

Analyzing the Nutritional Status of the Algerian Children inside School Canteens between Reality and Expectations (Exploratory Field Study)

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Abstract :

The study aims to analyze the nutritional status of the Algerian child in school canteens in four provinces. The study examines the reality of school canteens between their availability and non-availability in Algerian schools. Quantitative and qualitative analysis of the meals were analyzed the extent to which they meet the physical and mental needs of the student. The results showed that the percentages are narrow between schools containing canteens, which is estimated at 56%, and schools that do not have canteens, which was estimated at 44%. Furthermore, the study proved that is deficient in terms of calories and therefore does not meet the physical and mental needs of the student.

Keywords: school canteens, nutritional status, Algerian teacher.

1. Introduction:

Most societies are working hard to meet all the basic needs of children. Algeria, like other countries, is striving to take care of this segment, especially those of school age in terms of providing students' basic material needs while they are inside the school and the class. Thus, it went on taking the ergonomics of the departments and preparing the yards into consideration, as well as providing canteens within each school throughout the country. This is in order to facilitate the educational process and ensure the success of the educational process. It is also to serve the interests of children and to ensure their physical safety, health and cognitive development, and to ensure their adaptation to the fact that proper and balanced nutrition is an indispensable necessity for achieving school success. Indeed, proper nutrition has an important role in strengthening focus and doubling mental abilities, and positively affecting mental skills such as remembering information and absorbing lessons.

2. The problematic of the study and its considerations:

A healthy and balanced lunch consists of food that contains all the main nutrients for the safe development of the child or adolescent, according to age, gender and physiological condition, and that it is varied, appetizing, and presented in an acceptable way. In addition, being free of any chemical or biological contaminants is essential for food safety and health. Nutrition is not only a process of consumption, but it is similar to a building as it requires specific and limited sources of different materials in quantity and quality in order to fulfill the desired purpose. For humans, building tissues, their safety and protection from diseases depends on the quality of the food that their body consume. In this context, many studies came to confirm the importance of food and its impact on children. For example, the results of the experiments of the KOLVENE study and the BLOOK study confirmed the effect of modifying the consumed food, from bad to balanced and integrated, on the mental and physical abilities of children and on their behavior that turned from reckless and violent to calm and balanced. Furthermore (Begue: 96).

Through the aforementioned studies, and the explanations that confirmed the relationship between food intake, the student's failure to have a balanced morning breakfast or a complete and qualitatively complete food would negatively affect his ability to focus and comprehend. It is also reflected on the internal structure of the brain, nerve impulses, and glands that makes the student unable to focus and pay attention within the class. It is from this problem that the two researchers set out to investigate the following problematics:

- 1- What is the analysis of the nutritional situation in school canteens, between reality and expectations?
- 2- Are the type and quantity of meals that the students receive in school canteens sufficient and appropriate to meet their physical and mental needs?

Note: Since the study is exploratory, hypotheses will not be formulated.

3. The significance of the study:

- A. Identifying the status of school canteens in terms of the nutritional intake of the schooled child.
- B. Raising awareness among those in charge of the educational process of the need to pay attention to the food of students within educational institutions, and to combat malnutrition, regardless of the reasons leading to it, to ensure a strong and healthy generation, because children are the foundations on which countries rest for development.

3. Terminology of study:

3.1. Nutrition: There have been many definitions that dealt with nutrition. However, they all agreed that it is in essence the process that expresses the nutrients necessary to preserve life until it forms the final outcome of the nutritional state which in turn reflects the health status of individuals. Moreover, nutrition is defined as the set of processes through which the organism obtains the nutrients necessary for its life, and the production of energy needed for its vital processes and various aspects of its activities, and to help it grow and replace damaged tissues (ELDIB JUNDI: 127, 2013).

3.2. School food: It is the term given to the meals served to students in schools and universities. It is prepared in the school canteen or the university canteen and this system is rarely found on the tables of educational institutions, and is called the **school meal** or **school lunch** (also known as a hot lunch, school dinner, or school breakfast).

3.3. Adequate dietary intake for a school-age child: There is no doubt that students constitute an important sector of society. Their ages range between six and eighteen years, and in this period of human life the student grows physically, develops mentally, socially and emotionally. Therefore, taking care of the various forms of their health in the next stages of their life is necessary (Biyari: 2002, 34). Students' food must contain the necessary elements to achieve physical efficiency and mental ability, so that students get the ability to assimilate courses and achieve educational attainment, because a healthy mind resides in a healthy body. It is known that school-age children during the primary stage are between 6 and 12 years old, and their calorie intake is about 2,400 calories. The school canteen is required to supplement the family nutrition, ie half of it, and this means that the child, while at school, must get 1200 calories.

School food should be characterized by:

1. It should supplement the family nutrition.
2. This dietary supplement should be selective and vary according to the local dietary pattern.
3. This supplement is mainly intended to provide nutrients rich in proteins and vitamins

To apply the calorie balance, we do the following:

$$1 / \text{protein} = \frac{1200 \times 60}{100} = 180 \text{ cal} \div 4 = 45 \text{ g}$$

$$2 / \text{sugars} = \frac{1200 \times 60}{100} = 720 \text{ cal} \div 4 = 180 \text{ g}$$

$$3 / \text{fat} = \frac{1200 \times 25}{100} = 300 \text{ cal} \div 9 = 33 \text{ g}$$

Total = 1200 calories

4- The field part of the study:

4.1 Study Methodology: The nature of the study dictates to the researcher the method to be used in the research. In this study, the descriptive method commonly used in the humanities and social sciences, especially education sciences is adopted. This is because it is the most appropriate for the studied subject, from which we aimed to explore and describe the reality of school restaurants in Algeria.

4.2 The exploratory study: The two researchers conducted the exploratory study. This is with the aim of applying and experimenting with measurement tools in order to assess their validity in terms of (accuracy, clarity in formulating questions, and ease of answer) and in terms of the goal for which they were prepared and their ability to cover aspects of the subject to be researched. Therefore, the research tools are applied and their validity and reliability are tested, which make them valid and suitable for the study.

1. Geographical and temporal scope of the study:

The exploratory study is conducted in 10 schools in Oran province on July 20, 2021.

2. Characteristics of the sample according to age and gender:

The survey sample consists of 10 teachers and 10 principals who are randomly selected in order to ensure that the scale questions are easy to answer and that it fulfills the desired purpose.

3- Measurement tools and their psychometric properties:

A- Scale of food intake in school canteens:

1. Sources of building the scale: There are many foreign and Arab scales, forms, and questionnaires that allow researchers to identify the quality of food consumed by people and to identify its suitability for different ages and genders in terms of quantity and quality. The two researchers modified this scale to match the topic and sample of their research, through the following steps:

1- Reviewing the various research and studies concerned with the food consumed by children and analyzing its quality and quantity, and its suitability for their age and daily activity. Among these studies:

The studies presented by ERNESTO POLLITT and colleagues on "nutrition education collection", which have many studies and research under the supervision of UNESCO. All of these studies provide measures that seek to identify the contents of the nutritional components obtained by the child and adolescent, and how to analyze them. Its aim is to identify the quality of food that the child and adolescent obtain at home and school, and analyze it quantitatively and qualitatively according to the needs of each group.

2. Psychometric properties of the scale: In order for the scale to be valid for application, its validity and stability must be tested in order for it to be applied in the basic study:

A - The validity of the scale: It has been relied on Inter-rater reliability (IRR) to ensure the sincerity of the scale, as their number reached (03) reviewers, all of whom are doctors (Dr. **Brached, Ablaque, Bouhend**). This depends on the nature of the topic to be studied:

The two researchers obtained the doctors' guidance and assistance in modifying the form in line with the Algerian society and the nature of the subject to be studied. They made sure that the form is easy to understand in terms of wording and content in line with the research sample represented by all workers within educational institutions at all levels (primary, intermediate, secondary). They also made sure that the form enables them to accurately identify the nutritional intake of children while they are at school. On this basis, the reviewers approved the quality of the final revised form and on all the questions included therein:

Table No. (2) the type of questions and the percentage of reviewers' approval of the final form

The scale's paragraphs type	agreement ratio
Questions about the position of the respondent on the form (so that s/he must be a member of the educational staff (teacher, director, inspector, consultant, administrative worker, and other options)	100%
Questions about the state for sample classification	100%
Questions about the level of the institution to which the respondents belong (primary, intermediate, secondary), because the level determines the age and nutritional needs appropriate for them.	100%
A question about the presence or absence of a school canteen	100%
A question about the type of meal the restaurant provides (cold or hot)	100%
Questions about the ingredients of the cold meal if the establishment provides it, and about the ingredients of the hot meal if the establishment provides this type of meal	100%

Source: Prepared by the two researchers

Through the form, the percentage of school canteens in some schools, the quality, the quantity and the components of the meals served within them are identified. This enables us to identify the quantity and quality of the nutrition that students receive in schools.

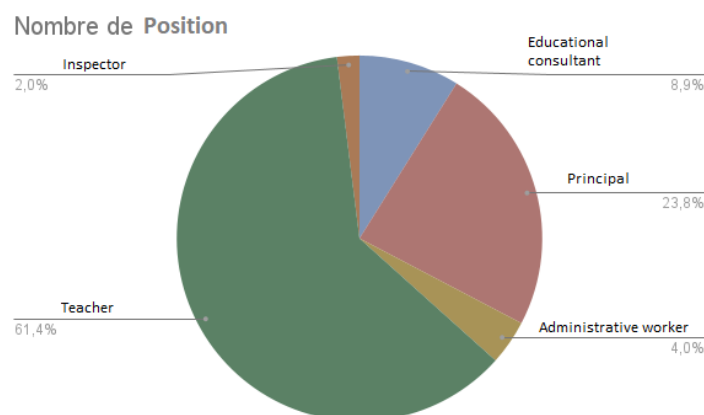
B- Scale stability: The stability is calculated by re-application, according to the type and nature of the form that aims to classify the sample in terms of nutritional intake, the results of which are analyzed in terms of quantity and quality. The two researchers applied and re-applied the form on the same sample after a week, and the values of the correlation coefficient between the degrees of the first application and the degrees of the second application were set, which is estimated at 0.69. The latter is a high-reliability coefficient that allows applying the scale in the basic study.

After verifying the validity and reliability of the scale, we can rely on the scale in the basic study.

3.3- Basic study: The basic study is conducted during the period from (20 July to 20 August) in several states of western Algeria. The two researchers relied on the electronic form in order to analyze the situation of school restaurants and get acquainted with the quality of the meal obtained, as well as analyzing it in terms of quantity and quality. Sample characteristics will be presented by province and respondent position as shown in the following charts:

A- Characteristics of the sample according to the position the respondent occupies at the present time:

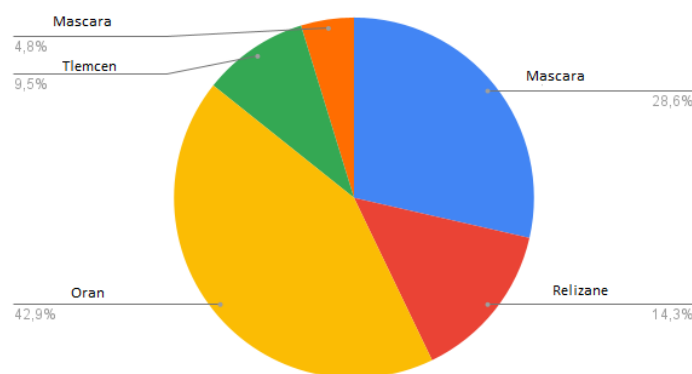
Chart (1) shows the basic sample characteristics by position



According to Chart No. (1), it becomes clear to us that the respondents to the questionnaire belong to the educational staff, as the sample represented 61.4% of teachers, which is the largest percentage. The sample also consists of 23.8% of principals and educational consultants whose percentage is estimated at 8.9%. In addition, there is 4% of the administrative workers and 2% of the inspectors in the sample ,which also contains 102 respondents.

B- Characteristics of the sample according to the province:

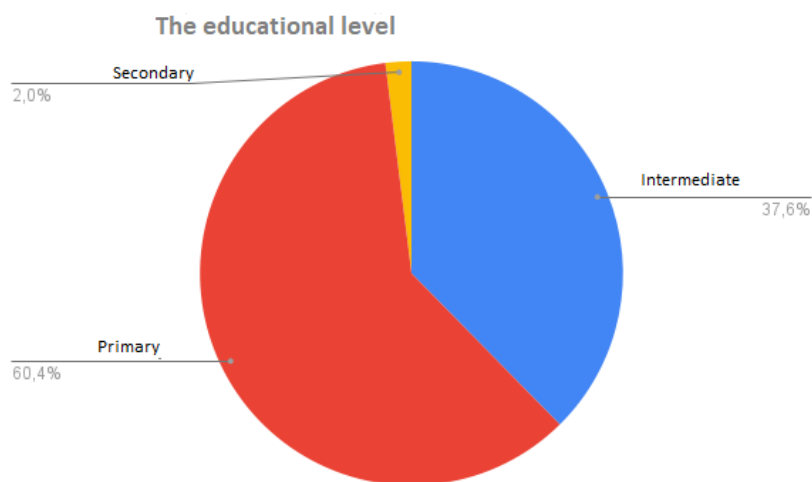
Chart No. 2 sample characteristics by province



According to Chart No. 2, the sample of the exploratory study is distributed over 4 provinces of western Algeria, represented in the provinces of Oran, Mascara, Relizane and Tlemcen. This is according to the following percentages: the response rate in Mascara is estimated at 33.4%, while the answers are estimated at 42.9% in Oran, whereas the answers in Relizane are estimated at 14.3%, while in the state of Tlemcen the answers are 9.5%.

C / Characteristics of the sample according to the educational level of the institution to which it is affiliated:

Chart No. "3" the characteristics of the sample according to the educational level of the institution to which it is affiliated



According to Chart No. 3, it appears that the research sample is distributed among workers affiliated with 3 educational levels distributed as follows: The percentage of those affiliated to the primary level was estimated at 60.4%, while the workers at the intermediate level were estimated at 37.6%. The lowest percentage of respondents belongs to the secondary level, with an estimated percentage of 2%.

Analysis and discussion of the results

1- The first problematic: What is the analysis result of the nutritional situation in school canteens, between reality and expectations?

In order to answer this question, we will present the percentages of schools containing school restaurants, as well as the type of meals served in each school that contains a restaurant, which are shown in the following table:

Table No. 3 the results of the first problematic

	Yes	No
Availability of canteens in schools	55%	44%
	Cold meal	Hot meal
Meal type	64.2%	35%

Analysis and discussion of the first hypothesis:

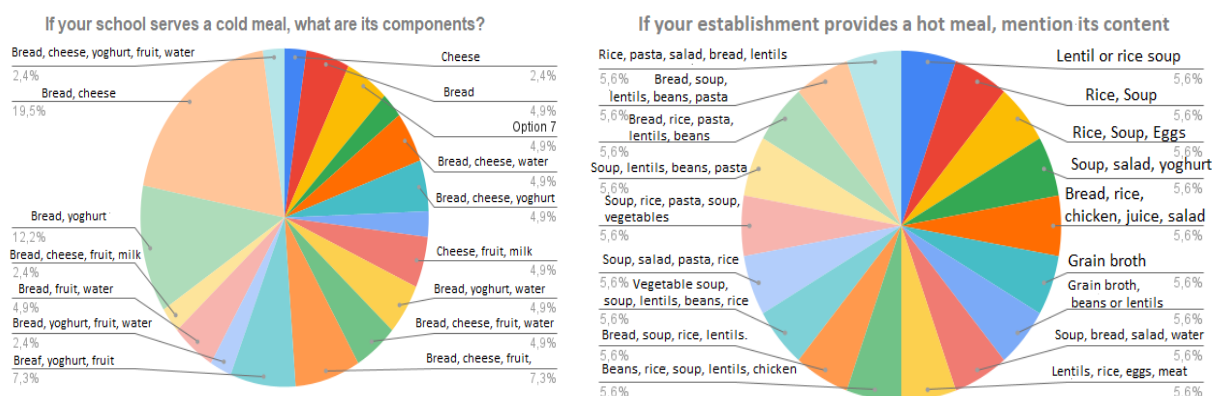
Through the results shown in Table No. 3, we will be able to analyze the situation of school canteens through the data related to availability of restaurants and through the quality of the meal provided, in the having a canteen within the school. As the results show, it is clear that 55% of the schools contain canteens, and 44% of the schools do not have canteens. Thus, through analyzing the results, we note that the percentages are close, and the percentage of unavailability of canteens in schools is a dangerous and shameful percentage. In light of the today's world developments, when analyzing the situation of Algerian school canteens between the reality and the expectation, it is found that Algeria, unfortunately, has not solved the problem of school canteens, especially since most of the Algerian society belongs to middle class, and most children do not get breakfast. Despite the funds allocated by the state to supply school restaurants across all educational institutions, the problem of cold meals remains. This is evident in many schools nationwide, as cold meals

still impose themselves on the pretext of the lack of canteens, and because of the lack of manpower. Many school canteens across different areas have been closed for years and this reflects images of suffering, especially in winter. Here, the first and last victims are schoolchildren. www.djazairess.com According to the report of specialists affiliated with the Ministry of National Education, they urged on many occasions the directors of educational institutions to take care of the food provided to students and to avoid cold meals, considering it as one of the main factors for the school dropout' shigh rate, which exceeds 500 thousand dropouts annually. On the other hand, Dr. Saidi, a pediatric in a private clinic, confirms that the child's failure to eat a complete meal poses a great danger to his/her health and threatens his/her life. She also indicated that eating breakfast and lunch has beneficial and positive effects on human mood and cognitive performance in the afternoon. In the absence of school canteens, we expect that a group of children will not receive healthy food, especially for those whose both parents are working. In this case, children turn towards consuming fast food outside. Here, the National Authority for Health Promotion and Research sounded the alarm, according to the studies conducted on this subject. Although this study is conducted on a small sample, it remains a representative of an aspect of the suffering experienced by most schools across all states of the country.

The second problematic:

The problematic: Are the type and quantity of meals that students get in school canteens sufficient and appropriate to meet their physical and mental needs?

Chart No. (4) and (5) the components of the cold meal and the hot meal



A nutritionist (Dr., A. Bouhendi) was relied upon in order to analyze the quantity and quality of the components of the meals served, whether through the cold meal or the hot meal, and to calculate the calories by approximation and to decide if these meals provide the necessary nutritional needs.

According to the results shown in the two charts, the content of meals is almost the same at the level of all schools, whether with regard to the hot meal or the cold meal. Unanimously, the cold meal that children get is cheese or yoghurt with a piece of bread. When analyzing the cold meal, we find that it is a poor meal that does not contain the nutrition needed by a schooled child. Moreover, the meal lacks the most important ingredients that the breakfast meal must contain so that the student can follow the lessons with all energy, vitality and focus. According to doctors and specialists, breakfast should contain fat, sugar and water. Unfortunately, this is not provided in the cold meals served in some Algerian schools. In the absence of natural sugars such as those found in fruits or in dry fruits and water, the child's body will need energy and carbohydrates, iron and vitamins that enable it to focus in the lesson and not feel tired and exhausted. This is what is missing from the meals shown in the chart.

As for hot meals, they also contain almost the same ingredients across all the responding schools in this study. The doctor analyzed them and characterized them as moderate meals, but they need important and very necessary factors, namely meat and fruits, which are very necessary ingredients through which the child gets the needed calories. From this point of view, the doctor calculated the calories obtained by approximation and compared them with what students should obtain, and they are shown in the following figure:

Age	Calories should be obtained	Calories obtained
From the age of (6-10)	1800.200 calories	From 1400.1700
From the age of (11-14)	2200.2500 calories	From 1400.1800
From the age of (15-18)	2300.3000 calories	From 1400.2000

Thus, by analyzing the calories of the food components obtained and comparing them with what must be obtained, it is found that these meals are nearly fixed, they do not change by levels, that is, they do not meet the nutritional needs which vary according to the age and level of the students. Therefore, it does not meet the requirements for each level's growth and does not provide the students with the necessary energy to enable them to focus well and keep pace with the lesson. The lack of calories makes the student tired and want to leave the classroom, sleep and suffer anxiety and unjustified discomfort. These factors are considered by educational specialists to be the most important factors hindering the lesson and causing students to fail.

When analyzing the type and quantity of nutritional components obtained, we find that they are very deficient and do not provide the necessary nutrients, which negatively.

Conclusion:

Through this study, we conclude that the situation of school canteens in Algerian society suffers from a great shortage that needs to be re-planned and organized. The lack of school canteens at 44% is a percentage that must be looked at, as it is considered a black point in the educational field. In the rich country of pride and dignity whose size is nearly the size of a continent, it is shameful to find such a deficiency. The study proved that even schools that contain restaurants are also in need of study and restructuring. In addition, the unbalanced meals provided to students need also to be studied by specialists who direct those in charge of running these canteens. This is through organizing meals to be aligned with what the student's body and mind needs, as well as preventing harmful and toxic food contents, and this was stressed by many Arab and foreign studies that confirmed that food is the fuel of life.

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