

Co-Morbid Disorders among Post-Secondary Vocational Education Students with Attention Deficit Hyperactivity Disorder

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7th SAARC Psychiatric Federation International Conference, Mysore, 29
Nov. 1st Dec, 2013, J.S.S Medical College, Mysore, India.

Introduction

- ❖ Attention Deficit Hyperactivity Disorder is **one of the major developmental disorders of childhood and is a common neurobiological condition affecting school age children.** Numerous studies have confirmed that the disorder is prevalent worldwide.
- ❖ Children with Hyperactivity are the most common **psychological referrals to mental health and pediatric facilities.**
- ❖ This disorder can continue through **adolescence and adulthood.**
- ❖ **Three subtypes** of the syndrome are delineated among ADHD-**predominantly inattentive, hyperactive and combined type**

Prevalence of ADHD

- ❖ Goldman and associates (1998): ADHD is usually thought to occur in **3-5 percent** of school age children.
- ❖ Ramaa, Ashok and Balachandra (1997) noticed a low incidence -**0.21 percent of urban children and 0.89** percent of rural primary school children suffered from ADHD.
- ❖ Nelson (2002): **5.25 %** of ADHD among elementary school children.
- ❖ Deena Bhushani (2013): **11.36%** among Secondary school students .

ADHD during Adolescence and Later

- ❖ Hinshaw, Zupan & associates (1997) reported that the frequency of occurrence of ADHD is greatest before the age of eight and tends to become less frequent and rare thereafter.
- ❖ Even without treatment, hyperactive behavior tends to diminish by the time some of the children reach their middle teens. However considerable percentage of children with ADHD continue to have symptoms as they enter adolescence.
- ❖ Odell, Warren et al., (1997) have noticed that some residual effects, such as attention difficulties, may persist even during adolescence or adulthood.

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- ❖ Interestingly some children are not diagnosed with ADHD until they reach adolescence.
- ❖ This is more common among children with **predominantly inattentive symptoms** because they are not necessarily disruptive at home or in school.
- ❖ In these children, **the disorder becomes more apparent as academic demands increase and responsibilities mount.**

Effect of Hyperactivity on the Adjustment of Individuals

- ❖ The researches on Young adults who had been hyperactive children reveal the following characteristics among them:
 - Had **less education** than controls.
 - Had a history of more **auto accidents and more geographical moves**.
 - Only a minority of the formerly hyperactive subjects continued to have their **antisocial behavior into adulthood or developed psychopathologies**.
 - Major depressive disorder seems to be relatively rare among ADHD patients (Alpert Maddocks and associates 1996); however other psychological problems such as **overly aggressive behavior or substance abuse are common**.

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- ❖ About 25 percent **never completed high school, compared** with 2 percent for controls (Mannuzza and associates, 1993),
- ❖ A significant percentage of adolescents do **retain their problems into later life.**

Co-morbid Conditions of ADHD - Important observations in Research Studies:

- ❖ Understanding of the Co-morbid Conditions of ADHD evolved during 1980.
- ❖ School-age children in all countries suffer from Comorbid Conditions of ADHD. (Biederman, 2001).
- ❖ Many conditions exist concurrently with ADHD, and **each modify the overall clinical presentation and treatment response**. Comorbid conditions should be considered simultaneously in order to broaden our understanding and maximize treatment. (Faraone, 2001)
- ❖ The risk for comorbidity with other psychiatric disorders is high among ADHD. The presence of comorbid disorders **warrants special consideration** in the treatment of patients with this disorder. (Fredman, 2001)
- ❖ About **70%** of children referred for either **severe or mild depression were found to have comorbid ADHD**. Younger the age of onset of depression, the higher the prevalence of ADHD in the children. (Biederman, 1995).

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- ❖ The presence of an underlying or co-occurring mood disorder may complicate the treatment of ADHD. Sufficient attention to and proper treatment of the mood disorder is imperative (Spencer, 2001).
- ❖ Long-term follow-up studies have demonstrated that individuals with **ADHD and comorbid disorders have poorer prognoses** and greater hospitalization rates than those with ADHD alone.
- ❖ There is often a persistence of ADHD and/or the comorbid conditions for the duration of the several years of follow-up period (Milberger, 1995).
- ❖ **The children with comorbid disorders manifested high rates of a variety of disorders including bipolar disorder and anxiety disorder (Biederman, 1996).**

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- ❖ **Untreated ADHD is also associated with higher rates of alcohol use at 15-year follow-up.** Although ADHD and substance abuse are highly comorbid among adults, treatment of ADHD in children or adolescents may actually offer protection against later substance abuse (Biederman, 1999).
- ❖ The rates of ADHD among the relatives of children with ADHD with or without depression were significantly higher than among relatives of control children. **For some children, the same gene may contribute to ADHD, whereas in others it could contribute to depression or the co-occurrence of both disorders (Biederman, 1992).**

Contd....

- ❖ The comorbidity of ADHD with other disorders is between 60% and 80%. Research has shown that depression, anxiety disorders are present in 1/4 of all children with ADHD.
- ❖ The high comorbidity rate between ADHD and other disorders has essentially created confusion regarding the definition of a "true" ADHD diagnosis.
- ❖ Since most children or adults with ADHD also have a second diagnosis, and both sets of symptoms frequently overlap, **critics suggest that the nuances of ADHD have not been adequately described.** Establishing an accurate ADHD diagnosis is very important (Austin, 2007).

Significance of the Present Study

- ❖ Research studies and clinical experiences have shown that ADHD can be seen even among adolescents as well as adults.
- ❖ Further it was noticed that many individuals with ADHD have some co-morbid disorders also.
- ❖ However, most of the studies attempted to identify the co-morbid disorders among children with ADHD. **Only a few studies focused on adolescents and adults.**
- ❖ **Hence there is a need to have continued research in this area to confirm the findings at different stages of development.**
- ❖ The studies also tried to diagnose co-morbid psychological disorders of ADHD, **but not attempted to find out the co-morbid physical health problems.**
- ❖ Further, in the previous studies co-morbid disorders were **not studied and compared among the sub types of ADHD.**

Aims and Objectives

- ❖ The study aimed at achieving the following objectives.
 - To identify the students with ADHD from among the selected schools and colleges offering Post –Secondary Vocational Education Courses in Mysore City, Karnataka India.
 - To classify the students with ADHD into different categories based on DSM-IV-TR & ICD – 10 guidelines.
 - To identify the co-morbid disorders/disabilities/problems in the case of students with different types of ADHD, Male and Female Students and Students studying in Diploma and ITI Courses.

Methodology

❖ **Sample:**

- ❖ A multi-stage, purposive sampling technique was adopted in the study.
- ❖ The sample size varied for different objectives.
- ❖ To identify the students with ADHD, **Four Post Secondary** Diploma colleges and Two Industrial Training Institutes (ITI) in Mysore city were selected.
- ❖ There were 340 Diploma and 75 ITI students in all those colleges, with a total of 415 students

❖ **Assessment Instruments:**

- ❖ After a brief orientation about ADHD a **Check List for Attention deficit hyperactivity disorder**, developed by the Investigator based on *DSM-IVTR* and *ICD-10* was administered to all the **415** students.
- ❖ Based on the responses, **107** students were suspected to have Attention deficit hyperactivity disorder.

- ❖ In order to confirm the diagnosis among these 107 students, a Self Rating Scale was administered to them.
- ❖ It consists of 19 items, which includes the symptoms of the three sub -types of ADHD, namely,
 - ❖ Primarily Inattentive subtype,
 - ❖ Primarily Hyperactive/Impulsive, and
 - ❖ Combined Sub-types.
- ❖ The subjects were expected to select from the options (Most frequently/ frequently /often/ sometimes/ Never) depending upon the frequency of the symptoms experienced by them.

- ❖ Based on the ratings, the students who exhibited a greater frequency (most frequent / frequent) in at least six symptoms were considered to have ADHD.
- ❖ There were 39 such students. They constituted the sample for further study.
- ❖ For those 39 students
- ❖ a Checklist for Identifying Learning, Emotional and Behavioral Problems (Ramaa,, Ashok and Balachandra, 1997), and
- ❖ a Checklist for Identifying Physical Health Problems (Ramaa, Ashok and Balachandra, 1997)
- ❖ were administered to identify the co-morbid disorders.

- ❖ In the study **9.40 %** of the students of post-secondary education courses exhibited **ADHD**. Bhushini (2013) also noticed a prevalence of **9.17 %** among Grade X students

- ❖ The 39 Students with ADHD were classified into three subtypes based on the **frequency of symptoms** exhibited by them.
 - ❑ **Combined Subtype of AD/HD - 23 (58.9%)**
 - ❑ **Primarily Hyperactive/Impulsive Subtype (HD) - 9 (23.1%)** and
 - ❑ **Primarily Inattentive Subtype (ADD) - 7 (17.9%)**

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- This shows that the prevalence of **combined type is considerably more** than other types. Similar findings were noticed by Barkley (2006); Wilens et al., (2002); Bhushini (2013).
- The full attention-deficit disorder persisted in 31 percent of the hyperactive boys (Gittleman and colleagues, 1985).

- ❖ There were **4 female students and 35** male students; the ratio between them is **1: 8.7**. This is similar to the report by **(DSM-IV)** that ADHD occurs most frequently among preadolescent boys and is **6 to 9** times more prevalent among boys than girls. **Ross and Ross (1976)** also reported sex ratios ranging from **5:1 to 9:1**.

- Out of those 39 Students with ADHD, **48.72%** students had reported the symptoms of co-morbid disorders. **This is slightly lower compared to the observation made by Austin. M (2007), that comorbidity of ADHD with other disorders is between 60% and 80%.**

Fig- 1: Percentage of Students with Sub-types of ADHD Exhibiting Co-morbid Disorders

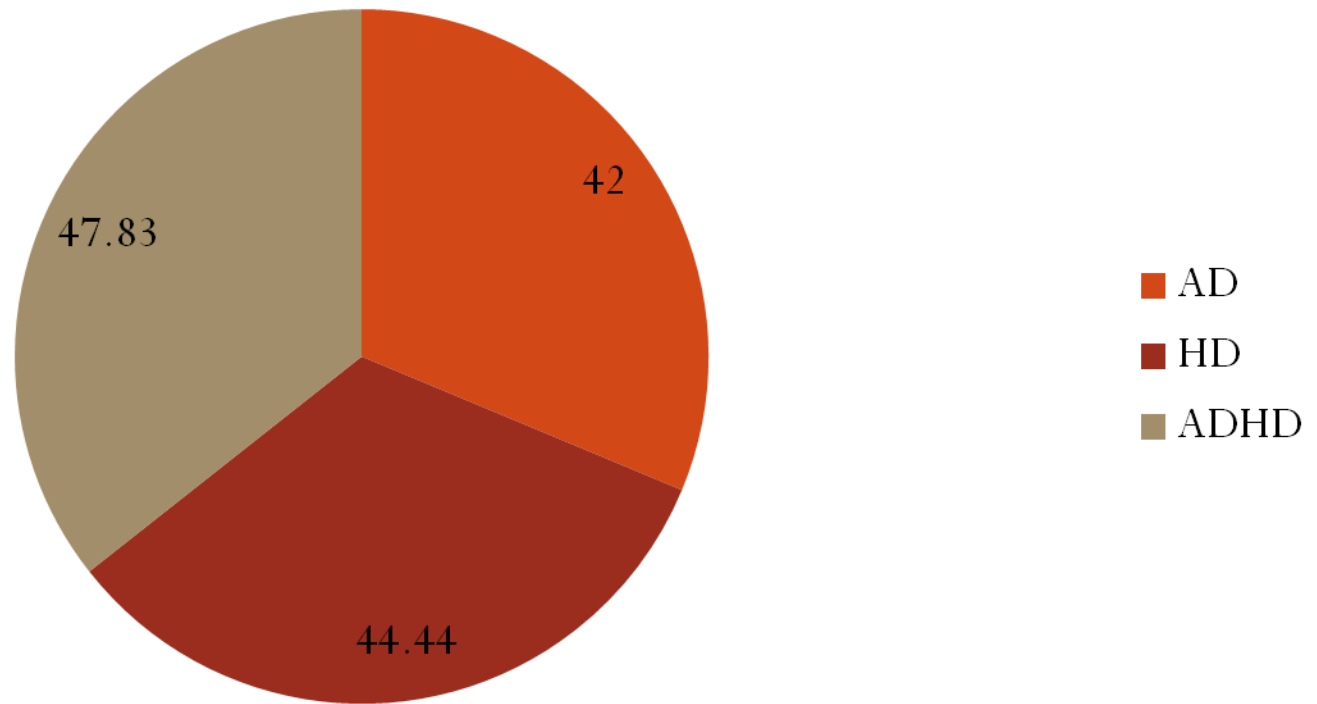
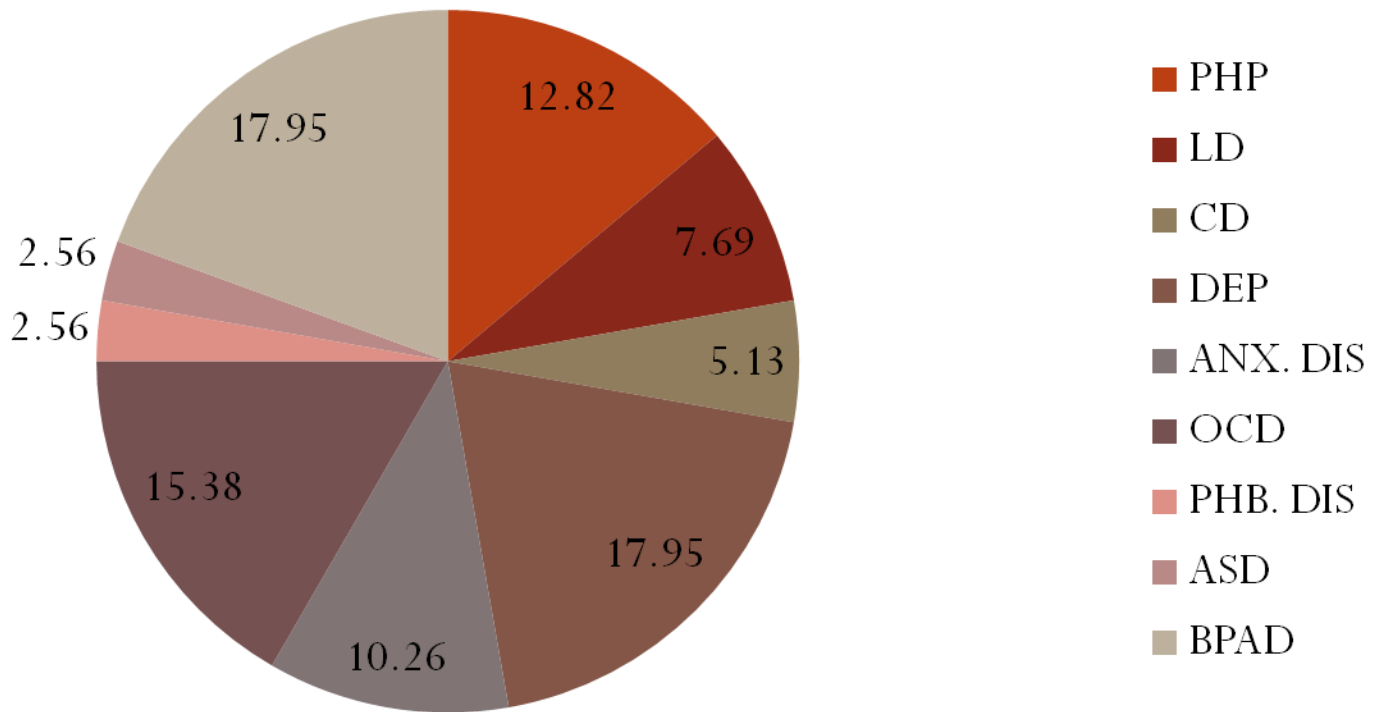


Fig- 2: Percentage of students with ADHD (N= 39) exhibiting different Comorbid Disorders



- Among the subjects with ADHD **depression and BPAD are more common** compared to other types of co-morbid disorders. **Biederman, (1996)** also noticed that the ADHD children with comorbid disorders manifested **high rates of a variety of disorders including bipolar disorder and anxiety disorder**. The presence of an underlying or **co-occurring mood disorder may complicate the treatment of ADHD**. Sufficient attention to and proper treatment of the mood disorder is imperative (Spencer, 2001).
 - *Research has shown that depression, anxiety disorders are present in 1 / 4 of all children with ADHD (Austin. M .2007)*

Fig- 3: Percentage of Students with Sub-types of ADHD Exhibiting Different Comorbid Disorders

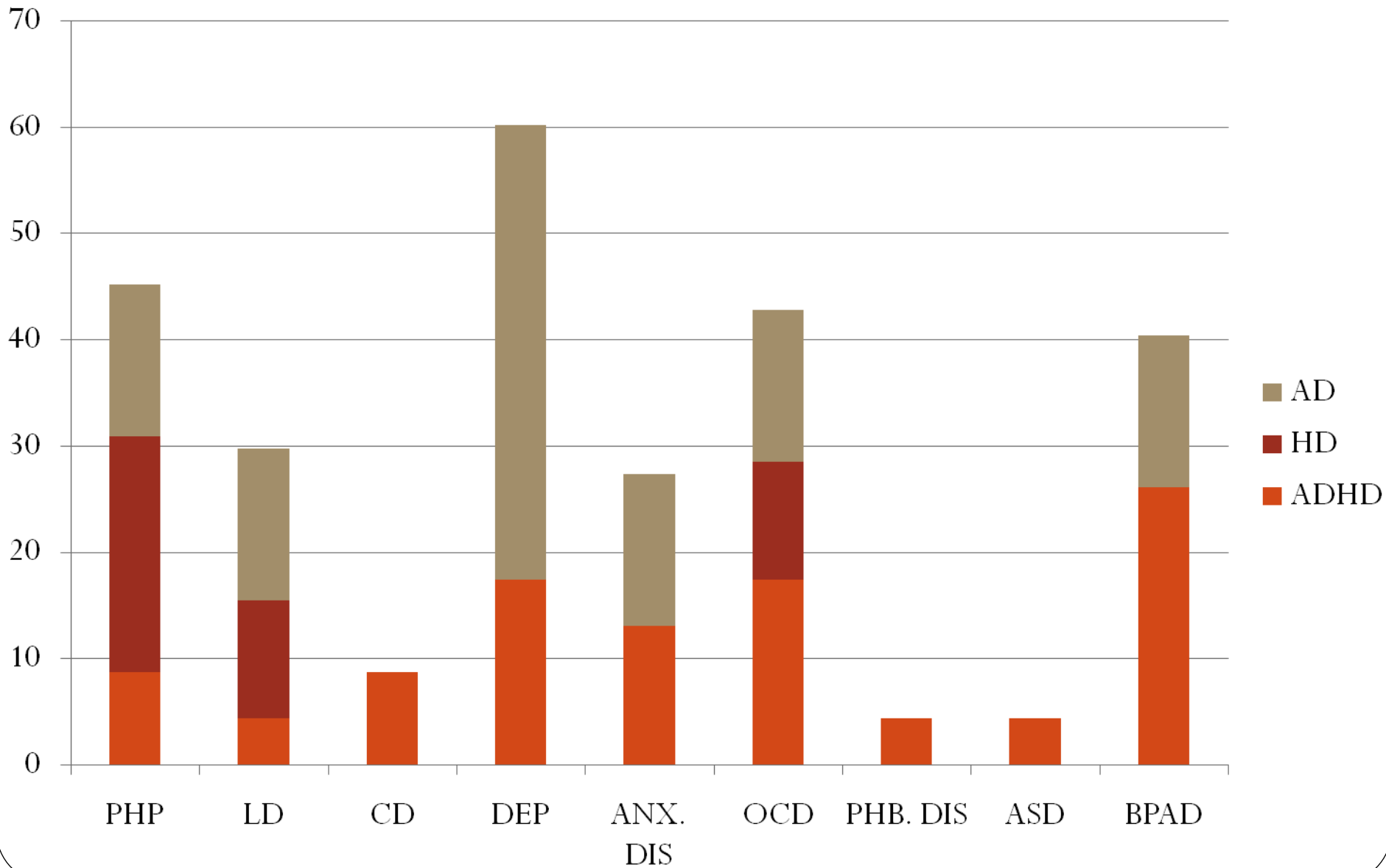


Fig- 4: Percentage of Male and Female Students with ADHD Exhibiting Different Comorbid Disorders

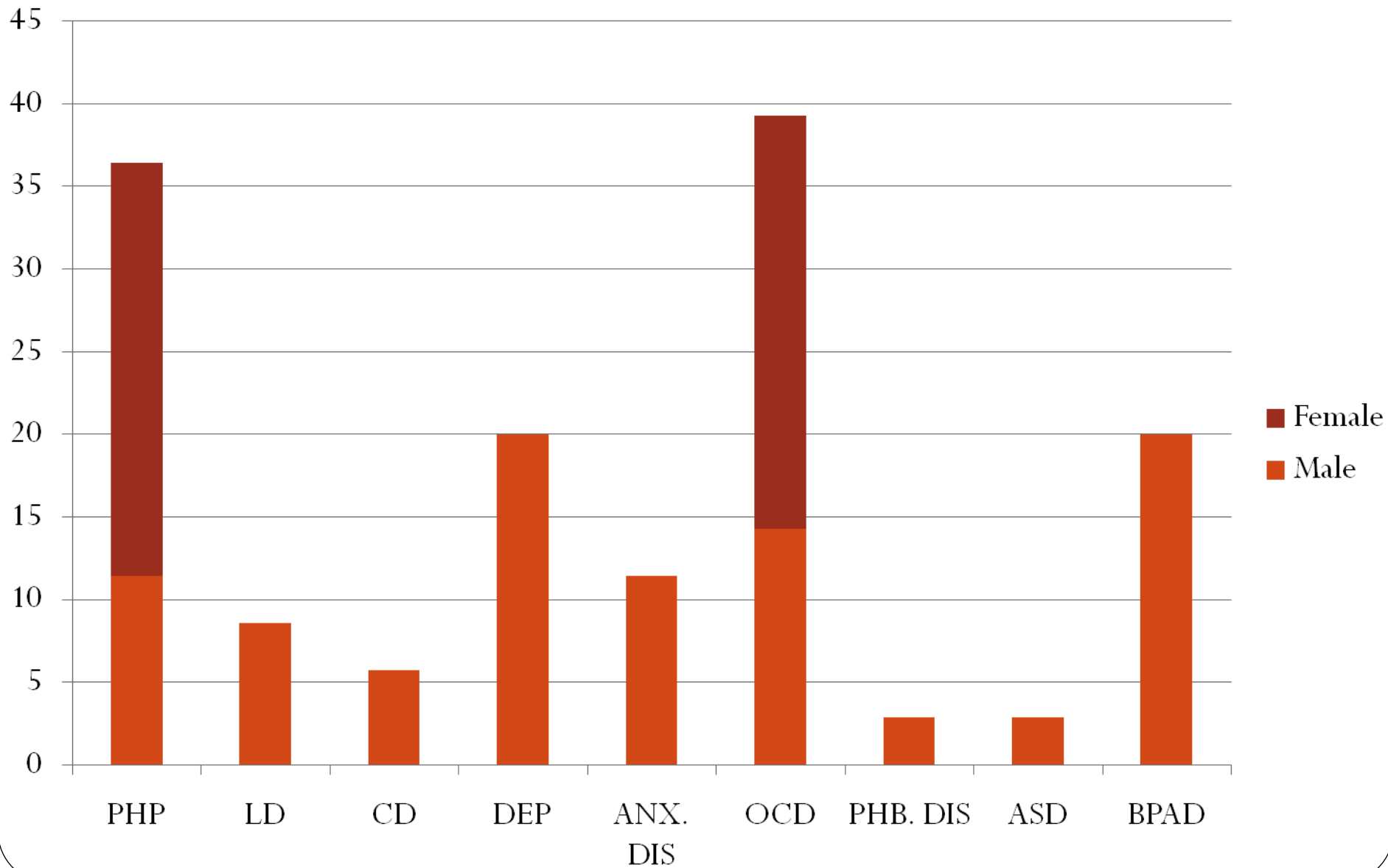


Fig- 5: Percentage of Diploma and I.T.I Students with ADHD Exhibiting Different Comorbid Disorders

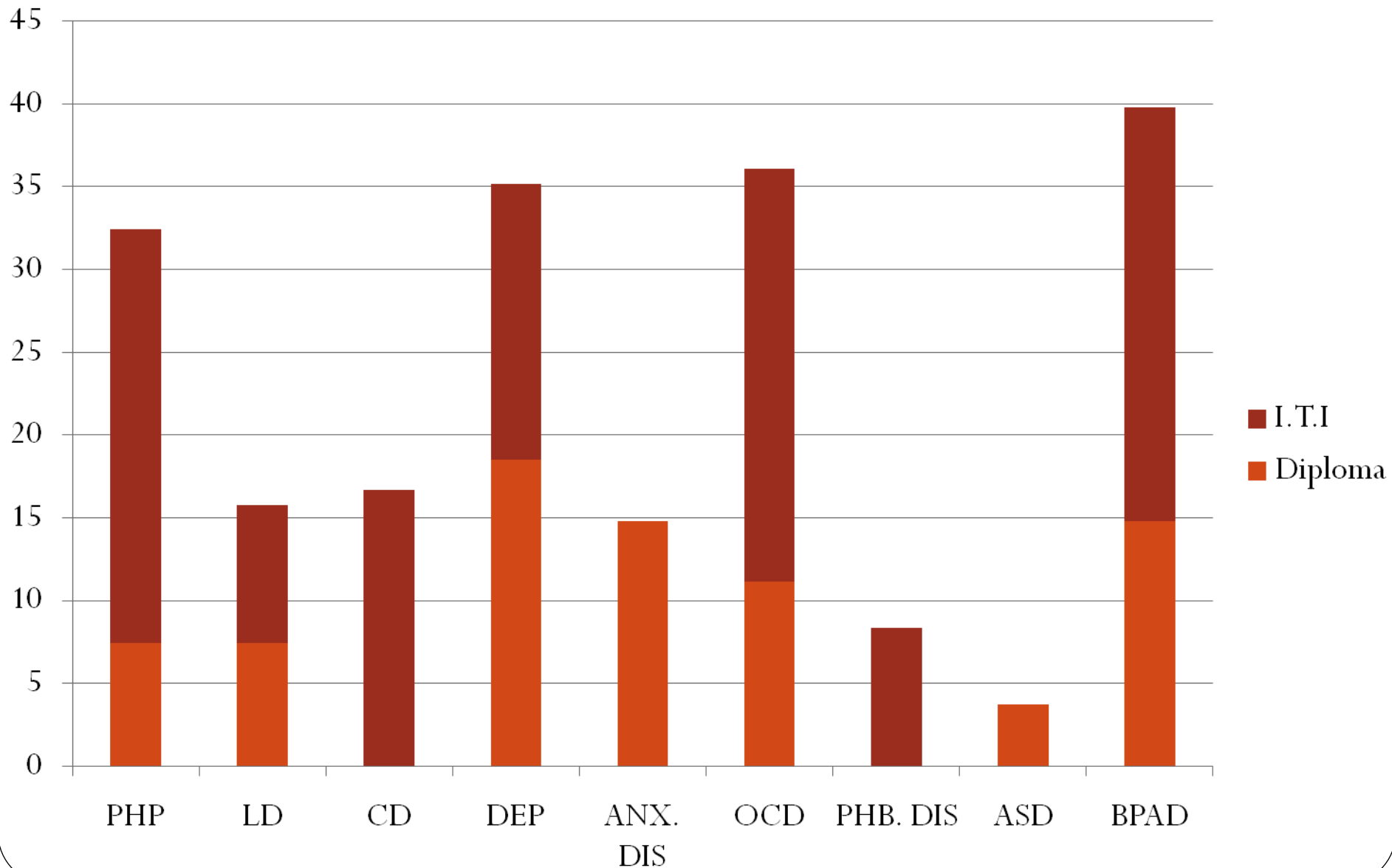


Table No- 1: Comorbid Disorders Exhibited by Students with Combined Subtype of AD/HD (N=23)

Cases	Comorbid Disorders Exhibited
1	Bipolar disorder
2	Anxiety Disorder
3	ASD
4	Bipolar disorder
5	CD and Bipolar disorder
6	OCD
7	OCD
8	Depression
9	CD and Bipolar disorder
10	Depression, Anxiety Disorder and OCD
11	Physical Health Problems, LD, Depression, OCD, Phobic Disorder and Bipolar disorder
12	Physical Health Problems, Depression, Anxiety Disorder and Bipolar disorder

Table No- 2 & 3: Comorbid Disorders Exhibited

	SI No.	Comorbid Disorders Exhibited
HD (9)	1	LD
	2	Physical Health Problems
	3	OCD
	4	Physical Health Problems

ADD (7)	SI No	Comorbid Disorders Exhibited
	.	
	1	Depression
	2	LD, Depression, Anxiety Disorder, OCD and Bipolar disorder
	3	Physical Health Problems and Depression

- The findings of the study supports that of Strober M (1982)that **when compared to the children with ADHD without mania, the manic children** had significantly higher rates of major depression, psychosis, multiple anxiety disorders, conduct disorder, and oppositional defiant disorder as well as significantly greater impairment in psychosocial functioning.
- It was planned to conduct further investigation to verify their symptoms. However only 5 students with some physical and psychological problems cooperated for that. The rest did not turn up for that, despite continued efforts due to various reasons. **Those 5 subjects were referred to a physician and a psychiatrist working in Apollo BGS Hospital, Mysore for diagnosis and treatment.**

❖ Physical problems exhibited by Five cases were –

➤ Backache, Breathing problem, Chest pain, Headache, tiredness, Joints pain, Stomachache. Hearing problem and pain in the ear.

❖ They also exhibited comorbid disorders-

➤ Psychological problems such as Depression, Tension, anxiety, Low concentration, Less Memory OCD, bipolar disorders

❖ Consultation with the Physician and the Psychiatrist confirmed the presence of certain physical problems and psychological disorders as co-morbid disorders of ADHD among the five participants referred.

❖ Treatment strategies were recommended by the Doctors. However, the investigator did not get any feed back from those subjects regarding the follow up action taken by them.

❖ Since other subjects of the study did not cooperate for further investigation, in the study, the co-morbid disorders were identified only on the basis of self reporting of the symptoms except in Five cases.

Conclusions

- ❖ In future studies, there is a need to ensure the confirmation of the presence of different co-morbid disorders with the help of a **multi-disciplinary team**.
- ❖ Postsecondary counselors and clinicians should routinely **screen students for ADHD symptomatology** (Frazier & et al., 2007).
- ❖ For all teens, these years are challenging. But for teens with ADHD, these years may be especially difficult. A professional counselor or therapist can help ADHD. *The Institutes should have counselors.*



Thank you

