

PREVALENCE OF DYSLEXIA AMONG UNDERGRADUATE STUDENTS AT BUITEMS

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ABSTRACT

Dyslexia is identified in adults as a reading difficulty who faces phonological issues when reading though they possess the normal intelligence required for correct and fluent reading. Dyslexia is quite common with an incidence rate of approximately 5 to 10 % in adults. Dyslexic adult students struggle in reading and writing, mispronounces words, faces difficulty in remembering dates, names etc. and verbal instruction, poor recall of conversations or events etc. These verbal problems may create issues for them in carrying out their studies and thus their academics will be affected.

Keywords: Phonological deficit; Concentration; Self-esteem; Disruptive behavior; Bangor dyslexia scale.

INTRODUCTION

Dyslexia is defined as a learning disability in reading accompanied with problems faced during spelling, and writing [1]. Dyslexia is quite common with an incidence rate of approximately 5 to 10 % in adults however 17 % percent of normal population have reading challenges though they possess normal visual capabilities and intelligence [2, 3]. On the other hand, prevalence rate of dyslexia is high among school children who requires specialized tutoring or education systems to cope up with the challenges they face during reading [4]. Thus there is no cure for it but early assessment of dyslexia might help to reduce its consequences in adulthood [5]. Besides socio cultural factors, defects in genes that are involved in reading and language processing are responsible for causing dyslexia [6]. However, it is still vague whether these

genes alter the brain structure or hinders with its information processing capabilities [7]. Research studies revealed that the left hemisphere of the brain that is associated with processing words is affected in dyslexic adults as a result such individuals faces trouble segmenting words into smaller parts [8]. Such a condition in dyslexic adult is termed as phonological deficit [9]. As a consequence of being phonological deficit, a dyslexic adult struggles in reading and writing, mispronounces words without realizing it, difficulty remembering dates, names etc. and verbal instruction, poor recall of conversations or events etc. [10, 11]. This troubles them from the efforts involved in written work and routine organization, and allows them to be easily distracted on their work [12, 13]. Thus, identification of dyslexia and its contributing factors is potent in adults specially the ones engaged in studies in order to cope up with verbal and phonological issues.

Therefore, the aim of our study is to find the prevalence rate of dyslexia among undergraduates and also to identify those factors responsible for causing this linguistic problem.

METHODOLOGY

Male and female participants were selected at random from different departments with their informed consent. Sample size was kept 100. This study was a cross sectional study conducted among the undergraduate students studying at BUIITEMS, Quetta, Pakistan.

This analytical study was conducted with the help of a clinically recognized Dyslexia Rating scale also known as the Bangor dyslexia scale (BDS) [14] which is a 25-item instrument, commonly used to assess / diagnose adults for dyslexia.

Dyslexia Rating Scale has 6 subscales

1. Factor 1: Understanding (Difficulty understanding reading, listening, interpreting, filling etc.)
2. Factor 2: Memory (Difficulty remembering information from listening, reading, names etc.)
3. Factor 3: Use of Language (Difficulty summarizing or learning other languages, struggles when describing, slow with mathematical calculations etc.)

- 4. Factor 4: Concentration (Short concentration, daydreams, poor natural awareness of surroundings etc.)
- 5. Factor 5: Knowledge and Learning (Poor general knowledge, finds academic learning difficult etc.)
- 6. Factor 6: Behavior (Lacking confidence and low self-esteem, dislikes reading, interest in nonacademic areas, loses temper, disruptive etc.)

BDS -25 items were rated using a 5-point Likert scale whereby 0 = not at all or very slightly and 4 =very much. The total dyslexia score is the sum of 25 questions associated with dyslexia, while the score for each subscale factor is the sum of the responses to that subscale.

Dyslexia Rating Scale cutoff scoring

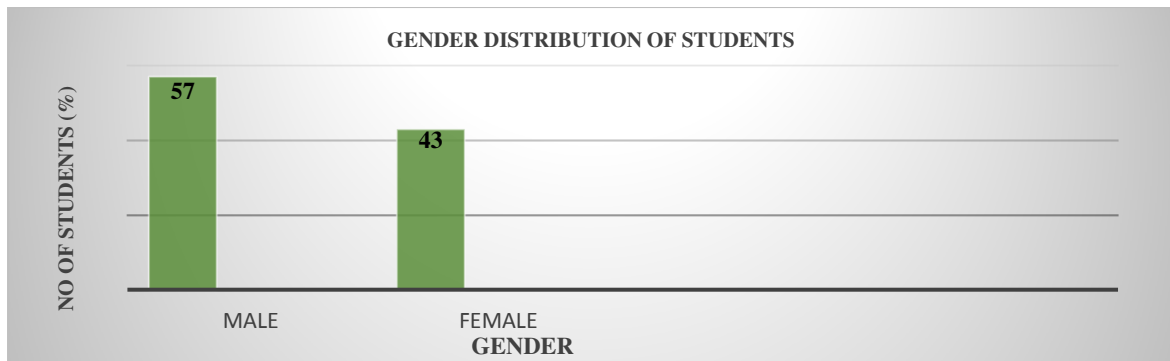
- Equal to or greater than 98 = non-dyslexic
- Between 97 to 77=possible dyslexic
- Less than 76 = dyslexic

RESULTS

Out of 100 students, 43% were females while 57 % were males as shown in Table 1 and Graph 1

Table 1: Sex distribution of selected students

S.no	Gender	No of students (%) (n=100)
1	Male	57
2	Female	43

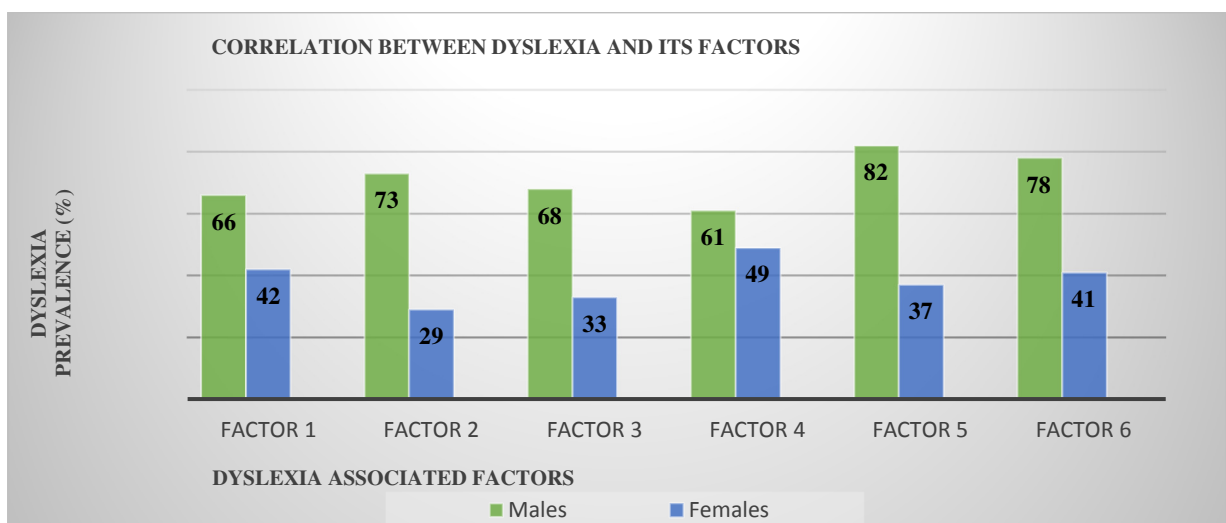


Graph 1: Gender distribution of selected students

Table 2 and Graph 2 reveals the correlation between dyslexia and its six dimensions in both the genders.

Table 2: Correlation between dyslexia and its six dimensions in both the genders

S.no	Variables	Male (n=57) (%)	Females (n=43) (%)
1	Factor 1	66	42
2	Factor 2	73	29
3	Factor 3	68	33
4	Factor 4	61	49
5	Factor 5	82	37
6	Factor 6	78	41

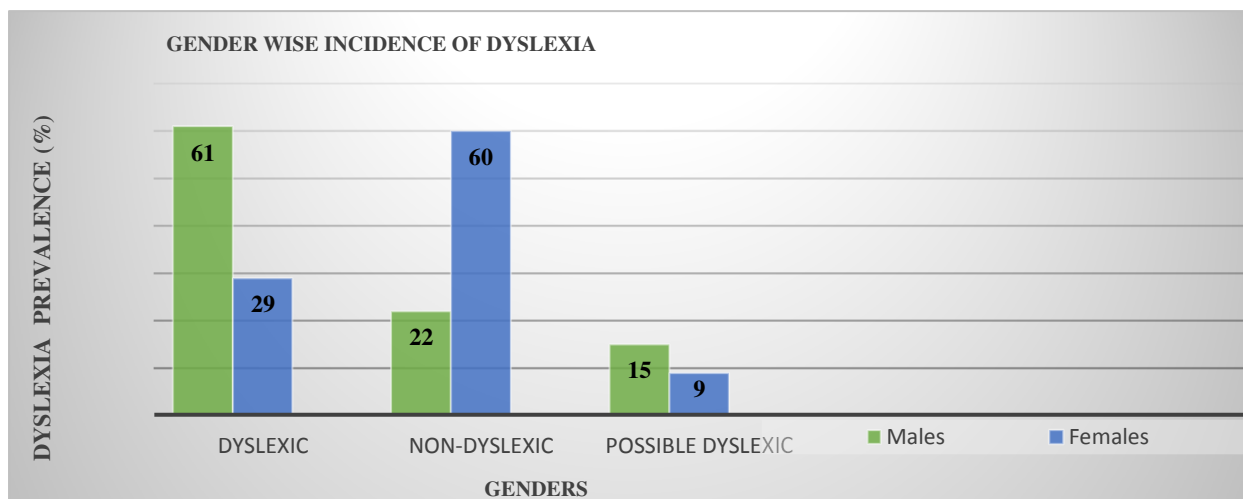


Graph 2: Correlation between dyslexia and its six dimensions in both the gender

Table 3 and Graph 3 reveals the gender wise incidence of dyslexia

Table 3: Gender wise incidence of Dyslexia

Prevalence	Male (n=57) (%)	Female (n=43) (%)
Dyslexic (≤ 76)	61	29
Non-Dyslexic (≥ 98)	22	60
Possible Dyslexic (97 to 77)	15	9

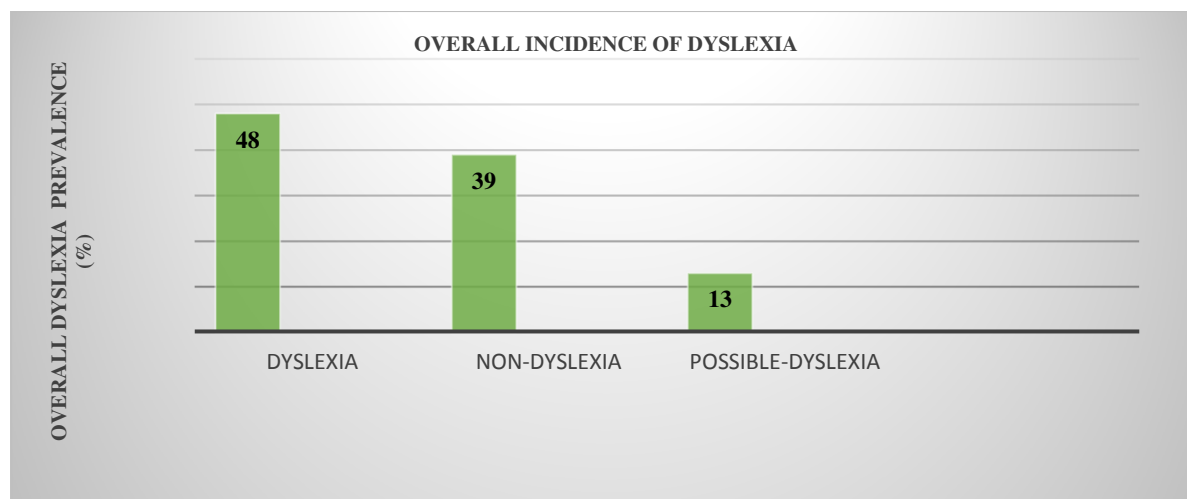


Graph 3: Gender wise incidence of Dyslexia

Table 4 and Graph 4 reveals the overall prevalence of Dyslexia

Table 4: Overall incidence of Dyslexia

Prevalence	n=100 (%)
Dyslexia	48
Non- Dyslexia	39
Possible- Dyslexia	13



Graph 4: Over all incidence of Dyslexia

DISCUSSION

Our studies revealed that incidence rate of dyslexia is high as depicted in Graph 4 that out of 100 undergraduates 48% were identified as dyslexic however only 13% of undergraduates were identified as possible dyslexic. Recent epidemiologic data indicates that dyslexia is a persistent, chronic condition that stays with the adult his or her entire life as similar findings were depicted in our research indicating a large proportion of adult undergraduates being dyslexic [15, 16]. Our results also suggested that dyslexia is more prevalent in males than in females as 61% of undergraduate males were dyslexic and only a small proportion of females 29% were suffering from dyslexia (Graph 3). The reason for this high prevalence in males is due to the fact that undergraduate males are deficit at the level of the phonologic module which impairs their ability to segment the written word into its underlying phonologic elements as depicted in Graph 2 that the factors 1 and 3 that were related with difficulty in decoding words were found to be 66% and 68 % in males respectively [17, 18]. However, prevalence of these factors was found to be low in female undergraduates i.e. 42% and 33% respectively indicating low level of difficulties in reading probably at the level of phonologic processing [19]. In addition to that self-esteem of the affected undergraduate males is low particularly if the disorder has gone undetected for a longer period of time (Graph 2). Besides distributed attention (factor 4) was more prevalent in males (61%) than in females (49%) (Graph 2) suggesting that the signs of attention deficits in dyslexia depend on the gender of the subjects [20].

Thus, dyslexia category is specific to a literate culture as most of the affected undergraduates were engaged in academics. There would not have a disability if they were not required to read. Therefore, specific verbal training or tutoring might help these dyslexic adults to improve their reading skills [21]. In addition finding different approaches to learn and remember information might aid in reducing dyslexia associated symptoms such as difficulty in remembering and memorizing [22].

CONCLUSION

Our studies revealed that dyslexia prevalent in adults as out of 100 undergraduates 48% were identified as dyslexic indicating a high prevalence rate, representing one of the most common problems affecting adults.

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