Journal of Arts and Social Sciences
https://ojs.jass.pk

Development and Validation of the Forman Dyslexia Screening Checklist: A Culturally Relevant Tool for Early Identification of Dyslexia in Pakistani Students

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ARTICLE INFO

Article history:
Submitted 19.06.2025
Accepted 28.11.2025
Published 31.12.2025

Volume No. 12
Issue No. II
ISSN (Online) 2414-8512
ISSN (Print) 2311-293X
DOI:

Keywords: Dyslexia, Screening Tool, Educational Equity, Early Identification, Mixed-Methods

ABSTRACT

Dyslexia is a Neurodevelopmental disorder that involves problems with reading, spelling, and recognizing words that making it very difficult in educational settings in various parts of the world. This paper entailed the creation of the Forman Dyslexia Screening Checklist, keeping in mind the advice given by the local teachers and psychologists to make it culturally and linguistically relevant. A mixed approach was adopted involving qualitative interviews of the field experts who had experience of over 3 years and those who had handled over 3 cases of dyslexia to generate items and quantitative studies to validate it. The checklist was trialed in a sample of 188 participants (N = 188; n = 130 with dyslexia and n = 58 without dyslexia) using a purposive sampling method. The teachers and school psychologists administered the checklist. The children were aged 5-12 years, with the approach of using double blind method to administer the checklist. The checklist has demonstrated high reliability (Cronbach's alpha = 0.997) and high-level construct validity, as reflected in the robust unidimensional structure determined through exploratory factor analysis. The independent samples t-test results were significant, which mean that the Forman Dyslexia Screening Checklist is effective and identifies the symptoms of dyslexia and is able to differentiate between dyslexic and non-dyslexic individuals with appropriate accuracy. The paper shows the urgent necessity of early recognition and intervention and proposes the dyslexia screening checklist in the school system to detect and help students with dyslexia. The study has emphasized the role of culturally suitable screening procedures and provides a basis for future research to develop the checklist and improve it further in various situations.

Introduction

Dyslexia is a common learning disability affecting approximately 5-10% of individuals globally, with variations depending on diagnostic criteria and populations studied. Characterized primarily by difficulties in reading, spelling, and word recognition, dyslexia transcends cultural, socioeconomic, and linguistic boundaries, posing significant educational challenges. Despite its prevalence, dyslexia often remains under-recognized or misdiagnosed in educational systems, leading to substantial impediments in

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learning and personal development (Ali, 2023).

The development of effective screening tools is critical to identify dyslexia early in a child's educational career. Early detection enables timely interventions, which are pivotal in mitigating the challenges associated with dyslexia and enhancing educational outcomes. Although screening tools are available, they cannot be used in Pakistan because either they are inaccessible due to resource constraints or there are otherwise constraints in the study as per sample size or population, restricting the tools for generalization. Moreover, some tools require extensive training of the assessors before administration, and such facilities are unavailable in Pakistan. As these tools are neither developed nor adapted to the

Pakistani culture, therefore, is not linguistically appropriate for Pakistani children and practitioners (Qureshi et al., 2024).

The objectives of the study were to develop a screening checklist for dyslexia for teachers, parents, and clinicians. To validate the checklist's effectiveness in accurately identifying individuals with dyslexia. To evaluate whether the items on the checklist effectively capture the key symptoms and characteristics associated with dyslexia. To ensure the ease of administration, time required, and cost effectiveness of the checklist so that it can be used in various settings such as schools and clinics. The theoretical framework for understanding dyslexia involved a multidimensional perspective that encompassed cognitive, neurological, genetic, and environmental factors. Several theoretical models were proposed to explain the complex nature of dyslexia. Among these, "The Phonological Deficit Theory" proved to be central for the explanation of dyslexia, suggesting that the core issue lies in the phonological processing system of the brain. According to this theory, individuals with dyslexia have difficulties with the phonological component of language, which is crucial for understanding how sounds are represented in words. This impairment affects their ability to segment (break down) and manipulate sounds, leading to significant challenges in decoding (sounding out) words and spelling accurately. These difficulties are thought to stem from deficits in the brain's ability to process the basic sounds of language, not from a lack of intelligence or effort (Snowling, 2000).

The phonological deficit theory aligns with the symptoms targeted by the Forman Dyslexia Screening Checklist, such as difficulties in recognizing and manipulating phonemes, decoding words, and reading fluency problems. The checklist items are designed to identify these specific phonological processing difficulties, ensuring that the tool is grounded in a well-established theoretical framework. Understanding that the primary issue in dyslexia is phonological processing informs the development of targeted interventions (Ramus & Ahissar, 2012).

In Pakistan, dyslexia is prevalent but often under-recognized, with limited awareness hindering early identification and intervention. A screening checklist for dyslexia is a valuable tool for teachers, parents, and clinicians. It serves as a communication tool between clinicians and educators, ensuring a holistic understanding of the individual. The checklist also empowers parents to engage with schools to ensure their child receives necessary resources and accommodations. The objective was to create a screening checklist for early identification of dyslexia, usable by teachers, parents, and clinicians.

Over the past few years, researchers have explored factors for the diagnosis of dyslexia, and assessment tools have been introduced. In 2021, Andresen and Monsrud explored Why, When, and with What assessment of dyslexia. The study's objective was to explore the methods used in assessing dyslexia, covering diagnostic criteria and the test battery. The study employed the importance of phonological deficits in children with dyslexia to be an important aspect for diagnosis. A study conducted by Nilssen and Friborg (2021) focused on the creation of a new dyslexia assessment tool for children, which they labeled the Dysmate-C Test. This is a computerized assessment that involves various measures, including letter knowledge, phoneme awareness, rapid automatized naming, working memory, decoding, and spelling skills. Naeem et al (2014) conducted a study on Dyslexia: A Myth or Reality.

Identification of Dyslexia in School Children of Grades Fourth and Fifth. The objective of the study was to investigate the spectrum of precise learning difficulties in young school children in the fourth and fifth grades. The results were deliberated in the context of observations noted in third-world nations, where academic challenges often share similarities with dyslexia. It was also highlighted that the prevalent screening tools in Pakistan for dyslexia, such as the Bangor Dyslexia Screening Test, Dyslexia Screening Test (DST), WISC, and Slosson Intelligence Scale, mirror the literacy-focused skills emphasized in schools. Hence, it is imperative to conduct assessments that take into account the pattern of specific learning difficulties within the cultural context of Pakistan (Naeem et al., 2014).

Rationale of the study

The development of the Forman Dyslexia Screening Checklist is necessitated by the unique linguistic and cultural contexts of Pakistan, where conventional Western screening tools may not suffice. This research addresses the gaps discussed above by creating a checklist adapted to the needs of the region,

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involving teachers, parents, and psychologists to leverage their diverse insights on student behavior and learning difficulties. Such a tool is critical for early detection and intervention, which are pivotal in enhancing academic trajectories and supporting educational equity.

Furthermore, this tool aims to democratize access to educational resources, ensuring all students, regardless of their learning challenges, receive the necessary support to succeed academically and socially. This initiative also contributes to the body of academic knowledge and can inform policy decisions, fostering a more inclusive and supportive educational environment throughout Pakistan. Currently, screening and diagnostic practices vary widely, often lacking in sensitivity or specificity, and are inaccessible to many due to cost or resource availability. Therefore, the need for an innovative, accessible, and accurate screening tool is evident and forms the foundation of this research. This thesis aims to propose a new screening methodology that leverages contemporary research insights to improve the precision and accessibility of dyslexia identification.

Research Questions

- How can a checklist be designed to aid teachers in identifying early signs of dyslexia in students within the Pakistani educational context?
- What specific behavioral, cognitive, and academic indicators of dyslexia should be included in the checklist for effective use by teachers and parents in Pakistan?

Literature Review

Eikerling et al. (2022) introduced a remote screening tool for dyslexia in bilingual children. The research emphasizes the importance of evaluating language and reading skills in both languages spoken by bilingual children to avoid misdiagnoses related to communication or learning disorders. Recognizing the constraints like the limited availability of clinical and educational personnel, computerized screenings that automatically assess children's reading performance, encompassing accuracy and speed, emerge as a valuable alternative in clinical and school settings.

The investigators present an innovative internet-based screening platform crafted to evaluate language and reading skills. They conducted initial validation with primary school children who exclusively spoke Italian, Mandarin–Italian bilinguals, and English–Italian bilinguals, all based in Italy for residence and studies. Their screening task performance in Italian and, for bilingual individuals, in their mother tongue, was juxtaposed with outcomes from standardized reading assessments and insights gathered from parental and teacher surveys.

Through correlational analyses, the researchers identified the screening tasks that most effectively contributed to identifying the risk of disorders related to reading, the scientists introduced a groundbreaking web-based screening tool formulated for assessing language and reading capacities. They conducted preliminary validation with primary school youngsters who were solely Italian speakers, Mandarin–Italian bilinguals, and English–Italian bilinguals, all residing and studying in Italy.

Their screening task performance in Italian and, for bilingual participants, in their native tongue, was compared with results from standardized reading evaluation tests, along 24 with input from parental and teacher questionnaires. According to these findings, researchers explore the potential of this groundbreaking web-based screening platform and its significance in addressing language and reading assessment challenges for bilingual children (Eikerling et al., 2022).

Andresen and Monsrud (2021) did research titled “Assessment of Dyslexia, When, and with What?” They established that the lack of consensus among researchers regarding the definition of dyslexia has resulted in inconsistencies in the operational definitions used for dyslexia assessments. This, in turn, poses a threat to the validity of these assessments, which could have detrimental implications for children requiring remedial reading instruction. Thus, the study's objective is to explore the methods used in assessing dyslexia, covering diagnostic criteria and the test battery employed.

The study involved 118 professionals in South-Eastern Norway; the responsibility for assessing dyslexia falls under Educational-Psychological Services (EPSs). The researchers surveyed using a questionnaire comprising 19 questions pertaining to assessment procedures in their respective school districts. The findings revealed that a majority of the EPSs (102) placed significant emphasis on the results obtained from a single test battery, namely Logos, in their assessment practices. Furthermore, more than 65% stated, schools in their districts utilized an assessment tool for reading, lacking adequate documentation of its psychometric properties (Andresen & Monsrud, 2021)

Methodology

Research Design

Based on literature review and indigenous study of the scales and checklists, mixed method research design was used and the process consisted of five steps following mixed methods scale development model

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proposed by Creswell and Clark (2011) (Creswell & Clark, 2011).

Phases of the study

The present study comprised of three phases.

Phase 1: Item Generation

The first phase was item pool generation. To formulate the items of the checklist, DSM-5 TR criteria for Dyslexia and literature review were used along with semi-structured interviews from teachers and psychologists having experience in dealing with children with dyslexia. An initial pool of 59 items was generated in this phase. For interviews, inclusion and exclusion criteria were as follows.

Inclusion Criteria

- Experts in the field who have more than 5 years of experience.
- Experts who have dealt with more than 5 cases of dyslexia in their careers.

Exclusion criteria

- Experts who had not completed a complete intervention plan with a child diagnosed with dyslexia.
- Experts who had not dealt with cases of dyslexia.

Phase 2: Content Validity

The preliminary 59-item list was then given to six experts in psychology (with more than 7 years of experience and more than 5 cases of dyslexia) for content validity. The experts rated the items from 0-4. With 0 being completely irrelevant and inaccurate and 4 being completely relevant and accurate. On the basis of ratings by the experts, descriptive analysis was done by using SPSS. The items with less than three in both relevancy and accuracy were dropped. The pool of 36 items was then selected for the pilot study.

Six psychologists and teachers with students of dyslexia in their classrooms and more than five years of experience were selected for the pilot study. They administered the checklist on children, and their opinions were then discussed with a senior psychologist and supervisor. Ratings were taken again from six experts in psychology. At the end, a refined checklist of 26 items was finalized.

Phase 3: Reliability and Validity

Once the checklist was formed, the reliability and validity of the checklist were established. Exploratory factor analysis was done to establish construct validity for the checklist. The sample size was selected based on the number of items on the checklist (number of items x 5). According to this criterion, the sample size was 130. Purposive sampling was used for this purpose.

Inclusion criteria for the assessor

- Teachers and school psychologists with 3 or more years of experience in their field
- Must have dealt with two or more cases of dyslexia.

Inclusion criteria for the assessed

- Children between the ages of 5-12 years.
- Children from grades 1-5.
- Children with diagnosed dyslexia are studying in school along with children who are not diagnosed with any disorder.

Sample and Sampling Strategy for Administration of the Checklist

Data was collected from government and private institutes using purposive sampling techniques. The sample size of children was 188, from which 130 were students with dyslexia diagnosed with, and 58 were typical students without any diagnosis, aged between 5-12 years. This was done to formulate the divergent validity of the checklist. Educators and school psychologists administered the checklist on both dyslexic and non-dyslexic children.

Statistical Analyses

SPSS version 26 was used to analyze the data. Exploratory Factor Analysis was done to extract underlying factors and evaluate construct validity. Cronbach's alpha was used to see internal consistency. An independent sample T test was used to establish divergent validity.

Ethical Considerations

Ethical standards of the American Psychological Association APA were followed throughout the study.

- The study was approved by the ethical committee, Institutional Review Board (IRB) of FC College, for ethical perspective.
- Permission for data collection was taken from the authorities.
- Informed consent was provided to the participants.
- A brief description of the nature and the purpose of the study was provided to participants.
- Participants were also informed that their participation in the present study is voluntary and that they can withdraw from the study at any point.
- Confidentiality was ensured at all stages of the study.

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- Respect and Dignity of the participants were ensured.

Results

The demographics of the sample are described using means and standard deviations for continuous variables, whereas frequencies and percentages are used for categorical variables. Cronbach's alpha for reliability and Exploratory factor analysis or construct validity is reported for the Forman Dyslexia Screening Checklist.

Table 1

Demographics of the participants (N= 188)

Demographic Characteristics	M	SD	Minimum	Maximum
Years of Experience of the Assessor	9.65	3.48	3	18
Number of cases of Dyslexia Dealt by the Assessor	10.98	10.79	2	46
Age of the assessed child	8.69	1.80	5	12
Grade of the assessed	2.98	1.45	1	5

M= Mean, SD = Standard Deviation

The above table shows the descriptive statistics of the demographics of both children and the assessors.

Table 2

Frequencies and percentages of the Demographic Characteristics of the Participants (N= 188)

Demographic Characteristics		*f*	%
Profession			
	Teacher	161	85.6
	Psychologist	27	14.4
Gender of the Assessed			
	Male	63	33.5
	Female	125	66.5
Socioeconomic Status Of the Assessed			
	Upper Class	124	66.0
	Middle Class	42	22.3
	Lower Class	22	11.7
Type of Institute			
	Government	28	14.9
	Semi- Government	12	6.4
	Private	148	78.7
City			
	Lahore	151	80.3
	Muridke	21	11.2
	Sheikhpura	16	8.5
Diagnosis			
	Dyslexia	130	69.1
	No Diagnosis	58	30.9

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The table 2 shows that majority of the assessors were teachers (*f* = 85.6%) as compared to psychologist (*f* = 14.4 %). Most participants belonged to the upper class (*f* =66.0%), followed by the middle class (*f* = 22.3%) and lower class (*f* = 11.7%). The majority of participants are from private institutes (*f* = 78.7%), with fewer from government (*f* =14.9%) and semi-government institutes (*f* = 6.4%). The largest proportion of participants was from Lahore (*f* = 80.3%), followed by Muridke (*f* =11.2%) and Sheikhpura (*f* = 8.5%). A significant portion of the participants had a diagnosis of dyslexia (*f* = 69.1%), while the rest have no diagnosis (*f* = 30.9%).

Reliability Analysis

Table 3

Internal consistency of the Forman Dyslexia Screening Checklist

Factor	Number of Items	(FDSC) α
Factor	26	.997

α= Cronbach alpha coefficient

A reliability analysis was done to obtain the alpha value of the factor in the Development of the Forman Dyslexia Screening Checklist. The reliability analysis of the Dyslexia Symptoms Checklist yielded Cronbach's Alpha of 0.997, based on 26 items. This extremely high value of Cronbach's Alpha indicates excellent internal consistency among the items, suggesting that they are highly interrelated and reliably measure the same underlying construction. Generally, a Cronbach's Alpha value above 0.70 is considered acceptable, with values above 0.90 indicating excellent reliability. Therefore, the Dyslexia Symptoms Checklist demonstrates outstanding internal consistency, making it a reliable tool for assessing dyslexia symptoms.

Establishing Construct Validity

To establish construct validity, one of the most common procedures is to carry out factor analysis. The current study also uses exploratory factor analysis to construct the validity of the checklist. Factor Analysis also helps to identify the underlying factors among the items and explain their relationship (Johnson & Wichern, 2019).

Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis was done to identify the underlying factors of the Forman Dyslexia Screening Checklist. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.836, indicating that the sample size was adequate for factor analysis (values above 0.6 are considered acceptable). Bartlett's Test of Sphericity was significant ($p < 0.001$), supporting the factorability of the correlation matrix. Scree Plot analysis was considered in determining the number of factors (Adams, 2009).

Table 4

Kaiser-Meyer-Olkin Measure and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.966
Bartlett's Test of Sphericity	Approx. Chi-Square	14637.851
	df	325
	Sig.	.000

KMO= Kaiser-Meyer-Olkin Measure, df= degree of freedom

The results of the above table proved the suitability of sample for factor analysis. The value of Kaiser-Meyer-Olkin (KMO) was found to be significant at .966 ($p< .001$), which validated the adequate sample of analysis. Whereas Bartlett's test value was found to be significant ($p< .001$) (Pallant, 2010).

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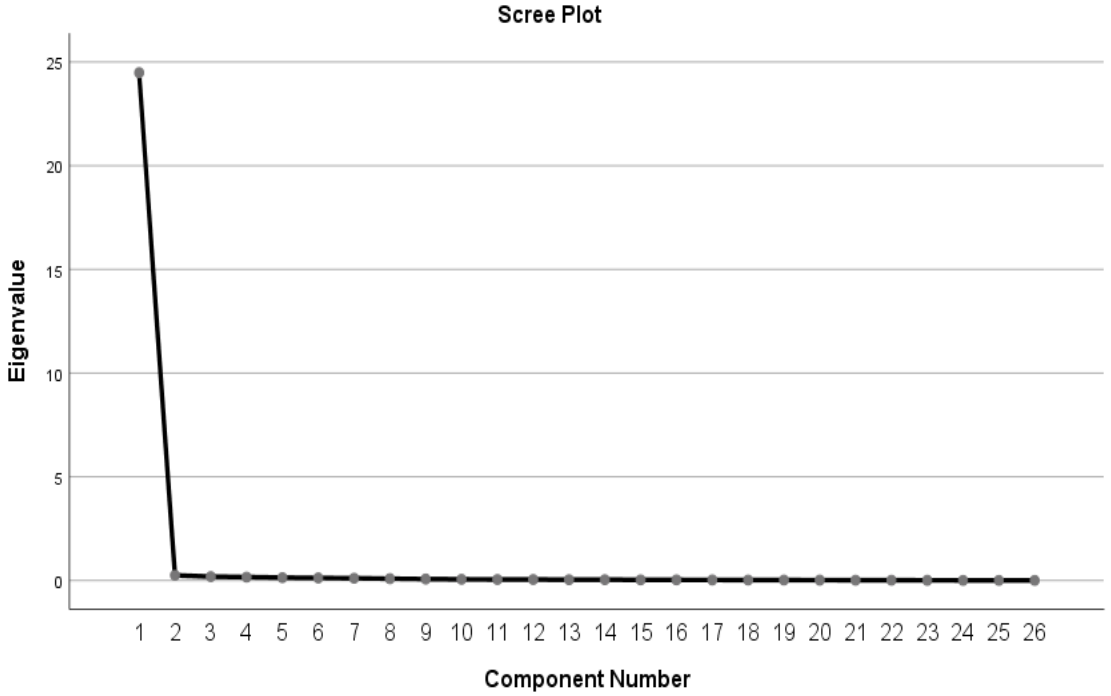
Figure 1



In the figure 1, the y-axis represents the eigenvalues, which indicate the amount of variance explained by each component or factor. The x-axis represents the component or factor number. The first component has a very high eigenvalue (around 25), indicating that it explains a large portion of the variance in the data. As the checklist has a single-factor structure, meaning that all items measure the same underlying construct (Dyslexia). Hence, the scree plot suggests that there are no other underlying factors that are strong enough to be considered distinct from the first factor.

Table 5

Eigen Values, Percentage Variance, and Cumulative percentage of factor

Eigen Value	24.42
	93.93
	93.93
Percentage Variance	
Cumulative percentage of Factor	

The Exploratory Factor Analysis (EFA) of the Forman Dyslexia Symptoms Checklist revealed a robust unidimensional structure. Specifically, one dominant factor was extracted, which accounted for the majority of the variance in the data. This indicates that all checklist items are highly interrelated and collectively measure a single underlying construct associated with dyslexia symptoms. The extraction process converged efficiently, requiring only three iterations to achieve a stable solution. This rapid convergence suggests that the factor structure is clear and well-defined. The high factor loadings across all items further support the one-dimensionality of the checklist, confirming that it effectively captures the primary construct of dyslexia symptoms. These findings validate the reliability and construct validity of the checklist, demonstrating that it is a coherent and comprehensive tool for assessing dyslexia symptoms.

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Table 6

Factor loadings of the Forman Dyslexia Screening Checklist with Varimax Rotation

Item	Factor loading
FDSC1	**0.944**
FDSC2	**0.991**
FDSC3	**0.984**
FDSC4	**0.972**
FDSC5	**0.972**
FDSC6	**0.967**
FDSC7	**0.988**
FDSC8	**0.981**
FDSC9	**0.937**
FDSC10	**0.992**
FDSC11	**0.905**
FDSC12	**0.988**
FDSC13	**0.986**
FDSC14	**0.979**
FDSC15	**0.983**
FDSC16	**0.980**
FDSC17	**0.974**
FDSC18	**0.954**
FDSC19	**0.977**
FDSC20	**0.987**
FDSC21	**0.980**
FDSC22	**0.982**
FDSC23	**0.912**
FDSC24	**0.966**
FDSC26	**0.962**

F= Factor, Factor loading >.30

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Principal Axis Factor Analysis (FA) was examined on items of Development of the Forman Dyslexia Screening Checklist. The value of Kaiser-Meyer-Olkin (KMO) was found to be significant at .966(p <.001), which validated the adequate sample of analysis. The parallel analysis was conducted to have corresponding eigenvalues of each factor. The analysis showed that there was only one factor that had eigenvalues greater than 1, fulfilling Kaiser's criteria. Additionally, the factor retained explained 93.93 of % variance. The varimax rotation was also carried out, and the items were loaded on only one factor. All the items had a value above .30, and hence all items were retained.

Description of Factors

The descriptive labels or names were assigned to each of the factors based on the underlying theme that was presented in the items in those particular factors.

Dyslexia Symptom Profile

The single factor extracted from the Dyslexia Symptoms Checklist was named Dyslexia Symptom Profile. This factor represents the overall severity and presence of dyslexia symptoms as captured by the checklist items. The high internal consistency and the strong loading of each item onto this factor suggest that it is a comprehensive measure of the underlying construct of dyslexia symptoms.

Establishing Divergent Validity

The divergent validity of the Forman Dyslexia Screening Checklist was also established by taking some of the data that was originally collected for EFA. For this purpose, the dataset with an equal number of diagnosed cases was used. This data was taken using an SPSS code. The sample size was 110, among which 55 children were dyslexic, and 55 children were non-dyslexic.

Table 7

Demographic characteristics of the participants (N= 110)

Demographic characteristics	M	SD	Minimum	Maximum
Years of Experience of the Assessor	9.17	3.50	3	18
Number of cases of Dyslexia Dealt by the Assessor	6.81	3.86	2	25
Age of the assessed child	8.37	1.95	4	12
Grade of the assessed child	2.88	1.50	1	5

M= Mean, SD = Standard Deviation

The above table shows the descriptive statistics of the demographics of both children and the assessors.

Table 8

Frequencies and percentages of the demographic characteristics of the participants (N= 110)

Demographic Characteristics		*f*	%
Profession			
	Teacher	88	80.0
	Psychologist	22	20.0
Gender of the Assessed			
	Male	33	30.0
	Female	77	70.0
Socioeconomic Status of the Assessed			
	Upper Class	67	60.9
	Middle Class	23	20.9
	Lower Class	20	18.2
Type of Institute			
	Government	26	23.6
	Semi- Government	12	10.9
	Private	72	65.5
City			
	Lahore	73	66.4
	Muridke	21	19.1
	Sheikhpura	16	14.5
Diagnosis			
	Dyslexia	55	50.0
	No Diagnosis	55	50.0

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Table 8 shows an equal number of participants having a diagnosis of dyslexia (*f* = 50.0%), and no diagnosis *(f* = 50.0%). It also shows that the majority of the assessors were teachers (*f* = 80.0%) as compared to psychologists (*f* = 20.0 %). With the majority of the sample being from females (*f* = 70.0%) and males being lesser in comparison (*f* = 30.0%), Most participants belonged to the upper class (*f* = 60.9%), followed by the middle class (*f* = 20.9%) and lower class (*f* = 18.2%). The majority of participants were from private institutes (*f* = 65.5%), with fewer from government (*f* =23.6%) and semi-government institutes (*f* = 10.9%). The largest proportion of participants was from Lahore (*f* = 66.4%), followed by Muridke (*f* =19.1%) and Sheikhpura (*f* = 14.5%).

Independent Samples t-Test for group differences

Table 9

Independent Samples T-test comparing both groups (dyslexic and non-dyslexic) (N=110)

	Non-Dyslexic (n =55)		Dyslexic (n = 55)				95% CI		
Variables	*M*	*SD*	*M*	*SD*	*t*	*p*	*LL*	*UL*	Cohen's *d*
FSDC	27.32	2.89	75.8	1.97	102.71	.00*	47.59	49.46	19.62

*Mean=M, Standard Deviation = SD, Lower Limit = LL, Upper limit = UL, FDSC= Forman Dyslexia Screening Checklist. *p<.05*

The independent samples t-test indicates that there is a statistically significant difference between the total scores of dyslexic and non-dyslexic groups on the dyslexia symptoms checklist. Dyslexic children have a higher score (M = 75.8, SD = 1.97) as compared to non-dyslexic children (M = 27.32, SD = 2.89). There is a statistically significant difference (p<.05) between dyslexic and non-dyslexic groups in terms of FSDC. The mean score for dyslexic individuals is significantly different than that for non-dyslexic individuals, which supports the divergent validity of the checklist. The large mean difference and narrow confidence interval further reinforce the checklist's ability to discriminate between dyslexic and non-dyslexic individuals.

Discussion

The present study engaged in the onerous task of creating a culturally and linguistically relevant dyslexia screening instrument to the Pakistani educational environment. Such a tool is needed due to the peculiarities of the situation in Pakistan, where the available Western tools might not meet the needs of the students in the country because of the local cultural and linguistic peculiarities of learning (Batool et al., 2024; Maahin et al., 2025).

The chapter explains the findings, implications of those findings, the strengths and weaknesses of the study and gives recommendations on how further research and practice can be achieved. This research demonstrated a high percentage of students with dyslexic symptoms, and it is necessary to develop effective screening and intervention tools. The demographic made it clear that most of the sample was represented by upper and middle socioeconomic classes, which means that awareness and reporting may be greater in this group. Nonetheless, it should be noted that the tool has not been sufficiently investigated with respect to its applicability in different socioeconomic settings (Bakhti et al., 2025).

The Forman Dyslexia Screening Checklist was very reliable and valid. The high value of alpha (0.997) indicates an excellent internal consistency, indicating that the items are well interrelated and call the measure of the underlying construct of dyslexia symptoms in an effective manner. The exploratory factor analysis revealed that the scale has an excellent unidimensional structure, which supported the view that the checklist is a comprehensive measure of symptoms of dyslexia (Scale for Developmental Dyslexia Screening, 2021).

Considerable contributions were made to the development process, both by the local educators and psychologists, making sure that the items were culturally and linguistically relevant. This modification will be critical to the effectiveness of the checklist to detect dyslexia in a multilingual environment, such as in Pakistan. The relevance and applicability of the tool are also guaranteed by the participation of local specialists in the validation process (Batool and Sultan, 2024).

The independent samples t-tests confirmed the validity of the checklist in differentiating dyslexic

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and non-dyslexic individuals, in that the checklist scores of the two groups differed significantly. This observation confirms the effectiveness of the tool in the correct diagnosis of students with dyslexia, which can be an effective way of early diagnosis and treatment (Validation and Reliability of the Dyslexia Adult Checklist, 2024).

The effective construction and testing of Forman Dyslexia Screening Checklist have major implications on the educational sector in Pakistan. Early detection of dyslexia can result in early and specific response to dyslexia, possibly overcoming the detrimental impact of developing dyslexia on the academic performance and socio-emotional growing up of the students. With this tool, educators will be able to design their instruction plans to support students with dyslexia and allow a more inclusive and accommodating learning process (Snowling, 2013; International Dyslexia Association [IDA], 2025).

The study highlights that it is important to change the policy to accommodate dyslexia screening as part of the mainstream education system. The policymakers should think of requiring the use of culturally relevant screening devices such as Forman Dyslexia Screening Checklist at schools. Besides, there should be some modules about dyslexia diagnosis and intervention methods in the training programs of teachers and educational psychologists (Snowling, 2013; International Dyslexia Association [IDA], 2025).

The checklist has been created and tested with a good contribution of the local professionals, making it relevant culturally and linguistically. The research used a high level of statistical procedures to prove the reliability and validity of the tool. The methodology was a mixed-method one, where qualitative data (interviews) were analyzed together with quantitative data (Scale for Developmental Dyslexia Screening, 2021).

The sample of the study was mainly urban and had high socioeconomic status, hence restricting generalization of the results to rural and lower socioeconomic areas. The study is also cross-sectional, and, therefore, it is not possible to determine the long-term effectiveness of the checklist to identify and assist dyslexic students (Bakhti et al., 2025).

Future studies can use larger and more heterogeneous samples, which include rural regions and less affluent populations, to further confirm the application of the checklist in other settings. Longitudinal research is required to determine the long-term effects of early dyslexia detection and treatment with the help of the checklist. This would offer meaningful information on the usefulness of the tool in the long run (Bakhti et al., 2025; Snowling, 2013).

The research about the combination of the checklist with computer-based and mobile applications might improve its accessibility and ease of use in settings that are resource-limited. It is important to develop elaborate training programs for educators and psychologists on how to use the checklist and the subsequent intervention strategies. Teacher education programs and long-term professional development programs should include such programs (International Dyslexia Association [IDA], 2025).

Forman Dyslexia Screening Checklist is a remarkable breakthrough in the preliminary detection of dyslexia in Pakistani educational system. This tool is a valid and accurate way to identify dyslexia as it considers cultural and linguistic peculiarities to take appropriate and efficient actions. This study finds relevance to the wider aim of educational equity which has made sure that every learner, who may have learning complications or not, is accorded a chance to excel both academically and as a person. Further research directions are to make the tool more applicable, introduce it into the educational policies, and ensure constant enhancement of the support systems of students with dyslexia (Snowling, 2013; Batool and Sultan, 2024).

Conclusion

The Forman Dyslexia Screening Checklist represents a significant advancement in the early identification of dyslexia within the Pakistani educational context. By addressing cultural and linguistic nuances, this tool provides a reliable and valid method for detecting dyslexia, enabling timely and effective interventions. The findings of this research contribute to the broader goal of educational equity, ensuring that all students, regardless of their learning challenges, have the opportunity to succeed academically and personally. Future efforts should focus on expanding the tool's applicability, integrating it into educational policies, and continuously improving support systems for students with dyslexia.

Limitations and Suggestions

- The study's sample was predominantly from urban areas and higher socioeconomic backgrounds, which may limit the generalizability of the findings to rural and lower socioeconomic settings.
- The tool's applicability across various socioeconomic backgrounds needs further exploration.
- The cross-sectional nature of the study limits the ability to track the long-term efficacy of the checklist in identifying and supporting students with dyslexia.

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- Future research should involve larger and more diverse samples, including rural areas and lower socioeconomic groups, to further validate the checklist's applicability across different contexts.
- Longitudinal research is needed to assess the long-term impact of early dyslexia identification and intervention using the checklist. This would provide valuable insights into the effectiveness of the tool over time.
- Exploring the integration of the checklist with computer-based and mobile applications could enhance its accessibility and ease of use, especially in resource-constrained settings. Developing comprehensive training programs for educators and psychologists on the use of the checklist and subsequent intervention strategies is crucial. Such programs should be part of teacher education curricula and continuous professional development initiatives.

Implications

The successful development and validation of the Forman Dyslexia Screening Checklist have significant implications for the educational sector in Pakistan. Early identification of dyslexia can lead to timely and targeted interventions, potentially mitigating the adverse effects on students' academic performance and socio-emotional development. Educators equipped with this tool can adapt their teaching methods to better support students with dyslexia, fostering a more inclusive and supportive learning environment. The research underscores the need for policy changes to integrate dyslexia screening into the standard educational framework. Policymakers should consider mandating the use of culturally appropriate screening tools like the Forman Dyslexia Screening Checklist in schools. Additionally, training programs for teachers and educational psychologists should include modules on dyslexia identification and intervention strategies.

The checklist was developed and validated with significant input from local experts, ensuring cultural and linguistic relevance. The study employed rigorous statistical methods to establish the reliability and validity of the tool. A mixed-methods approach was used, combining qualitative insights from interviews with quantitative data analysis, ensuring a culturally adaptive screening tool for early identification of Dyslexia.

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