/ʃe:r/	[te:]
25.	khargosh	rabbit	/xargof/	[kagot]
26.	hath	hand	/ha:tʰ/	[a:th]
27.	naak	nose	/na:k/	[na:k]
28.	ladoo	sweet	/ləɖu:/	[vodu:]
29.	roti	bread	/roʈi:/	[u:ti]
30.	wardi	uniform	/vardi:/	[vadi:]
31.	yakka	bullock cart	/jakka/	[jakka]
32.	eid	festival	/i:d/	[i:t]
33.	unt	camel	/u:nʈ/	[u:t]
34.	allah	allah	/alla:h/	[ava]
35.	aam	mango	/a:m/	[a:m]
36.	dawat	inkpot	/dava:t/	[dava:t]
37.	dhul	dust	/dʰu:l/	[du:]
38.	thudi	chin	/ʈʰuɖi:/	[tudi:]
39.	doctor	doctor	/ɖokʈar/	[dotal]
40.	kala	black	/ka:la:/	[ka:va]
41.	kalam	pen	/kalam/	[kalam]
42.	sanp	snake	/sa:p/	[ta:p]
43.	gubara	balloon	/ɣuba:ra:/	[gubala]
44.	ungli	finger	/uŋli:]/	[uŋi:]
45.	bhai	brother	/bʰāi/	[bāi:]
46.	makhi	housefly	/mækʰkʰi:/	[mækki:]
47.	bazu	arm	/ba:zu/	[ba:du]
48.	chaku	knife	/tʃa:ku:/	[ta:ku]
49.	saib	apple	/se:b/	[te:b]
51.	aalu	potato	/a:lu/	[a:vu:]
52.	phad	mountain	/paha:ɖ/	[pa:r]
53.	budha	old man	/bu:ɖha:/	[bu:da]

	Non-Word	Phonemic Target	Client Production
1.	puba	/pu:ba/	[ku:ba:]
2.	luphan	/lupʰan/	[vupan]
3.	ribh	/ribʰ/	[jip]

4.	babhat	/ba:b ^h at/	[ba:bat]
5.	zaab	/za:b/	[da:p]
6.	zuthan	/zut ^h an/	[du:tan]
7.	hada	/hada:/	[ada:]
8.	nadh	/na:d ^h /	[na:t]
9.	budhan	/buɖ ^h an/	[budan]
10.	moot	/mu:t̪/	[mu:t]
11.	buthal	/bu ^h al/	[buʃal]
12.	meeth	/mi:t̪ ^h /	[mi:t]
13.	naad	/na:ɖ/	[na:]
14.	badhal	/baɖ ^h al/	[baɖə]
15.	saad	/sa:ɖ/	[ta:]
16.	takhi	/ta:k ^h i/	[ta:ki:]
17.	pikh	/pik ^h /	[pik ^h]
18.	hoog	/hu:g/	[uk]
19.	mughi	/mug ^h i:/	[mugi:]
20.	nugh	/nug ^h /	[nuk]
21.	raqa	/raqa:/	[aqa:]
22.	maak	/ma:q/	[ma:q]
23.	raach	/ra:tʃ/	[a:t]
24.	wachak	/vatʃak/	[vatat]
25.	wach	/va:tʃ]	[va:tʃ]
26.	daji	/da:dʒi:/	[da:gi:]
27.	rij	/ridʒ/	[jid]
28.	kijha	/kidʒ ^h a/	[kida:]
29.	nijh	/nidʒ ^h /	[nik]
30.	gafi	/ga:fi:/	[ga:pi:]
31.	pazi	/pa:zi:/	[ka:di:]
32.	nakhi	/na:xi:/	[na:ki:]
33.	saakh	/sa:x/	[ta:k]
34.	bugh	/buy/	[buk]
35.	daghab	/da:ɣab/	[da:kap]
36.	fama	/fa:ma:/	[pa:ma:]
37.	div	/div/	[div]
38.	itta	/iʃa:/	[ita:]
39.	iffa	/i:fa:/	[i:pa:]
40.	uja	/udʒa:/	[uda:]
41.	uba	/ubba:/	[uba:]

42.	oob	/ob/	[op]
43.	adda	/adda:/	[adda:]
44.	ajul	/a:dzul/	[a:dul]
45.	bair	/be:r/	[be:]
46.	aitta	/eʃa/	[e:ta:]
47.	opa	/opa/	[opa]