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RESEARCH ARTICLE

ADULT ADHD, SELF-EFFICACY, AND ACADEMIC PERFORMANCE IN LANGUAGE LEARNING: THE CASE OF FRESHMEN IN THE FACULTY OF ARTS AND HUMANITIES

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Abstract

The prevalence of ADHD in Morocco is still unknown. The paper sought to determine the extent to which this disorder may be prevalent in university students along with whether it would differ significantly among males and females. It also aimed to identify whether there would be a significant difference in both academic performance and self-efficacy among the ADHD and non-ADHD group. Three questionnaires were used to achieve this purpose. Cronbach's alpha was run followed by a chi-square test for independence and two independent-samples t-tests. There was no significant association between gender and ADHD symptoms ($p = .12$). In addition, there was no significant difference in academic performance ($p = .39$) and in self-efficacy scores ($p = .46$) for the ADHD and non-ADHD students. The study emphasized on the importance of a formal ADHD diagnosis as it could have provided insightful findings.

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Introduction:-

Attention-Deficit/Hyperactivity Disorder (ADHD)

Attention-deficit/hyperactivity disorder (ADHD) is classified as a neurodevelopmental disorder characterized by impairments due to inattention, disorganization, and/or hyperactivity-impulsivity (American Psychiatric Association, 2013, p. 32). According to Simonescu et al. (2012), ADHD was traced back to 1902 in the works of a British pediatrician named George Frederick Still. They declared that over the decades, a number of labels were used to refer to the disorder, including "... 'minimal brain dysfunction,' 'hyperkinetic impulse disorder,' attention deficit disorder (ADD) with or without hyperactivity, and finally, in 1987, attention deficit/hyperactivity disorder (ADHD)" (p. 218).

Brown (2013), on his part, also confirmed this point as he argued that during a long period, two terms were used to refer to the disorder; Attention Deficit Disorder (ADD) being concerned with the problems of attention while Attention Deficit Hyperactivity Disorder (ADHD) was concerned with the problems of attention along with those of hyperactivity/impulsivity (Brown, 2013). However, in his book and recent works also, the term ADHD referred to Attention Deficit Disorder with and without hyperactivity. According to the fifth edition of the Diagnostic and Statistical Manual of mental disorders, the disorder has been officially renamed as 'attention-deficit/hyperactivity disorder or ADHD for short regardless of whether the symptoms of hyperactivity are present or not (CHADD, 2017). This explains why most resources found about the disorder, especially recent ones, mainly used the acronym ADHD.

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Furthermore, Brown (2013) attested that ADHD has long been seen, precisely for over 100 years, as a behavioral disorder, but a new model was developed which changed this view as it identified the latter as “a developmental disorder of the cognitive management system of the brain, its executive functions”. Executive functions (EF), in accordance with the general agreement reached by most researchers, are defined as “the functions of brain circuits that prioritize, integrate and regulate other cognitive functions” (Brown, 2013, chap. 2). They, according to Simonescu et al. (2012), include “the ability to formulate goals, to focus and sustain attention, to inhibit impulsive responses, to generate effective and efficient problem solving, organizational, and learning strategies, and to monitor and correct one’s performance when necessary (e.g., self-regulation)” (p. 218).

The American Psychiatric Association (2013) reported a number of impairments or hindrances that individuals with ADHD have to deal with. Those stimulated from inattention and disorganization exhibit symptoms such as “inability to stay on task, seeming not to listen, and losing materials, ...” while those stimulated from hyperactivity/impulsivity demonstrate “overactivity, fidgeting, inability to stay seated, intruding into other people’s activities, and inability to wait” (American Psychiatric Association, 2013, p. 32). More specifically, additional behaviors present themselves in each presentation. For instance, according to American Psychiatric Association (2013), inattention is recognized in behaviors like “wandering off task, lacking persistence, having difficulty sustaining focus, and being disorganized and is not due to defiance or lack of comprehension” (p. 61). In terms of hyperactivity in adults, it is manifested in “extreme restlessness or wearing others out with their activity” while behaviors like “social intrusiveness (e.g., interrupting others excessively) and/or as making important decisions without consideration of long-term consequences (e.g., taking a job without adequate information)” marked impulsivity (p. 61).

Sedgwick-Müller et al. (2022) stated that this disorder “begins in childhood and frequently persists into adulthood” (p. 2). In a 10-year longitudinal follow-up study of 110 boys with ADHD and 105 without ADHD that is worth mentioning, Biederman et al. (2010) found the symptoms of ADHD persisting in early adulthood along with functional impairments instead of dissipating. For them, the aim was to show that it is a lifelong disorder. ADHD in children is beyond the scope of this article since its interest is focalized on adult ADHD.

Lovett and Harrison (2021) claimed that the idea of adult ADHD flourished in the 1990s. It is worth mentioning that the diagnosis process for adults is more complex and challenging than that of children (Simonescu et al., 2012; Lovett & Harrison, 2021). According to CHADD (2017), ADHD diagnosis cannot take place with a single test. They argued that “a comprehensive evaluation is necessary to establish a diagnosis, rule out other causes, and determine the presence or absence of co-existing conditions” (p. 4). Consequently, difficulty to diagnose ADHD presents challenges to educators. Unfortunately, even if awareness is raised among them about ADHD, by the end of the day, they can only be knowledgeable of it without being able to make any kind of alterations in their teaching or classroom management because they simply do not have the means that will allow them to determine the presence of this disorder in their students. It is not mainly about the means, it has actually been reported that the diagnosis of this disorder should be performed or deduced by professionals, namely clinical psychologists, clinical social workers, nurse practitioners, neurologists, psychiatrists and pediatricians (CHADD, 2017). This is due to the fact that students may report symptoms of ADHD, but may not actually have ADHD as there are many biological and psychological problems that share the same symptoms of the latter like anxiety, depression, and some learning disabilities, and this, as a result, complicates things (CHADD, 2017, p. 4).

The diagnostic criteria set by DSM-V (or DSM-5), American Psychiatric Association’s (APA) latest edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), for inattention and hyperactivity/impulsivity were that at least five symptoms must be present for older adolescents and adults (age 17 and older). It is important to keep in mind that this is just one criterion. In order for the diagnostic process to be complete, the following criteria also need to be met including: the need 1) to identify whether several symptoms, either inattention or hyperactivity/impulsivity, were present before the age of 12, 2) to mark the presence of these symptoms in more than one setting (e.g. home, school, workplace, etc.), 3) to clearly demonstrate the interference of these symptoms with social, academic, or occupational functioning, 4) and to make sure that the symptoms are not better explained by another mental disorder (e.g. anxiety disorder, mood disorder, personality disorder, etc.) (American Psychiatric Association, 2013, p. 60). After performing the formal diagnosis, clinicians or professionals proceed to determine the nature of the presentation that ADHD individuals fall into (e.g. predominantly inattentive, predominantly hyperactive, or combined) along with the severity of ADHD symptoms (e.g. mild, moderate, or severe) (p. 60-61). All in all, the assessment of ADHD requires adherence to DSM-5 diagnostic criteria.

Because this process is tricky, the sole use of self-report questionnaires to determine ADHD is viewed as inadequate due to a number of reasons. First, they tend to have “a very high false positive rate ...” (Lovett & Harrison, 2021, p. 337). Second, because ADHD symptoms are common with a number of other disorders, it could mislead anyone to believe that they actually have the disorder when they do not. Lovett and Harrison (2021) argued that:

... when an adult who has no prior ADHD diagnosis comes for an evaluation and reports symptoms of inattention or impulsiveness, consider the myriad common problems such as anxiety, depression, stress, and lifestyle behaviors (e.g., sleep problems, substance use) that could cause such symptoms. (p. 337)

Moreover, Lovett and Harrison (2021) also mentioned the problem of conscious exaggeration of symptoms and impairments. They claimed that some individuals deliberately seek diagnosis and their motive behind that is to get access to medication and access to disability accommodations. Careful assessment can detect these individuals, but the fact that there are some who want to be diagnosed with ADHD when there are others who worry about the “stigma” (Sedgwick-Müller et al., 2022) surrounding ADHD and even feel embarrassed to have it (Lagacé-Leblanc et al., 2022) is definitely bewildering. Lovett and Harrison (2021) said: “Since no one’s life is free of problems, ADHD is an attractive explanation for a myriad of complaints” (p. 334). Furthermore, they added that another reason behind conscious exaggeration is the idea that being diagnosed with ADHD can bring them a sense of relief as they believe and consider the disorder to be the cause of the life problems they face (Lovett & Harrison, 2021).

Hence, it is believed that some people would view the latter as a predictable argument that may be raised by individuals who lack self-satisfaction. For some individuals, such a belief may help bring this ignited sense of relief that this disorder could be the answer to the problem of inattentiveness; a problem to which most students overly blame themselves for due to not being like their counterparts who seem to have an unwavering vigilance towards teachers’ words. This difference lies in their steadfast ray of concentration that continues throughout the session regardless of what subject may be taught.

It appears to be plausible to think that the other students who lack this ability are bound to be jealous and no wonder they try to find any means or explanation as to why they are different and why they cannot keep up with the other ‘attentive’ students because being attentive means ability to understand which means ability to participate, to be noticed by one’s teacher, to show one’s competence and eventually to get good grades. It is about the fact that some teachers cannot help but notice these other students while the others are viewed as the invisibles, the unmotivated, the careless, the ‘stupid’ ones, the unfit for school. In a study that took place in the UK, Sedgwick-Müller et al. (2022) also reported this problem of misjudgments surrounding these students as adjectives such as ‘uneducable’, ‘feeble-minded’, ‘backward’, ‘dull’ or ‘maladjusted’ were used to refer to them before ADHD was defined as the cause of their limitations.

This paper realizes that ADHD is a disorder and a topic that is mostly researched by clinicians, neuropsychologists, among others. However, the present article attempted to provide a layman’s perspective as it aims to investigate the extent to which such way of thinking could be plausible in a Moroccan learning context especially since, as previously stated, there seems to be a general misconception that the ultimate source of inattentiveness is ADHD. In other words, is students’ lack of attention indeed due to the fact that they have ADHD and are oblivious about it or is it not related to it at all?

It is believed that the idea of being attentive in a classroom has always been viewed as an inherent ability that students are required to possess in every educational setting regardless of the subject taught or the teacher who does the teaching. So, the bewilderment, previously expressed, could be revoked by the simple fact that we are human beings. As human beings, we always want to be regarded as intelligent and competent. We do not like to show our weaknesses. Thus, it should come as no surprise that when we suffer from a certain weakness like in this case ‘inattentiveness’, we try our best to find the source of that weakness which would allow us to provide a reasonable explanation regarding this difference, or to what make us diverge from the ‘normal’ image that has been projected on us since we started school as kids. The image that we should be intelligent, be attentive in class, understand everything the teacher is saying, and get very good grades in all subjects.

This image that has been unanimously agreed upon has been formed by teachers, parents, and most of all, society. One may ask: Is there something wrong with this image? I would say: In a perfect world, no, there is nothing wrong with it. Nonetheless, we definitely do not live in a perfect world otherwise concepts like failure, accident,

homelessness, poverty, suicide, felony, war, and so on would not have existed. When it comes to an educational setting, then students should not suffer from lack of attention, stress, anxiety, lack of motivation, lack of interest, low self-efficacy, low rates of participation, low academic performance, dropout, delinquencies, bullying, lack of satisfaction, negative perceptions of school and classroom environment, negative attitudes, boredom, etc. Of course, not all classrooms are suffering from these problems, but their existence in many educational settings is undeniable and therefore should not be neglected nor normalized. These and many non-stated problems could be considered as possible sources of inattention instead of merely putting the blame on students' inability to keep up, laziness, lack of desire to study or to make an effort, or in some cases their stupidity which is the most general yet trivial assumption to be made.

Concerning the extent to which ADHD is prevalent, the American Psychiatric Association (2013) revealed that, in most cultures, ADHD is found in "about 5% of children and 2.5% of adults" (p. 61). With regards to its prevalence among university students, since it is the sample that this article is concerned with, Kwon et al. (2018) reported that: "Approximately 2–8% of university students have clinically significant ADHD symptoms" (p. 1). Unfortunately, the extent to which ADHD is prevalent in Morocco is still unknown. In an article by Benzineb (2016), a Moroccan psychiatrist, she professed that in Morocco there are "no accurate statistics about the disorder". Still, she said that the disorder is "evident" among children. She confirms my point about the negative opinions held towards children who deviate from the norm as she expressed that they tend to be viewed as delinquents, disrespectful, and not worthy of education, etc.

In addition, records of a talk show (Kasmi & Laayouni, 2022) called 'Kif El Hal' that aired on national TV on a channel called '2M' was found in the internet. A Moroccan psychiatrist was invited to discuss ADHD. He confirmed the intricacy behind ADHD diagnosis which consists of observations, interviews, and tests, but, most importantly, revealed that this diagnosis can take place in Morocco by Moroccan professionals (e.g. psychiatrists or psychologists) which can be relieving to many parents.

Hence, from the Moroccan resources found, it seems that attempts to raise awareness about this disorder in Moroccan society is evident but, research in this context is believed, to my knowledge, to still be in its infancy. With regard to research, one study on ADHD in Morocco, written in English, was found by Rouim et al. (2017). The study was conducted on 239 children aged 6 to 16 in Kenitra in which they revealed a significant correlation between ADHD and academic achievement as children with ADHD demonstrated low grades in the subjects of mathematics and natural science. Its limitation, similar to this study, is that ADHD was determined using information from self-reports that were filled by teachers and parents.

The following section reports the impact of ADHD on students' learning, performance, and its status in an educational environment.

ADHD and Academic Performance

According to the aforementioned, it has been argued that an accurate diagnosis of ADHD necessitates the presence of the criterion that individuals need to be impaired in more than one setting (e.g. school, home, work, etc.). Since the present work mainly focused on the educational setting, the discussion will be centered on impairments of academic functioning, specifically among university students.

Students who are diagnosed with ADHD are bound to face challenges that can prevent them from or hinder their chance of achieving school success as opposed to their non-ADHD peers. DuPaul et al. (2009) stated that "a comprehensive review of the literature was conducted with findings consistently indicating academic deficits associated with ADHD in college students" (p. 234). It was reported that, as opposed to the non-ADHD peers, ADHD college students suffered from low GPA and are less likely to graduate from college whether ADHD was determined from a diagnosis or by exhibiting high self-reported symptoms. The American Psychiatric Association (2013) also reported that "ADHD is associated with reduced school performance and academic attainment, social rejection, ..." (p. 63). They added that elevated symptoms of inattention are extensively linked to academic deficits, school-related problems, and peer neglect. Biederman et al. (2010, p. 6), on their part, mentioned ADHD being associated with significantly higher rates of grade retention, need for extra tutoring, and higher rates of school suspensions and expulsions compared to their counterparts (non-ADHD control group).

In a study that was conducted in Sweden on 29 128 primary and lower secondary school students who were diagnosed with ADHD, Jangmo et al. (2019) found that ADHD exercised a significant negative impact on school performance regardless of the parents' socioeconomic status. This was further confirmed by DuPaul et al.'s (2021) longitudinal study which involved 201 college students with ADHD and 205 non-ADHD comparison students. Results showed that college students with ADHD reported lower GPA, inadequate use of study skills strategies, and showed diminished progress toward graduation over time.

In a qualitative study by Kwon et al. (2018) involving university students who rated themselves on self-reports of ADHD symptoms, students reported a number of difficulties, among them is dissatisfaction with academic performance. It was argued that unsatisfactory academic performance resulted from inability to prioritize and complete tasks, lack of concentration, and struggle with repeated failures. Sedgwick-Müller et al. (2022) also asserted the existing association between ADHD and poor educational outcomes. They summarized key findings from a review conducted by Sedgwick (2018) on the impact of ADHD on university students. These impacts were categorized into six themes. The one that this article is mostly concerned with is academic functioning in which ADHD was found to be associated with "poor performance in time-limited exams and poor overall academic achievement" (p. 5).

Thus, ADHD students may feel that the idea of being in an environment that is specifically catered for the non-ADHD students to be unfair and unappreciating of the differences they, unwillingly, exhibit. For example, DuPaul et al. (2009) reported some of the problems faced by students who received an ADHD diagnosis that their counterparts may consider to be far-fetched. Some of these problems, as deduced from Lovett et al. (2008), are: "struggles with timed tests, lack of test completion on time, longer duration to complete assignments, and perception of working harder to achieve good grades" (p. 237). Though not conclusive, poor performance at school was linked to "inadequate academic coping strategies, poor organizational and study skills, time management difficulties, and cognitive impairments such as inattention, intrusive thoughts, and internal restlessness may all have influencing effects" (DuPaul et al., 2009, p. 246).

Self-Efficacy

Self-efficacy is a psychological construct that was introduced by Albert Bandura which he defined as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (1997, p. 3). Self-efficacy is rooted in the social cognitive theory in which "people are viewed as self-organizing, proactive, self-reflecting and self-regulating rather than as reactive organisms shaped and shepherded by environmental forces or driven by concealed inner impulses" (Pajares, 2002, para. 2). This theory posited that human functioning is a product of a dynamic interplay between personal, behavioral, and environmental factors (Pajares, 2002). It is based on the principle of human agency that argued that our behaviors and actions are within our control as opposed to the belief that we are imposed to act in accordance with our surroundings. Consequently, Bandura (2001) viewed efficacy beliefs as the foundation of human agency.

Self-efficacy is measured using self-report scales in which students' self-efficacy is determined in conformity with one of its dimensions: magnitude, strength, and generality. Magnitude refers to "the level of task difficulty that a person believes he or she is capable of executing" while strength denotes "whether the individual's judgment about magnitude is strong and likely to produce perseverance in coping efforts, or weak and easily questioned in the face of difficulty" (Stajkovic & Luthans, 1998, p. 69). Generality demonstrates the extent to which individuals' self-efficacy beliefs in one domain can overlap with another domain.

More importantly, the assessment of self-efficacy should not be taken for granted. It has been reported that self-efficacy research has been plagued with omnibus measures that were used to assess self-efficacy. Pajares (1996) argued that such omnibus measures "... create problems of predictive relevance and are obscure about just what is being assessed" (p. 3) Pajares (1997) stated that "efficacy beliefs should be assessed at the optimal level of specificity that corresponds to the criterial task being assessed and the domain of functioning being analyzed" (Assessing self-efficacy beliefs sec., para. 1). In other words, self-efficacy itself is not an omnibus trait for it to be assessed with omnibus scales as it is considered "a differentiated set of self-beliefs linked to distinct realms of functioning" (Bandura, 2006, p. 307).

Self-efficacy beliefs or judgments of capabilities are formulated on the basis of the information collected from four sources. The four sources of self-efficacy, also referred as 'determinants of self-efficacy' (Stajkovic & Luthans,

1998) are: mastery experience, vicarious experience, verbal persuasion, and physiological states. As deduced from Dewitz and Walsh (2002), these sources “act as bearers of information that an individual uses to derive their self-efficacy beliefs from” (Oulaich, n.d.). Pajares (1997) stated that judgments of self-efficacy are influenced by a process that involves selection, integration, interpretation, and recollection of information.

The following section attempts to link self-efficacy with attention-deficit/hyperactivity disorder (ADHD).

ADHD and Self-Efficacy

This section attempted to link ADHD with self-efficacy beliefs. As discussed above, this self-belief plays a remarkable role in students’ learning no matter what their level may be. The impact of ADHD on academic performance has been substantially reported and approved. High grades are interpreted as students being able to achieve the objectives of the course set on them. Comparatively, self-efficacy, when assessed properly, can also assist in identifying the ADHD students who are confident in learning and/or achieving the objectives required from them to learn and those who are not confident to do so.

Taking self-efficacy into consideration along with ADHD and academic performance could provide valuable insights. In other words, assessing self-efficacy in a certain course or module among ADHD university students can help teachers predict their performance beforehand which would allow them to devise countermeasures that will rectify students’ judgments of their capabilities by promoting the skills and knowledge necessary to achieve their end goal. Assessment of self-efficacy will also permit teachers to check whether calibration is needed. Its purpose is to check whether students can do what they believe or judge themselves to be able to do or not. Calibration, according to Pajares (2009), refers to “the “match” between self-efficacy and performance, which is to say the “accuracy” of a self-efficacy judgment” (p. 157). It is believed that this will allow ADHD students to know where they stand and to figure out what they need to do or fix to reach their goal.

In a study by Lagacé-Leblanc et al. (2022) that took place in Quebec, one of the difficulties that college students reported was that related to attention. They reported difficulties deciphering meaning from a text, having trouble with the lecture-type of teaching, with note-taking (especially when it should be done along with listening), keeping themselves focused for a period of time, require more time on exams and on reading assignments, failing to keep track of what was taught in class, and even forgetting to answer test questions (p. 134). All of this can be overwhelming to them which could reduce the possibility of them having high self-efficacy in a learning context. Additionally, in their study, students with ADHD felt that the disorder diminishes their self-confidence and self-esteem. It was viewed as an inconvenience that restrained them from adjusting to college or university environment appropriately along with the involuntary, yet constant, comparison made with non ADHD students which induced the feeling that they are not equal to others, not to mention, reliance on the pill which allowed them to function in everyday life.

The previous statement further confirms the indispensable role of self-efficacy in our lives. Students would not have had to rely on the pill if they did not believe that it would be hard to function in their day-to-day activities. In their study, the students themselves expressed doubts about their ability to succeed. As a result, a similar assumption was raised by Lagacé-Leblanc et al. (2022) who stated that “experiences of students in our study can account for their lack of self-confidence. This lack of confidence might also relate to low academic self-efficacy (e.g., less confidence in their ability to perform academic tasks)” (p. 139). In addition, Kwon et al. (2018) mentioned a previous study where university students with ADHD were found to demonstrate lower self-efficacy.

Moreover, it has been reported that with regards to ADHD, students suffer from “impairments in motivational functions such as activating to work and sustaining effort” (Brown, 2013). In a study by Kwon et al. (2018), students also reported lack of motivation and self-distrust (low self-esteem). Another common problem that students with ADHD have trouble with is to maintain persistence especially if they perceive the task to be cognitively challenging or not interesting. The association between self-efficacy, motivation, and persistence has also been extensively proved in the literature. Schunk and Usher (2012) attested that: “Self- efficacy is an especially critical influence on motivation and affects task choices, effort, persistence, and achievement” (p. 13). Furthermore, according to Lagacé-Leblanc et al. (2022), self-regulation has been categorized as a complex executive functioning skill along with planning and organization which are required in higher education settings. In this regard, the impact of self-efficacy also stretches to self-regulation as Pajares (2002) reported it to be a critical determinant of the latter.

Methods:-**Participants**

The participants were university students from Moulay Ismail University, faculty of arts and humanities in Meknes, Morocco. The study mainly involved freshmen, semester 1 (S1) students from the English department. A total of 176 returned the questionnaire distributed to them.

Data collection

Data was collected using a questionnaire that was divided into 4 parts. The first part dealt with background information in which students were asked to reveal their age, gender, and answers to three yes or no questions about whether they have trouble focusing in their class, whether they have ever heard of a disorder named Attention-Deficit/Hyperactivity Disorder (ADHD), and (if yes) whether they suspect that they have it. In the second part, students were asked to fill the Adult Symptom Self-Report questionnaire. The questionnaire was similar to the Adult ADHD Self-Report Scale (ASRS-v1.1) Symptom Checklist, except that the items were based on the first criteria set by DSM-V to determine the presence of ADHD symptoms. Similar to ASRS-v1.1, a five-point Likert scale was adopted, namely none, rarely, sometimes, often, and very often coded 1, 2, 3, 4, and 5, respectively. The approach adopted to determine the presence of ADHD symptoms along with its presentation; attention, hyperactivity/impulsivity, or combined in students was based on the criteria set by DSM-V which argues that at least five symptoms should be reported. Based on the ASRS-v1.1, the latter was identified based on students' answers, specifically in the scales very often, often, and sometimes.

Then, students were asked to fill in the Grammar 1 Self-Efficacy Scale. It is a self-developed questionnaire in which students reported their self-efficacy beliefs in a grammar course that S1 students take. It consists of 10 items rated on a five-point Likert scale, namely not at all confident, slightly confident, somewhat confident, quite confident, and extremely confident coded 1, 2, 3, 4, and 5, respectively. The scale revealed an alpha (α) value of .92 which signifies, according to the criteria set by George and Mallery (2020), that it has excellent internal consistency ($n = 142$). In a doctoral dissertation by Oulaich (n.d.) that involved a Moroccan sample of S1 university students ($n = 227$), the same scale was used which revealed excellent internal consistency as well with an alpha value of .912. The questionnaire heeds Bandura's and Pajares's warning with regard to the omnibus measures used to assess self-efficacy. Hereafter, the questionnaire, in this study, specifically assesses students' self-efficacy in grammar based on what was taught to them, particularly tenses. The nature of students' self-efficacy beliefs was determined by classifying scores from 1 to 2.39 as low self-efficacy, scores from 2.4 to 3.69 as moderate self-efficacy, and scores from 3.7 to 5 as high self-efficacy beliefs.

Last but not least, academic performance was measured through a short written test that was attached to the questionnaire. It assessed students on the exact same tasks that they were asked to rate their self-efficacy on to ensure correspondence and specificity. A score out of 20 was given which is the grading system used in Moroccan universities. A high total score will evidently indicate high performance.

Procedure:-

The questionnaires were distributed in the first two weeks of December of the academic year 2022-2023. The target sample of this study was semester 1 students (S1 or freshmen) from the English department. The S1 students' schedule was duly noted from the bulletin board outside of the faculty along with information about their classes and their teachers' names. After collecting the needed information, some teachers were contacted via email and others were reached out personally. They were requested to allocate around 30 minutes by the end of the session and permission to collect data was sought for which they kindly granted. Out of the nine S1 groups, five classes were covered. Unfortunately, the data collection period coincided with the FIFA World Cup which affected attendance. Hence, the low number of participants in this study was due to this unforeseen variable.

The objectives of the study:-

The study seeks to cover the following objectives: 1) to determine the prevalence of ADHD among university students who major in English studies in this faculty and to check whether the symptoms differ in terms of gender, 2) to identify whether the ADHD and non-ADHD groups demonstrate a statistical difference in self-efficacy scores, 3) and whether the ADHD and non-ADHD groups show a statistical difference in academic performance.

Research Questions:-

1. To what extent is ADHD prevalent in this sample? Who is more likely to report ADHD symptoms, males or females?
2. Is there a significant difference in the mean self-efficacy scores for ADHD and non-ADHD students?
3. Is there a significant difference in academic performance for ADHD and non-ADHD students?

Research hypotheses

1. ADHD symptoms are more likely to be present in females.
2. The mean self-efficacy scores for ADHD and non-ADHD students will differ significantly.
3. Academic performance for ADHD and non-ADHD students will differ significantly.

Data analysis

To answer the questions raised in this paper, the following analyses were run. First, a reliability analysis was run to assess the internal consistency of the Grammar 1 Self-Efficacy Scale using Cronbach's alpha (α). Subsequently, a chi-square test for independence was used to pinpoint whether there would be a difference in ADHD in terms of gender. Then, an independent-samples t-test was run twice; the first time to determine whether ADHD and non-ADHD students significantly differ in academic performance and the second time whether the statistical difference exists in terms of their self-efficacy beliefs.

Results:-

The participants were Moroccan S1 students from the faculty of arts and humanities in the city of Meknes, Morocco. The sample ($n = 174$) consisted of 85 females (48.9%) and 89 males (51.1%) in which most of them (88, 50.6%) were between the age of 17 and 19, 65 (37.4%) were between 20 and 22 years old, and 14 (8%) were between the age of 23 and 25 years old while 7 (4%) reported themselves to be older than 25 years old. Two students declined to state their gender and other two students declined to reveal their age. Furthermore, students were asked to report whether they had trouble focusing in their classes. Among those who answered ($n = 171$), only 22 (12.9%) of them negated the presence of such a problem while 87.1% (11.7% answering yes, 75.4% answering sometimes) confirmed that they have trouble maintaining focus in class.

Viewing that awareness of ADHD as a disorder is still slow-growing in Moroccan society, a question was included in the questionnaire to determine students' familiarity with the disorder for the sake of getting a faint glimpse at whether Moroccan university students are knowledgeable of such a disorder or not. The answers ($n = 169$), as expected, mostly leaned towards negation as 138 (81.7%) reported that they have never heard of this disorder while only 31 (18.3%) declared themselves being familiar with the latter. Regardless of that, some students seem to be misguided about what ADHD really is as it was considered as a type of anxiety.

Prevalence of ADHD and its association with gender

The first aim of this study was to determine the extent to which ADHD may be prevalent in a Moroccan sample, specifically, Moroccan university students. The presence of ADHD, as previously mentioned, was marked by the presence of at least 5 symptoms in one or both of the representations of ADHD based on DSM-V criteria. Thus, among those who provided complete responses to the ADHD self-report questionnaire ($n = 152$), it was found that 56 (36.8%) reported themselves having at least 5 ADHD symptoms and were categorized as the ADHD group while the rest (96, 63.2%) were categorized as the non-ADHD group. In addition, an attempt was made to identify which presentation the ADHD group falls in. Findings demonstrated that 29 (19.1%) belonged to a predominantly inattentive presentation, 8 (24.3%) declared a presentation that was predominantly hyperactive/impulsive while 19 (36.8%) belonged to a combined presentation.

Viewing that students were asked whether they had trouble focusing in their classes, it seemed interesting to figure out whether this problem would be associated with their rating of ADHD symptoms. To achieve this purpose, a Chi-square test for independence was run which showed that there is no significant association between ADHD symptoms and the problem of focus that they have, $\chi^2 (2, n = 148) = 4.23, p = .12$, Cramer's $V = .169$. In accordance with the criteria reported by Pallant (2011), the Cramer's V value in this study signals a small effect size.

One of the objectives of the study was to check whether the presence of ADHD symptoms would differ in terms of gender among university students. A Chi-square test for independence (with Yates Continuity Correction) demonstrated that there is no significant association between gender and ADHD symptoms, $\chi^2 (1, n = 150) = 2.41, p$

= .12, phi = .14. Following the criteria set by Cohen (1988), as reported by Pallant (2011), the phi coefficient indicates a small effect size.

ADHD & Academic Performance

An independent-samples t-test was conducted to compare academic performance in grammar for ADHD and non-ADHD university students. Results revealed that there was no significant difference in academic performance for ADHD ($M = 5.86$, $SD = 6.35$) and non-ADHD students ($M = 4.98$, $SD = 6.04$; $t(150) = .846$, $p = .39$, two-tailed). The magnitude of the differences in the means (mean difference = .87, 95% CI: -1.17 to 2.92) was very small (eta squared = .004) signifying that only .46% of the variance in academic performance was explained by the presence of ADHD symptoms.

ADHD & Self-Efficacy

To determine whether the two groups, ADHD and non-ADHD students, differ in self-efficacy beliefs, another independent-samples t-test was run. Similarly, it was found that there was no significant difference in self-efficacy scores for ADHD ($M = 3.52$, $SD = 1.02$) and non-ADHD students ($M = 3.66$, $SD = .95$; $t(122) = -.73$, $p = .46$, two-tailed). The effect size of this difference (mean difference = -.13, 95% CI: -.49 to .22) was also very small (eta squared = .004) indicating that only .43% of the variance in self-efficacy scores was explained by the presence of ADHD symptoms.

Discussion:-

The present paper sought to achieve four objectives. First, it attempted to determine the extent to which ADHD symptoms may be prevalent in a Moroccan faculty ($n = 152$). Results showed that 36.8% have at least 5 ADHD symptoms and were categorized as the ADHD group while the remaining 63.2% were categorized as the non-ADHD group. The result was beyond what was expected. In a study by Kwak et al. (2015), in a sample of 2172 college students who reported to a self-report scale, only 7.6% of them reported themselves having ADHD symptoms. As previously stated, the categorization of students into the two groups was based on their ratings in a self-report ADHD symptom scale. It has been advised to keep in mind that “high levels of self-reported symptoms alone are not sufficient to verify the presence of adult ADHD” (Lovett & Harrison, 2021, p. 335). In the present paper, the purpose of using a self-rating scale was mainly taken as a mean that may enable us to identify students “at risk” for ADHD (Dupaul et al., 2009).

Furthermore, students may report symptoms of ADHD but may not actually have the disorder as there are many biological and psychological problems that share the same symptoms like anxiety, depression, and some learning disabilities, and this, as a result, complicates things (CHADD, 2017). Sedgwick-Müller et al. (2022) also added that “symptoms of ADHD can be misdiagnosed for anxiety, mood, or personality disorders” (p. 12). This problem of mismatch also emphasized the importance of getting a comprehensive evaluation of one’s mental health from a specialist (e.g. clinician, psychiatrist ...).

In addition, instead of mismatch, the problem can be extended to comorbidity which means when ADHD co-occurs with another or other disorder(s). CHADD (2017) explained that: “Any disorder can co-exist with ADHD, but certain disorders seem to occur more often. These disorders include oppositional defiant and conduct disorders, anxiety, depression, tic disorders or Tourette syndrome, substance abuse, sleep disorders and learning disabilities” (p. 3). The feasibility of such problems to exist in a Moroccan educational context is not remote. This was deduced from one respondent ($n^{\circ} 127$) who reported having both ADHD and depression. It is unknown whether this was detected from a formal diagnosis, but she said: “I have ADHD and it is one of the results of my depression or causes of it, I’m still going through it, it is really hard to deal with. I chose English to reduce it.”

Second, the paper attempted to demonstrate whether there would be a significant difference in ADHD among females and males. Results revealed that there was no significant association between gender and ADHD symptoms which rejected the second hypothesis. Viewing that the participants of this study did not receive a formal ADHD diagnosis, the results made sense. According to the American Psychiatric Association (2013), ADHD is more frequent in males than females and females are more likely to fall into a presentation that is predominantly inattentive. Third, an attempt to identify whether the two groups would differ in academic performance was made. Findings showed that there was no significant difference in academic performance for ADHD and non-ADHD groups with a very small effect size. Again, it is believed that the use of self-reports may have affected the results. In contrast, DuPaul et al. (2009) deduced from a number of studies that “students with ADHD are at risk for poor

academic achievement, failure, and are less likely than their non-ADHD peers to attend and complete a college education ...” (p. 236).

Last but not least, the study tried to identify whether there would be a significant difference among the two groups in terms of their self-efficacy level. It was found that there was no significant difference in self-efficacy scores for ADHD and non-ADHD group with a very small effect size. As previously stated, assessment of self-efficacy among students with ADHD can provide valuable insights to both students and their teachers. It would allow ADHD students to determine the tasks they feel confident to execute and those that they still have trouble mastering. It would also allow teachers to predict students’ academic performance before they take a formal exam. This would assist them in rectifying students’ judgments of their capabilities by matching them with their true capabilities, reinforce their learning, and adopt interventions that would improve their self-efficacy and even other self-beliefs (e.g. self-confidence, self-esteem).

Still, this can only be viable if students receive formal diagnosis as it would assist teachers in many ways. Lagacé-Leblanc et al. (2022) argued, in their study, that short interventions that serve to enhance time management, organization, and planning skills have proven to be “... particularly relevant because it improves the feeling of self-efficacy and the level of self-confidence of students academically” (p. 140). Similarly, Sedgwick-Müller et al. (2022) mentioned academic coaching as a non-pharmacological intervention to be considered for ADHD university students. They reported results from Parker et al. (2013) in which university students received academic coaching which helped them “... enhance their self-discipline, self-efficacy, study skills, ability to formulate realistic goals and to think more about long-term goals and maintain motivation to achieve them” (p. 20).

As attested by CHADD (2017), it is worth keeping in mind that “without identification and proper treatment, ADHD may have serious consequences, including school failure, family stress and disruption, depression, problems with relationships, substance abuse, delinquency, accidental injuries and job failure” (p. 1). Above all, it is important to conduct studies that will assist in raising awareness about ADHD in Moroccan society in the hope of developing a better understanding of students’ experiences with it which can also help teachers understand and acknowledge it as one of the many sources of hindrances that can take place in a learning environment. This was very well expressed by Simonescu et al. (2012) when they said that “having this disorder does not define the patient as hopelessly impaired or ‘abnormal.’ All people have strengths and weaknesses” (p. 222).

Conclusion:-

The extent to which ADHD is prevalent in Morocco is still unknown. Thus, this study is an attempt to shed light on this mental disorder even if it is done faintly. The article aimed to provide a preliminary outlook about ADHD in a Moroccan sample involving university students. First, findings revealed that the presence of ADHD symptoms among Moroccan students should no longer be considered a far-fetched possibility and therefore should not be taken lightly. It is true that ADHD was determined on the basis of a self-report scale which is considered inadequate, but there is still a chance or possibility for an ADHD diagnosis to be plausible for some students if they were to be directed to a professional to receive a formal diagnosis. The other findings showed that there was no difference among the ADHD and non-ADHD group in terms of gender. In addition, the two groups were also found to not be significantly different in both self-efficacy scores and academic performance. Viewing that the study did not involve students with a real diagnosis, the findings were, to some extent, expected to turn out as such. To conclude, the results reached in this study may not be remarkable, but they are still worthwhile as they may serve as a stepping stone for Moroccan researchers interested in ADHD and in knowing the functional impairments that Moroccan students suffer from according to their perspective.

Limitations

Like most studies, this study could not spare itself from limitations. One of the first limitations of this study is its inability to make any generalizations from the results retrieved due to many reasons. First, the size of the sample was very small (barely 200) making it difficult to generalize the results achieved at the faculty level. Second, the students who participated in this study were mainly from the English department. It would have been much more insightful if students from other departments, even from other faculties were involved in the study. Third, students were grouped into ADHD and non-ADHD groups on the basis of their responses in a self-report instrument of ADHD symptoms. The goal was mainly to identify whether those symptoms are present in a Moroccan sample of university students or not. Thereupon, this study is aware of the fact that the way in which ADHD was measured does not entail a proper ADHD diagnosis and because of this, the results retrieved in an attempt to investigate the

disorder's association to gender, academic performance, and self-efficacy beliefs are not to be taken as conclusive findings. To compensate this weakness, a formal diagnosis is required among Moroccan students to clearly determine the latter's impact on academic performance, self-efficacy, and even on other affective and behavioral outcomes.

Future directions

This section reported the future directions that could be taken by future studies, particularly if they were to be conducted in a Moroccan context. First, efforts need to be made to identify the diagnostic status of Attention-Deficit/Hyperactivity Disorder (ADHD) in Morocco. For this, a formal diagnosis of ADHD is required to explore the prevalence of this disorder among Moroccan students to determine the age of onset symptoms as well as the degree to which the symptoms impair their functioning. Unfortunately, as previously discussed, the diagnosis of ADHD is beyond teachers' capabilities as it necessitates the involvement of a professional –clinician or psychiatrist, to truly identify its presence in an individual along with the different facets it plays in his/her life which extends beyond the educational context. In addition, this would provide a chance to determine the experiences of Moroccan ADHD students who are formally diagnosed and assist in devising countermeasures or interventions that are appropriate for them to ensure school adjustment, success, and self-regulation. Furthermore, it would be interesting to know whether teacher training programs make any attempts to introduce to teacher trainees the mental disorders that their future students could be suffering from. Even if teachers cannot easily identify such disorders with the help of scales, it is still believed to be important for them to develop awareness on such matters in case, no matter how small it may be, some of their students exhibit behaviors or attitudes or responses that may seem beyond their control or beyond what their capabilities may allow them to handle. This step is also beneficial as it would assist them in becoming more attentive to their students' shortcomings allowing them to be more resourceful in terms of how they can deal with them and, most importantly, avoid making hasty judgments that classify students as dumb or unfit for studying. Finally, like this study, future studies could make use of the students who receive formal diagnosis from a professional to conduct comparative studies with non-ADHD students to examine the extent to which they differ in learning, behavioral, and affective outcomes to ensure credible findings and to develop interventions that would help them overcome the difficulties or challenges they face in their schools.

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