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Regular sports practice and its impact on mental health and academic performance among Algerian students in BEM classes

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Abstract:

In adolescents, regular physical activity increases self-esteem and the perception of physical competence, two variables that make it possible to cope with daily stress (Ortega & al, 2008).

It has been shown that in schools, increasing theoretical educational time at the expense of physical education time would harm academic results (*Bekhechi K & Khiat B, 2019*).

The analysis of a questionnaire that was distributed to 120 parents of students at the 4th grade and who are concerned by the examination of the BEM, belonging to the West Algiers region, reveals that indeed regular sports practice preserves mental health, improves the emotional state of young people; and that physically active students had higher academic performance than non-active students, which was demonstrated by the results of the BEM.

Keywords: Regular sports practice; Mental health; School results; Exam classes; BEM.

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1. INTRODUCTION

Physical activity is defined as any body movement produced by the contraction of skeletal muscles that results in a substantial increase in energy expenditure over the expenditure of rest (*Caspersen et al, 1985; US Department of Health and Human Services, 1996*).

For the WHO, physical activity includes play, sports, travel, daily tasks, recreational activities, physical education or planned exercise in the family, school or community context. (*Who, 2020*).

This practice provides a host of benefits that promote the full development of an individual in terms of physical and mental health. with the adoption of a physically active lifestyle that contributes to overall health, especially among youth (*Kelly, Cavill & Foster, 2009~ Liao et al. 2014~ Tremblay et al. 2011*).

In young school children in general, physical activity should be a daily practice because it is essential to the constitution of bone capital, it helps prevent obesity, preserve health, improve well-being, mental health, better coping with stress and contributing to adolescent social development in particular (*R. M. Eime et al, 2013; Logan et al, 2019*);

During this period of life the young person undergoes very important physical, intellectual and even social changes, it is also a crucial period for the development of emotional habits important for mental well-being. (*Evan, 2023*)

A broad consensus exists on the beneficial role of physical activity in adolescents during the period of pubertal bodily and psychological upheaval. The positive impact

are particularly concerned with stress, well-being, self-image, social functioning... Here too, the effects of physical activity on self-esteem are more important

in adolescents who suffer from low self-esteem. (*Sylvain Aquatias, 2008*)

The benefits of a healthy lifestyle, including frequent physical activity practices, also apply to the school context because the school is a privileged place to set up physical activity and induce changes in the behaviour of the child and his family. Its role is not limited to physical education and sports (PE) but extends to all periods of intercourse and extracurricular (*Ikiouane Mourad et al, 2023, p72*)

Indeed, many educational researchers have observed positive links between physical activity in its various forms and various indicators of performance or academic success (*Burton and VanHeest, 2007; Coe et al., 2006; Shephard, 1997; Sibley & Etnier. 2003*).

Howie and Pate (2012) “Increasing physical activity improves student academic performance.”

Around the age of 13, 14 or 15, middle school students give a lot of space to sport in their leisure and practice a sports activity at least once a week as part of the EPS session and mostly they are registered in an association or a sports club (*pre-existing result, 2023*). However, this sport is abandoned by some teenagers for several reasons under the pretext of workloads or to free themselves from important exams such as the patent or the bac (*result survey, 2022*).

Knowing that the intellectual construction goes through a healthy body (*Atallah Chahrazed et al, 2022, p 431*); this research has therefore found its origin around these reflections and from a questionnaire of preinquiry,

The subject of this study will focus on the relationship between physical activity and sports and the achievement of good academic results in the short term among adolescent schoolchildren concerned by the patent examination. The problem being identified, the study questions follow:

Study Issues:

- 1- Do young middle school students engage in regular physical and sporting activity both inside and outside the college?
- 2- The end of year exams are the cause of the cessation of sports practice in adolescents during their period of schooling in college.
- 3- Is psychological stability and self-esteem the result of regular sports practice in the young school-aged teenager?



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Purpose of the study:

The objective of the study is to demonstrate that regular physical activity and sports have a positive effect on the mental health of schooled adolescents and also on the achievement of good academic results and therefore the success of the BEM exam.

Hypothesis of the study:

In the school context, physical and sports education is aimed at students of all ages, focusing on the development of motor versatility in children and adolescents;

Well-designed physical education sessions are also a privileged laboratory where participants have the opportunity to acquire moral values such as respect for themselves and others, respect for rules, the desire to surpass themselves (*Kara.K.Palmer et al, 2013*).

According to *Paolotti (1999)*: «physical education promotes the learning process», first it maximizes attention in the sense where the student is active and fully invests in the proposed activities, then it promotes sensory information and improves perception.

It is demonstrated that experiential learning by the body forms a concrete and solid basis on which to build the continuation of school learning; this said, memorization is favored by movement.

The movement responds to a natural need of the child and demonstrates its interest; indeed, it promotes the myelination of the nervous system, builds self-esteem and an agility of thought, fluidity of muscle tone, conveys emotions, promotes good social integration and makes it possible to be an actor in its communication (*S.Chabloz, 2007*)

We assume that;



1- The practice of a regular sports activity allows to better manage one's emotions and to overcome any kind of discomfort by always having a good mental health especially in young people,

2- Regularity in sports practice allows young schoolchildren to have good academic results, at least through the PSE session.

Similar studies

Studies similar to our study are listed as follows:

National Studies:

1/ **Author:** Amina Kheira Bekhechi

Title of the publication: **the effect of regular physical activity and sport on children's cognitive development**

Publication review: public & nonprofit management review; vol. 4, no 1

Year of publication: 2019

Summary: This study seeks to demonstrate whether sports activity has an impact on cognitive functioning and whether this causal link is significantly important in certain disciplines.

Methods: An experimental group composed of 55 students practicing an extracurricular sport activity at 3 sessions per week and a control group of 55 non-practising students aged 6-10 years of both sexes, primary schools in the city of Oran (Algeria) were followed for 15 months (five quarters). Socio-demographic data were collected through a questionnaire for students in both groups. An intelligence test the CPM (Raven's Coloured Progressive Matrices) was administered at the end of the fifth trimester to assess the main cognitive abilities in both groups.

Results: Out-of-school sports students had a significantly higher level of intelligence than non-practising students ($p < 0.05$).

Article link: <https://revues.imist.ma/index.php/PNMReview/article/view/15745>

2/ **Author:** Haddadi Rafika and Zerarga Fadila

Title of the publication: **self-esteem and school failure among middle school students: a comparative study between redoublants and non redoublants at cem de Béjaia**

Journal of the publication: human and social science, Demography

Year of publication: 2013

Abstract: School failure results in institutional measures, repetition of classes, imposed orientations, disrupted school curricula, the causes of failure are varied and multiple, several analyses are opposed on the causes of school failure and their



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consequences, especially on their self-esteem in a difficult period which is adolescence, it is the period of construction and development on the physical and psychological level where the student begins to build his professional future that depends on his academic results. The objective of this research is to find out if the adolescent with academic failure shows a lower self-esteem compared to the non-redundant pupils.

Article link <http://www.univ-bejaia.dz/dspace/handle/123456789/5893?show=full>

3/**Author:** Hamid El Oirdi, Aziz Eloirdi, Amina Bouziani, Khadija El Kharrim

Title of the publication: **impact of physical activity on the school performance of Moroccan schooled adolescents**

Publication Review: Podium of Sport Science: Volume 2, No. 1 Year of publication: 2023

Abstract: Background: A study was conducted to explore the link between physical exercise and academic success in some Moroccan students, who show insufficient academic performance.

300 middle school students aged 12 to 16 were randomly recruited. The physical activity assessment was done using a valid questionnaire.

Results: The results showed a significant correlation between physical activity and academic performance ($r = 0.176$; $p < 0.001$) as well as with the score in physical education and sports.

Conclusion: It is therefore recommended to encourage physical activity among Moroccan students to improve their academic performance, as well as to add physical education and sports sciences in schools.

Article link: <https://doi.org/10.34874/IMIST.PRSM/podium-v1i1.38135>

International Studies:

4/ **Author:** Stéphane Bénit and Philippe Sarremejane

Title of the publication: **the experience of school assessment among schoolchildren. contribution to knowledge of motivational processes at school**

Publication Review: McGill Journal of Education/ McGill Journal of Education, Volume 54, Number 1

Year of publication: 2019

Abstract: This article tries to understand, through the quantitative exploitation from a questionnaire administered to middle school students, the way French



schoolchildren react to school verdicts. The analysis tries to distinguish the effects of two distinct evaluative practices: skills assessment and school scoring. The assessment by skill offered more frequently in primary school limits the academic discouragement in some students in difficulty but cannot, like the school notation totally free of a certain fear of failing. Finally, our study shows that the students surveyed work mainly in order to obtain good academic results and the perspective of a future profession.

Article link: <https://id.erudit.org/iderudit/1060862ar>

5/ **Author:** P.Laure and C.Binsinger

Title of the publication: **Regular physical activity and sport: a determinant of academic achievement in college.**

Publication Review: Science et Sports, Volume 24, No. 1

Year of publication: 2009

Abstract: To measure the long-term effects of extra-curricular physical and sports practice on academic performance in college, whether this practice is regular, irregular or absent.

Methods: Study of a cohort of students from the Vosges, followed for 30 months since the fifth grade. Self-administered questionnaires six months apart.

Results: One thousand four hundred and eleven pupils are present at each of the five passages, of which 54.4% are girls, initially aged 12.7 0.6 years (average standard deviation). In total, 13.8% have never played sports outside college, 44.7% have always done so and 41.5% from time to time. The overall school average reported was higher in regular athletes ($p < 0.001$). It is the regularity more than the number of hours per week that explains this difference.

Conclusion: The practice of physical activity and sports in adolescents should be widely encouraged given its beneficial effects not only on health, but also on academic performance. Parents, teachers and health professionals should be strongly sensitized.

Article link: <https://doi.org/10.1016/j.scispo.2008.05.001>

Synthesis of previous studies:

The studies cited above have all treated the same subject of reflection namely the academic success of college students. The first study was interested in the first



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school age, while the second study to work on the mental health variable by focusing on the concept of self-esteem among middle school students but it did not introduce the concept of physical education and sports;

The third study to work on a Moroccan population with the same keywords as our study except that the concept of BEM examination was not addressed;

The subject of the 4th study revolves around motivation and school assessment still among middle school students which does not correspond to our study;

For the 5th and the last study, which has the same basic concepts and which are the practice of physical activity and sports and academic success with the missing concept of mental health, in addition the population concerned by the study is a foreign population, So according to this analysis we can easily approach our study by keeping the same chosen concepts especially since we were interested in the relationship between sports practice, mental health and BEM results in a purely Algerian population.

Definition of concepts:

Regular sports: Physical and sports education (PE) is a teaching discipline that is addressed to all students regardless of their resources. It allows the development of motor behaviors and relies, among other things, on the practice of sports and artistic physical activities (APSA) while allowing the construction of methods to learn.

It is therefore an effective vehicle for education just like other school disciplines. It is compulsory from primary to final year and for all study courses.

<http://hdl.handle.net/123456789/474>

Regular physical and sports activity promotes good oxygenation of the brain and ensures better visual retention. It improves attention skills and stimulates learning. As a result, we are more efficient and therefore more productive in the office or school;

Mental health: according to the WHO, mental health is a “a state of well-being that allows everyone to realize their potential, to cope with the normal difficulties of life, to work successfully and productively, and to be able to make a contribution to the community.”



Academic results: Academic success is synonymous with the successful completion of an academic path (achievement of learning objectives and mastery of knowledge). Academic achievement and obtaining prior learning recognition (diploma, certificate, education certificate, etc.) are indicators of academic success. This term therefore carries an idea of yield and performance. (*CREPAS, 2016*)

BEM Exam Classes:

These are the study classes with students, who have passed the 3 years of teaching in college successfully and will finish their 4 years with a final examination in college to move to high school, This exam is the BEM, that is to say the average teaching certificate.

The study itself:

Our study took place during the school year 2022-2023, first a questionnaire was distributed at the beginning of the year during the month of February 2023, the collection of the questionnaire was done the day after the operation, then we were interested in the results of the BEM of students participating in a regular sports activity outside the school without neglecting the non-practicing students.

The questionnaire:

A questionnaire was developed and distributed on the study population, this questionnaire contains simple questions closed in relation to the hypotheses of the work and which guide the subjects well in the choice of answers.

Out of 100 questionnaires distributed on parents of students, 70, 20 were not submitted, and the remaining 10 were rejected.

The study population:

The sample of this study consists of 100 parents of pupils, the latter are educated in the same school, it is the CEM Maaraket El Djorf of el Rostomia-Chevalley belonging to the district of West Algiers.

Our choice for the school was made because of the availability of parents of students and the facilitation of access by the head of school.

The distribution of regular and non-practicing sports students and PSE students is shown in Table (1):

Table 1: Distribution of students participating in an activity and non-practicing and exempt sports students:



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	Number	Average age (year)	Play sports	Do not engage in sport	Dispensed from the EPS course
Girls	43	13.5	10	33	15
Boys	57	14.6	20	37	10
Total	100	14.05	30	70	25
Percentage	100 %	/	30%	70%	25%

Presentation, analysis and discussion of results:

1/ Classification of students:

Our population concerned by the study which consists of 100 young adolescents of both sexes girls and boys with average ages of 13.5 and 14.6 respectively, These adolescents were classified into three groups, those who practice regular sports outside school hours and those who do not practice sports and those who are completely exempt from the practice of the EPS course. 70% of students do not practice sports outside school, which is unacceptable especially at this age where movement becomes a necessity for good growth in adolescents, **“sport must be supported and promoted taking into account the individual characteristics of adolescents. It will provide a positive approach to pleasure and sensations, learning to control and coordinate, perception of risk and anticipation of danger, provided it is exercised in an appropriate setting such as school and with the support of adults.”** (*Pierre André Michaud et al , 2023*).

2/Processing the questionnaire:

Table 2: Regular practice among middle school students in relation to parent activity:

Items	Percentage of responses
Intellectual level of parents	43% in the administration 15% in education 17 liberal offices 25 without work
Sports and non-sporting parents	37% sporty 64% non-sporting

According to table (2) the majority of parents are active, which may explain the willingness of students to practice sports outside school, this will depends on the intellectual level as well as the social situation of the parents.

This can be explained that parents have understood that physical activity has beneficial effects on the health of adolescents “**The best strategy for managing obese adolescents, in combination with their psychological follow-up, is to reduce sedentary lifestyles and increase physical activity.**” (*Olivier Rey, 2018*)

Table 3: Adolescent sport

Practicing adolescents	30%
Non-practicing adolescents	70%
Adolescents with physical dispensation	25 %

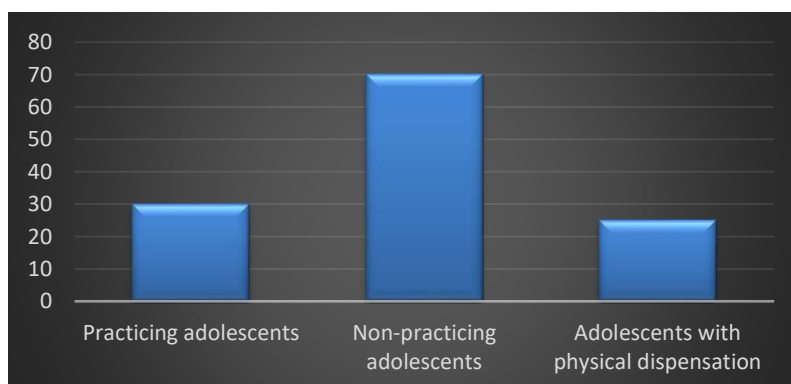


Fig 01: Adolescent sport



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A considerable number of children with a physical dispensation that must alert parents and teachers because sedentary at this age is clearly dangerous in the short and long term. **“Inactivity, inactivity, and obesity will lead to negative psychological and physical reactions due to bad experiences. These will be memorized and will lead the teenager to implement avoidance strategies to avoid reliving the uncomfortable situations he has experienced. This will reduce physical activity”** (Thibault.H et al., 2012).

Table 3: the mental state of the active and non-active student according to the parents

Active student	Motivated and in its sporty form
Student not active	Moderately stressed and unsure

The practice of physical activity and sports undoubtedly contributes to the mental development of young children by playing on stress management, self-confidence and self-esteem...

Health constraints are barriers to engaging in physical activity, This not only leads to a lack of interest in practice, but also to negative consequences on the young person's image and self-esteem at a time when the perceived self-image is important. In some cases, these difficulties can lead to stigma, ill-being or even an identity wound. This will make it increasingly difficult for adolescents to engage in the effort and perseverance of these everyday activities even at school. (Ratel.S. et al, 2014).

Table 4: The results of BEM

Practicing students	75% success at BEM
Non-practicing students	25% success at BEM

Our hypotheses have been confirmed according to the results of the BEM and we can tell ourselves that indeed active college students are the luckiest in obtaining positive results.



Recent studies indicate a link between children's cardiorespiratory capacity and their academic performance: the more physically fit they are, the better their grades are. (*L.Roux, 2020; Shephard, 1997; Coe et al, 2006*).

Demonstrating the link between physical and motor abilities, such as cardiorespiratory ability, cognitive abilities and grades, emphasizes the importance of not reducing physical activity (including physical education hours) in favour of other subjects, because it could ultimately have a negative impact on the development of the child as a whole". (*Marc Yangüez, 2021*)

Conclusion:

Sports activity is considered in children and adolescents both as a means of combating overweight and obesity, boredom, school and social disinvestment. It would also help to channel aggression, control attention, develop cognitive and social skills, adapt to new situations and gain self-esteem. These benefits would exist regardless of the discipline. (*Inserm, 2008*).

Youth who are physically active have a better self-image and lower anxiety than those who are not physically active.

Numerous studies highlight a positive link between sports practice and psychological well-being. However, the link between sports activity and well-being of adolescents is not easy to study because many confounding factors can influence sports practice as well as the feeling of well-being. However, a study shows that sports play a more important role in well-being than school variables (grade in mathematics, school atmosphere). (*Inserm, 2008*)

The practice of physical activity and sports in adolescents should be widely encouraged given its beneficial effects not only on health, but also on academic performance. Parents, teachers and health professionals should be informed.

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