Effectiveness of Roleplay on Knowledge Regarding Dyslexia Among the Parents of Preschooler

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ABSTRACT

Learning to read is extremely difficult for about 10% of children across cultures because they are affected by developmental dyslexia (DD). According to the dominant view, DD is considered an auditory-phonological processing deficit. (Gori and Facoetti, 2014) However, accumulating evidence from developmental and clinical vision science, suggests that the basic cross-modal letter-to-speech sound integration deficit in DD might arise from a mild atypical development of the magnocellular-dorsal pathway which also contains the main fronto-parietal attentional network. Letters have to be precisely selected from irrelevant and cluttering letters by rapid orienting of visual attention before the correct letter-to-speech sound integration applies. Our aim is to review the literature supporting a possible role of perceptual learning (PL) in helping to solve the puzzle called DD (Gori-Facoetti-2013, no date). PL is defined as improvement of perceptual skills with practice. Based on the previous literature showing how PL is able to selectively change visual abilities, we here propose to use PL to improve the impaired visual functions characterizing DD and, in particular, the visual deficits that could be developmentally related to an early magnocellular-dorsal pathway and selective attention dysfunction. The crucial visual attention deficits that are causally linked to DD could be, indeed, strongly reduced by training the magnocellular-dorsal pathway with the PL, and learning to read for children with DD would not be any more such a difficult task. This new remediation approach – not involving any phonological or orthographic training – could be also used to develop new prevention programs for pre-reading children at DD risk. Effectiveness of roleplay knowledge regarding dyslexia among the parents of pre-schooler. A pre-experimental pre-test, post-test research design was used to conduct this study. Purposive sampling was the sampling method used to collect data from parents of pre-schoolers by providing structure multiple choice questionnaires. After collecting pre-test data, roleplay was done in front of parents of pre-schooler. Seven days were Assessment of knowledge based on criteria measurement (excellent, good, average, poor, very good). Post-test information was gathered after seven days from the day of learning intervention. Seven days was assigned after getting expert opinions as well as to give time for implication of knowledge through practice of knowledge regarding dyslexia. The mean pre-test knowledge score was 6.18 ± 1.26 and mean post-test knowledge score was 14.45 ± 2.99 . There was a statistically significant improvement in the level of knowledge regarding dyslexia among parents of pre-schooler. There was a significant association of knowledge score in relation to age and education of pre-schoolers parents and age of pre-schoolers on roleplay regarding dyslexia. There was no significant association of knowledge score in relation to age, gender, education of parents of pre-schoolers. The study was effective because the post-test knowledge score improved than the pre-test knowledge score. So, the roleplay on dyslexia has proved to improve parents of pre-schoolers knowledge regarding dyslexia.

KEY WORDS: EFFECTIVENESS, ROLEPLAY .KNOWLEDGE, DEVELOPMENTAL DYSLEXIA ,PARENTS OF PRE-SCHOOLER.

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INTRODUCTION

Learning to read is extremely difficult for about 10% of children across cultures because they are affected by developmental dyslexia (DD). According to the dominant view, DD is considered an auditory-phonological processing deficit. However, accumulating evidence from developmental and clinical vision science, suggests that

the basic cross-modal letter-to-speech sound integration deficit in DD might arise from a mild atypical development of the magnocellular-dorsal pathway which also contains the main fronto-parietal attentional network. Letters have to be precisely selected from irrelevant and cluttering letters by rapid orienting of visual attention before the correct letter-to-speech sound integration applies. Our aim is to review the literature supporting a possible role of perceptual learning (PL) in helping to solve the puzzle called DD.

PL is defined as improvement of perceptual skills with practice. Based on the previous literature showing how PL is able to selectively change visual abilities, we here propose to use PL to improve the impaired visual functions characterizing DD and, in particular, the visual deficits that could be developmentally related to an early magnocellular-dorsal pathway and selective attention dysfunction. The crucial visual attention deficits that are causally linked to DD could be, indeed, strongly reduced by training the magnocellular-dorsal pathway with the PL, and learning to read for children with DD would not be any more such a difficult task. This new remediation approach – not involving any phonological or orthographic training – could be also used to develop new prevention programs for pre-reading children at DD risk.

MATERIAL AND METHODS

A pre-experimental pre-test, post-test research design was used in this interventional study. The study was conducted during and the setting was selected in the yelakeli village after getting ethical permission (Ref. no: DMIMS(DU)/IEC/2020-21/152). By using non-probability convince sampling technique, 60 parents of pre-schoolers were selected based on the calculation.

$$n = \frac{Z^2 P(1-P)^2}{d^2}$$

where, z=level of significance at 5% i.e., 95% confidence interval=1.96, which is 1.96, P=prevalence of dyslexia=5%=0.05 d=Desire error of margin=6%=0.06. The sample size was calculated to include 60 variable.

The parents of preschooler were informed and explained about the objective of the study. The inclusion criteria were: (I) Pre-schooler child parents who can understand Marathi (ii) Pre-schooler child parents who are willing to participate in study. Demographic variables were collected in terms of age, gender, education. A structured questionnaire, Annexure 1 with 24 multiple choice questions was used. The sections were - (I) meaning and causes of dyslexia; (ii) types of dyslexia (iii) Diagnosis and management of dyslexia. Each correct answer carried one mark and total score was 24. The tool was validated by five experts from nursing department, The data collection process was planned to gather demographic information and the knowledge on dyslexia. The roleplay organized on (I) meaning and causes and risk factors dyslexia ; (ii) sign and symptoms and diagnosis of dyslexia (iii)

prevention and management of dyslexia. There was roleplay done in front of parents of preschooler in rural area and. The post-test structured questionnaire was administered after 7 days.

Statistical Analysis: The demographic data, collected in pre-test stage, analysis was done in terms of frequency and percentage. The paired t-test was used to compare pre and post test knowledge scores.

RESULTS

Table 1. Percentage wise distribution of Parents of Pre-schoolers according to their age(yrs.) n=60

Demographic Variables	No. of parents	Percentage (%)
Age(yrs.)		
20-25 yrs	23	38.3
26-30 yrs	26	43.3
31-35 yrs	9	15.0
≥36 yrs	2	3.3
Gender		
Male	21	35.0
Female	39	65.0
Residence		
Rural	60	100
Urban	0	0
Education		
Primary	6	10.0
Secondary	27	45.0
Higher Secondary	22	36.7
Graduate and above	5	8.3
Age of preschooler child		
3 yrs.	7	11.7
4 yrs.	14	23.3
5 yrs.	26	43.3
6 yrs.	13	21.7

Table 2. Assessment with level of pre-test knowledge. n=60

Level of pre-test knowledge	Score Range	Level of Pre-test Knowledge Score	
		No of parents	Percentage
Poor	0-20% (0-4)	13	21.67
Average	21-40% (5-9)	47	78.33
Good	41-60% (10-14)	0	0
Very Good	61-80% (15-19)	0	0
Excellent	81-100% (20-24)	0	0
Minimum score		3	
Maximum score		10	
Mean knowledge score		6.18 ± 1.26	
Mean % Knowledge Score		24.73 ± 5.07	

The above table shows that 21.67% of the parents of pre-schoolers had poor level of knowledge score and 78.33% had average level of knowledge score. Minimum knowledge score in pre-test was 3 and maximum

knowledge score in pre-test was 10. Mean knowledge score in pre-test was 6.18 ± 1.26 and mean percentage of knowledge score in pre-test was 24.73 ± 5.07 . The above table shows that 28.33% of the parents of pre-schoolers had average level of knowledge score, 21.67% had good and 50% had very good level of knowledge score. Minimum knowledge score in post-test was 8 and maximum knowledge score in post-test was 18. Mean knowledge score in post-test was 14.45 ± 2.99 and mean percentage of knowledge score in post-test was 57.80 ± 11.97 .

Figure 1

Table 3. Assessment with level of post-test knowledge n=60

Level of posttest knowledge	Score Range	Level of Posttest Knowledge Score	
		No of parents	Percentage
Poor	0-20%(1-5)	0	0
Average	21-40%(6-10)	17	28.33
Good	41-60%(11-15)	13	21.67
Very Good	61-80%(16-20)	30	50
Excellent	81-100%(21-25)	0	0
Minimum score		8	
Maximum score		18	
Mean knowledge score		14.45 ± 2.99	
Mean % Knowledge Score		57.80 ± 11.97	

Table 4. Significance of difference between knowledge score in pre and post-test of parents of pre-schoolers n=60

Overall	Mean	SD	Mean Difference	t-value	p-value
Pre-Test	6.18	1.26	8.26 ± 3.15	20.32	0.0001 S, $P < 0.05$
Post Test	14.45	2.99			

There was a significant association of knowledge score in relation to age and education of pre-schoolers parents and age of pre-schoolers on roleplay regarding dyslexia. There was no significant association of knowledge score in relation to age, gender, education of parents of pre-schoolers.

Figure 2

DISCUSSION

The study findings are supported through the studies conducted worldwide. A comparative study was conducted to investigate the incidence of dyslexia among young offenders in Kuwait. A total of 91 children 8 juvenile delinquent welfare centers across Kuwait were interviewed and tested. ('3005262301232303UmaK.pdf', no date) A measure of non-verbal reasoning ability was used to exclude those with low general ability. The remaining 53 participants were tested on their ability to identify alliteration and rhyme, retain and manipulate sequences of digit and letter names, decode novel letter strings and identify words within letter chains. The results indicated that the percentage of individuals presenting evidence of dyslexia was much larger (greater than 20%) in this population of young offenders than would be expected based on the national average (around 6%) of dyslexics in Kuwait derived from a nationwide study. This study concluded that there is a previous evidence for an increased frequency of dyslexia among young offenders.

A study was conducted to determine the prevalence of psychological depression in children with Dyslexia in Auckland, New Zealand (Huc-Chabrolle et al., 2010). This study has precipitated the development of programs aimed at preventing the onset of depression. This review evaluates evidence for the effectiveness of these prevention programs. (no date) The determinants for inclusion were that the trial included a psychological and educational prevention programme for children aged 5 to 10 years- old who did not fall into the clinical range on standardized, validated, and reliable rating scales of depression.

The study concluded that although there is insufficient evidence to warrant the introduction of depression prevention programs currently, results to date indicate that further study would be worthwhile. There is a need to compare interventions with a placebo or some sort of active comparison so that study participants do not know whether they are in the intervention group or not, to investigate the impact of booster sessions, and to consider practical implementation of prevention programs.

Limitation: The study was limited to rural area in wardha district.

CONCLUSION

It can be concluded that knowledge on dyslexia improved after showing roleplay among parents of pre-schoolers.

Economic assistance and support: Nil.

Conflicts of Interest: Nil

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