

**Subjective Global Nutritional Assessment of
Children in primary school children.**

التقييم الغذائي العالمي الذاتي للأطفال في المدارس الابتدائية

Alyaa Ahmed abdel Karim , MSc. *

Al-Musawi, Khatam M.,Professor **

*** MSC student, Department of Pediatric Nursing, College of
Nursing, University of Baghdad, Iraq. Email:
alaia.abd2304m@conursing.uobaghdad.edu.iq.**

**** Professor University of Baghdad, Pediatric Nursing
Department, College of Nursing, Iraq. Email:
dr.khatam@conursing.uobaghdad.edu.iq**

Subjective Global Nutritional Assessment of Children in primary school children.

Subjective Global Nutritional Assessment of Children in primary school children.

التقييم الغذائي العالمي الذاتي للأطفال في المدارس الابتدائية

Alyaa Ahmed abdel Karim , MSc. *

Al-Musawi, Khatam M., Professor **

المستخلص

الخلفية: إن الحالة الغذائية للأطفال في سن المدرسة تؤثر على صحتهم مما يسبب نقص التغذية ويمكن أن يؤدي إلى التقزم والهزال ونقص المغذيات الدقيقة، مما قد يضعف النمو العقلي والجسدي لدى الأطفال حديثي الولادة والأطفال الصغار ويزيد من خطر الإصابة بالأمراض والوفاة المبكرة. **الاهداف:** تحديد التقييم الغذائي الشامل الذاتي للأطفال في سن المدرسة ومعرفة العلاقة بين التقييم الغذائي الشامل الذاتي للأطفال وبياناتهم الديموغرافية.

منهجية البحث: أجريت دراسة وصفية في جميع المدارس الابتدائية في مدينة الديوانية، وتم اختيار عينة ملائمة من (٤٠) طفلاً من أطفال المدارس الابتدائية. وقد تم تصميم الاستبانة وتألفت من جزأين: الجزء الأول يتضمن البيانات الديموغرافية للأطفال، والجزء الثاني يتضمن مقياس التقييم الشامل الذاتي. وتم تحديد موثوقية الاستبانة من خلال دراسة استطلاعية وصلاحياتها من خلال لجنة من (12) خبيراً. وتم جمع البيانات عن طريق الاستبانة. وتم وصف البيانات إحصائياً وتحليلها من خلال استخدام إجراءات التحليل الإحصائي الوصفي والاستدلالي.

النتائج: وتشير النتائج إلى أن ٧٥٪ من الأطفال في الفئة العمرية ٩-١٢ سنة، مع نسبة عالية من الذكور. ٥٢,٥٪ من الأطفال لديهم مؤشر كتلة جسم طبيعي، في حين أن ٢٠٪ يعانون من زيادة الوزن. وتظهر البيانات أن ٥٥٪ من الأطفال يعانون من سوء التغذية. وهناك ارتباطات مهمة بين سوء التغذية والعمر ودخل الأسرة، حيث أن الفئة العمرية الأصغر والأسر ذات الدخل المتوسط هي الأكثر تضرراً. ولا توجد ارتباطات مهمة بين سوء التغذية والجنس أو مستوى تعليم الوالدين.

الاستنتاجات: هناك علاقة سلبية قوية بين الحالة الغذائية العامة للأطفال ونتائج الفحص البدني للأطفال المدارس. تشير القيم الاحتمالية = ٠,٠٠١ إلى أن هذه العلاقة ذات دلالة إحصائية، مما يعني أن هناك عوامل محتملة تؤثر سلباً على كل من التغذية والصحة البدنية للأطفال.

Subjective Global Nutritional Assessment of Children in primary school children.

التوصيات: أوصت الدراسة بضرورة إعداد برامج تدخلية غذائية تهدف إلى تحسين الوضع الغذائي للأطفال في المدارس والمجتمعات بشكل عام، لضمان حصولهم على التغذية الكافية.
الكلمات المفتاحية: التقييم الغذائي، التقييم العالمي الذاتي.

Abstract

Background: the nutritional status of school aged children impacts their health causing Undernutrition can lead to stunting, wasting, and micronutrient deficiencies, which can impair mental and physical development in newborns and young children and raise the risk of morbidity and early death

Objectives: Determine the subjective global nutritional assessment of children in school aged children and find out the relation between the subjective global nutritional assessment of children with their demographic data.

Methodology: A descriptive study was conducted in all primary schools in Diwaniyah city. Convenience sample of (40) primary school children was selected. The questionnaire was designed and composed of two parts: The first part includes the children demographic data, and their second part Subjective Global Assessment Scale. The reliability of the questionnaire was determined through a pilot study and the validity through a panel of (12) experts. The data were collected by questionnaire. The data were described statistically and analyzed through the use of descriptive and inferential statistical analysis procedures

Results: The results indicate that 75% of children are in the 9-12 age group, with a high percentage of males. 52.5% of children have a normal BMI, while 20% are overweight. The data show that 55% of children are malnourished. There are significant associations between malnutrition and age and household income, with the youngest age group and middle-income families

Subjective Global Nutritional Assessment of Children in primary school children.

being the most affected. There are no significant associations between malnutrition and gender or parental education level.

Conclusion: There is a strong negative relationship between the general nutritional status of children and the physical examination results in school children. The P-values = 0.001 indicate that this relationship is statistically significant, which means that there are likely factors that negatively affect both the nutrition and physical health of children.

Recommendations: The study recommended in the need for nutritional intervention programs that aim to improve the nutritional status of children in school and communities in general, to ensure that they receive adequate nutrition.

Keywords: Nutritional Assessment, Subjective Global Assessment.

Introduction:

Proper nutritional consumption and physical exercise are essential for sustaining optimal growth and health in children. By positively influencing adiposity and physical fitness, consistent physical exercise and a balanced diet are essential for avoiding and managing excessive body weight (1).

A nutrient is a substance that supplies nourishment is essential for growth and upkeep of the organism. Nutrients can be categorised into seven groups: carbohydrates, proteins, fats, fibres, minerals, vitamins, and water. All groups are vital for the proper functioning of the body. Macronutrients provide energy, whereas micronutrients are essential for metabolic reactions. Water is one of the most essential nutrients; it functions as a solvent, a transport medium, and a substrate for significant metabolic activities. The daily

Subjective Global Nutritional Assessment of Children in primary school children.

recommended intake (DRI) of water is contingent upon age, sex, weight, activity level, ambient temperature, and humidity (2).

Inadequate nutrition is more likely to affect children. Several factors contribute to this: The first poor nutritional store the child has, the lower their energy stores. This implies that they are only able to survive hunger for brief periods of time. The second explanation is the high dietary requirements for growth. Children need the most nutrients during infancy because of their rapid growth during this time (3).

All types of malnutrition continue to be a global health concern, with extremely vulnerable populations being affected in many parts of the world. In 2016, undernutrition undermines the healthy development of children's bodies and minds, limiting their capacity to learn and become adults, contributes to the deaths of about 3 million children, and endangers the futures of hundreds of millions. Inadequate nourishment not only compromises the physical and mental well-being of individual kids but also weakens the foundation of their communities by keeping them from reaching their full potential (4).

Methodology:

Design:

Descriptive studies the research design was used and implemented to achieve the study objective of conducting a Subjective Global Nutritional assessment of children in primary school children at AL-Diwaniyah City.

Setting:

The study was conducted in all primary schools in Diwaniyah city. A total of primary school children (PSC) of Diwaniyah city (115) main PSC distributed in

Subjective Global Nutritional Assessment of Children in primary school children.

Diwaniyah city was selected 10% from each school , and randomly selected for the purpose of the study .

Sample:

Non-probability (convenient) sample of (40) primary school children.

Ethical consideration:

A private meetings was scheduled with each school principle in order to explain the study and obtain permission. The names of students were not obtained.

Another meeting was held with the students in each classes separately as planned, in order to inform them of the study and its purpose. All students were given full information about their mission in this study. All participants in the study were informed that the results of the study would be for the purpose of the study only. All participants were Informed that everyone here has the right to participate.

Study instrument:

An assessment tools used to assess the nutritional status among children (schools Children), the final copy of it include comprises two parts.

Part I: Child Socio-Demographic Characteristics

It is measured subjectively and include nine variables: age, gender, and level of education. of children, income level of the family, level of education of the parents or caregiver, hair loss, meals do eat during the day, broken nails, and many meals do you take during the day.

Subjective Global Nutritional Assessment of Children in primary school children.

Part II: Subjective Global Assessment Scale

Reliability of the study

the determination of the reliability of the pilot study, this results showed The internal consistency between items was determined by using Cronbach's alpha coefficient. The Cronbach's Alpha analysis a very good evaluation for "global nutritional assessment" and excellent evaluation for "physical examination" reflecting that the questionnaires had adequate level of internal consistency and equivalence measurability.

Data collection

Data were collected during the period 1st December to 30th December, 2024. The researcher collected data from students for the current study using a questionnaire as a data collection tools. Before distributing the questionnaire, the researcher interviewed the student to provide an introduction and describe the purpose of the study in a simple way. The questionnaire takes 15 to 20 minutes to complete and data are collected every day from 8:30 a.m. to 12:30 p.m., 1:00 p.m., and 4:00 p.m.

Results:

Table (1): Distribution of the studied group according to their Socio-demographic Characteristics

No.	Characteristics	School	
		f	%

Subjective Global Nutritional Assessment of Children in primary school children.

1	Age (year)	6 – 8	10	25
		9 – 12	30	75
		Total	40	100
		Mean± SD	9.5 ± 1.7	
2	Sex	Male	24	60
		Female	16	40
		Total	40	100
3	Family monthly income	Low	14	35
		Moderate	20	50
		High	6	15
		Total	40	100
4	Education	Pre-primary	0	0
		1 st or 2 nd grade	14	35
		3 rd or 4 th grade	13	32.5
		5 th or 6 th grade	13	32.5
		Total	40	100

No.	Characteristics	School		
		F	%	
5	Parents' education	Doesn't read & write	7	17.5
		Primary school	11	27.5
		Secondary school	6	15

Subjective Global Nutritional Assessment of Children in primary school children.

	Diploma	2	5
	Bachelor	9	22.5
	Ohers	5	12.5
	Total	40	100

No: Number, f: Frequency, %: Percentage, SD: Standard deviation

The analysis in table1 shows that most children within the 9–12 age range (75%), The gender distribution is school group has a higher proportion of males (60%) compared to females (40%).Regarding Family Monthly Income, the majority come from families with moderate income (50%), followed by low income (35%), and high income (15%).The education distribution reveals students are more evenly distributed across grades. Concerning Parents' Education Levels, a significant contrast is observed in parents' education levels. the school group shows a more varied distribution, with the largest group having primary school education (27.5%), followed by those who cannot read or write (17.5%).

Table (2) : Evaluation of Global Nutritional Assessment for Children

No.	Global Nutritional Assessment	School (N=40)	
1	Body Mass Index	f	(%)
	Underweight	11	27.5
	Normal	21	52.5
	Overweight	8	20
2	Dietary Intake	f	(%)
	Intake poor; no change	1	2.5

Subjective Global Nutritional Assessment of Children in primary school children.

	Intake poor; decreasing	11	27.5
	Intake poor; increasing	1	2.5
	Intake borderline; decreasing	9	22.5
	Intake borderline; increasing	18	45
3	Gastrointestinal symptoms	f	(%)
	None; intermittent	29	72.5
	Some (daily > 2 week)	10	25
	All (daily > 2 week)	1	2.5
4	Functional Capacity	f	(%)
	No dysfunction	24	60
	Difficulty with ambulation / normal activity	16	40
	Bed / chair-ridden	0	0

the table 2 presents the evaluation of global nutritional assessment; in term of Body Mass Index, the school group has a higher percentage of children with normal BMI (52.5%) Interestingly, overweight children are less prevalent (20%). In term of Dietary Intake, the highest percentage of children exhibit borderline dietary intake with an increasing trend 45% for the school . However, a significant proportion of children (27.5%) report poor dietary intake with a decreasing trend, In term of Gastrointestinal Symptoms, most children 72.5% i. However, daily symptoms lasting more than two weeks are more common in the school children (25%) . In term of Functional Capacity, a greater proportion of children in the school group (60%) exhibit no functional dysfunction

Table (3) Overall Evaluation of Global Nutritional Assessment (Malnutrition) for Children

Subjective Global Nutritional Assessment of Children in primary school children.

Nutritional status	f	%	M	SD
	Normal	6	15	4.43
Mild malnutrition	22	55		
Moderate malnutrition	12	30		
Severe malnutrition	0	0		

Table 3 indicates that the highest percentage of children fell under the category of mild malnutrition, accounting for 55% in schools children (M = 4.43, SD = 1.693). Moderate malnutrition affected 30% of children

Table (4) Association among Global Nutritional Assessment (Malnutrition) for Children in Schools with their Sociodemographic Variables

Variables	Global Nutritional Assessment		
	Mean	SD	Association
Age (year)	6 – 8	5.10	$r^s = -.324$ P-value= .042 Sig= S
	9 – 12	4.20	
	Total	4.43	
Sex	Male	4.12	U= 144.500 P-value= .183 Sig= N.S
	Female	4.87	
	Total	4.43	
Family monthly income	Low	3.57	H = 8.342 P-value= .015 Sig= S
	Moderate	5.20	
	High	3.83	
	Total	4.43	
Education	Pre-primary	4.36	H = 2.021 P-value= .346 Sig= N.S
	1 st or 2 nd grade	4.92	
	3 rd or 4 th grade	4.00	

Subjective Global Nutritional Assessment of Children in primary school children.

	5 th or 6 th grade	-	-	
	Total	4.43	1.693	
Parents' education	Doesn't read & write	5.14	1.952	H = 5.393 P-value= .370 Sig= N.S
	Primary school	4.00	1.342	
	Secondary school	4.67	2.066	
	Diploma	6.00	1.414	
	Bachelor	4.44	1.810	
	Others	3.40	1.140	
	Total	4.43	1.693	

Table 4 shows the association between global nutritional assessment (malnutrition) and sociodemographic variables for children in schools. Significant associations were found between malnutrition and age ($r^s=-0.324$, $P=0.042$), with younger children (6-8 years) exhibiting higher malnutrition scores (mean = 5.10) compared to older children (9-12 years, mean = 4.20). Additionally, a significant association was observed with family monthly income ($H=8.342$, $P=0.015$), where children from families with moderate income had the highest malnutrition scores (mean = 5.20), followed by those with low income (mean = 3.57) and high income (mean = 3.83). No significant associations were found between malnutrition and sex ($P=0.183$), education level ($P=0.346$), or parents' education ($P=0.370$).

Discussion:

Part-I: The finding of the present study showed in table (3-1) reveal that the high non-orphanage (primary school children) children is located in age group of (9-12) years . This finding similarity with cross – sectional study by Aser and Mohammed (2020) , Assessment of Nutritional Status and some Associated Factors among Elementary School Children in Babylon Governorate to found that the average age children was (10-11) years , the mention that majority of the study sample (32.4%) were with age group (10-11) years (5) .

Subjective Global Nutritional Assessment of Children in primary school children.

Furthermore , most non-orphanage children sex is male (60%). This result is agree with comparative study done by Samantaray .(2020) (6).

Moreover, about Family monthly income half of the study participant non-orphanage was moderate This result was supported by descriptive cross-sectional study applied on 120 caregiver-child pairs Family income showed positive correlation with the nutritional status of children (7).

Regarding education level of 35% (14) reported to be 1st or 2nd non-orphanage children reported to education level of orphanage children in accordance with study of Riaz et al (2021) in which, 58% were studying in primary classes (8).

The finding of the present study mention that parents education (non-orphanage children is primary school (27%) ,These results not consistent with study done by Habsi and Ahjil (2021) to evaluate the self-esteem of children living with their parents of secondary schools in al-Rusafa comparative to children living in orphanages which is located in Rusafa, Baghdad (9)

Part-II: The results as shown in table of the study on hand showed that the majority of the studied Global Nutritional Assessment for non orphanage Children had a mild malnutrition the study supported by Reddy et al showed 32.3% were underweight (10).

Part-III: Table show non- orphanages significant association between sex,caregiver education and education of the child compare with non orphanage children significant association with age and monthly family income and non significant with sex ,children education and parent education .These finding supported by Srivastava et al (2012) this findings reveal the nutritional status was positively correlated to age indicating poor nutritional status of younger children (11) .

Subjective Global Nutritional Assessment of Children in primary school children.

Conclusion: The findings indicate an urgent need to address malnutrition among children, requiring effective steps to improve their nutritional status.

Recommendations:

It is necessary to conduct future studies that include a wide and diverse sample of participants from different schools in the governorates of Iraq and to repeat these studies to obtain more accurate results from an external perspective.

References:

- 1.Semiz Z, Kabali S, Ertaş Öztürk Y. Intuitive eating, diet quality, and nutritional status of vulnerable children living separated from their families: A pilot study. *Acta Alimentaria*. 2024 May 16.
- 2.Hasni D, Ellia R, Khalila AS, Anggraini D. The Relationship Between Diet and Nutritional Status Balance in Adolescents. *Nusantara Hasana Journal*. 2023 Nov 7;3(6):159-73.
- 3.Wishel OF. Feeding problems in children with congenital heart diseases in Nasiriya Heart Center. *Iraqi National Journal of Nursing Specialties*. 2014;27(1).
4. Routray,S. Meher BK, Tripathy R, Parida SN , Mahilary al et , , , 3.
- 5.-Asser AJ, Mohammed HJ. Nutritional Status of Primary School Children in Babylon Governorate. *Medico-Legal Update*. 2020 Jan 1;20(1).
- 6.Samantaray K, Das S, Mandal S, Sen R. A comparative study to assess the psychosocial development between non-orphan and orphan children. *European Journal of Molecular & Clinical Medicine*. 2020;7(11):2515-8260.
- 7.Reddy M, Ramya V. Morbidity profile of children residing in orphanages--a cross-sectional study in Chitradurga, Karnataka. *International Journal of Medical Science and Public Health*. 2017 Jul 1;6(7):1196-201.

Subjective Global Nutritional Assessment of Children in primary school children.

8.Ferdoushi A, Rana MM, Mahmud MS, Datta D, Akter F .Health and Nutritional Status of the Selected Orphanage Children in Tangail City. Med 2014; 3(1): 11-15

9.Riaz M, Azam N, Mahmood H, Asif R, Khan N, Mughal FA. ``. 2021 Dec 31;71(6):2139-43.

10.Habsi RK, Zaid WA. Self-esteem of Children Living with their Parents for Secondary Schools in AL-Rusafa: Comparative Study to the Children Living in Orphanage. Indian Journal of Forensic Medicine & Toxicology. 2021 Oct 1;15(4):3108-13.

11.Srivastava, A., Mahmood, S. E., Srivastava, P. M., Shrotriya, V. P., & Kumar, B. (2012). Nutritional status of school-age children-A scenario of urban slums in India. Archives of public health, 70(1), 8.