

A Study of Food Habits and some Growth Aspects of Libyan Children

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ABSTRACT

This study was conducted during May and June, 1980 to investigate the food habits and some of the aspects of physical growth and socio-psychological development of elementary school children in Libya. It was focused on the study of children's daily food intake, their body measurements, some neuromuscular functions, and their level of aspiration and independence. The subjects for this study were 6-8-year-old children selected from five schools in Tripoli, Libya. From the total number of 264 children, 171 were girls and 93 were boys.

For the collection of data regarding children's physical growth, physical measurements were taken and two tests for determining neuromuscular co-ordination were given. For data concerning children's socio-psychological development, interview guide and projective tests were used.

The findings revealed that the body measurements indicated a good developmental sequence as compared with the Harvard Standard (16). Mode of children's food habits indicated that lunch was the main meal of the day, breakfast and dinner were light meals, but adequate. The daily dietary intake of children as compared to the recommended dietary allowance of U.S. National Research Council for this age group was acceptable (2). In the projective tests for ascertaining socio-psychological development, it became apparent that there is considerable achievement orientation in the children. In the teacher's rating for children's leadership roles in class group activity, it was evident that as a whole between one-quarter and one-third of children (girls as well as boys) showed leadership qualities.

INTRODUCTION

The need and importance of research in the field of child development lies in the fact that very little data is available on the growth and development of Libyan children. This study was conducted during May and June, 1980. Its purpose was to investigate the food habits and some of the aspects of physical growth and socio-psychological development of elementary school children in Libya. It was focused on the study of children's daily food intake, their body measurements, neuromuscular functions, and their level of aspiration and independence.

In the light of theoretical and empirical literature, it was observed that food habits play a very important role in nutritional problems. The most important facet of

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inadequate dietary intake in human terms is modification of behaviour. It is clearly evident that nutritional deficit during the vulnerable period effects the brain and damages behavioural development, the result, presumably, of physical changes in the brain (9). Research evidence also indicates that early independence training and encouragement leads to the development of a high level of aspiration in children (1,4,11,13,18) and further, that the aspiration or need-achievement is negatively related to general rigidity and positively related to permissiveness in parental control (8,14,17).

Cultures concerned with achievement are likely to stress independence training in childhood, which in turn produces a higher level of achievement motive in members of the culture, as reflected in their popular literature (5,11,12). The aspect of parents' education is another factor that influences children's level of aspiration (3,6,15). Relationships have been found between achievement, motivation and accomplishments (10,12).

This study should prove valuable both for educationists and for parents.

MATERIALS AND METHODS

The universe for this study was five schools in Tripoli, Libya. The schools that were selected were located in different sections of Tripoli, comprising high-income residential areas, upper-middle and middle-income residential areas and lower-middle income residential areas. These schools draw students mostly from their respective residential areas. It was an indirect measure to select a number of children belonging to different social strata. The first and second class in all these schools was selected, age range of children being 6-8 years. From the total number of 264 children, 171 were girls and 93 were boys.

For the collection of data regarding the children's physical growth, physical measurements (weight, height, proportion of torso and legs and head size) were taken then recorded and mean averages calculated. To determine the degree of ability and control that they exercised over their neuromuscular co-ordination, two tests, skipping and threading beads were given to each child. They were rated according to the points and scores they achieved in the categories of good, average and below average.

For dietary intake, children (each child separately) were asked to recall both their everyday food and food taken by them on the previous day. Information about each child's food consumption was recorded, and an approximate mode of intake of nutrients was calculated from the total food intake.

From the collection of data concerning children's socio-psychological development a structured interview guide for children and a structured questionnaire for school teachers was developed. Care was taken to include questions which tapped the key information for ascertaining each child's aspiration and independence levels. The questions in the interview guide and questionnaire were so structured, that each question was to be answered in terms of three response categories. Each child was interviewed and his/her responses recorded. Questionnaires were given to the teachers and they were asked to fill in one form for each student, giving her observation of each child's characteristics.

Besides this, projective tests were developed, two tests each for determining the level of aspiration and independence, namely: building-bricks task (assembling and lego) and story-completion task; clay-modelling task and toy assembly task. These tests were used to ascertain the children's level of aspiration and independence in an indirect way, by giving them an opportunity to project their ability and willingness to attempt the difficult task in play. Each child was rated four times on four separate tasks to bring about greater reliability of data.

RESULTS AND DISCUSSION

1. Physical development

On the basis of findings, it became apparent that the body measurements of children indicated a good developmental sequence. Height, weight, head circumference and other measurements were compared with the Harvard Standard and it was found that the respondent's (girls and boys) growth curves were almost similar to the measurements given in the Harvard Standard (16). Male children in all three age groups, 6, 7, and 8 years had slightly more height, weight and head circumference as compared to the female children (Table 1).

Table 1 Children's physical measurements (Mean Average)

Age sex	Weight kg	Height cm	Length of torso cm	Length of legs cm	Head size cm
6 years					
Girls	22	110	40	52	51.5
Boys	22.5	119	42	55	53
7 years					
Girls	22.5	117	40.4	57	52
Boys	24	126	43	62	53.5
8 years					
Girls	25	120	41	58	52.4
Boys	27	127	44	63	54.3

Average weight of girls and boys aged 6, 7, and 8 years were 22 kg, 22.5 kg, 22.5 kg, 24 kg, 25 kg, and 27 kg respectively.

The average height of girls and boys at the age of 6 years was 110 cm and 119 cm respectively. At 7 years 117 cm and 126 cm and at 8 years 120 cm and 127 cm respectively. Length of legs of male and female children was more than the length of torso, which indicates an adequate physical growth pattern of children.

2. Food habits

Mode of children's food habits indicated that lunch was the main meal of the day, breakfast and dinner were light meals but adequate. The daily dietary intake of children as compared to the recommended dietary allowance of U.S. National Research Council for this age group was acceptable. The intake of protein, calcium, iron, vitamins A and B were satisfactory. But intake of vitamin C seemed lower and caloric intake was slightly higher as compared to RDA (2).

3. Aspiration level

In the projective tests for ascertaining aspiration level of children, the results of the lego-building task showed that less than half the girls as well as boys were rated as

Table 2 Mode of children's dietary intake.

Breakfast	Egg or cheese with a cup of milk or tea.
Midmorning snack	Tuna or egg sandwich.
Lunch	Salad, white bread: and koskosi or Roshta or Bezzin: or Macaroni or rice with a meat and vegetable dish.
Dinner	Sandwich with milk or tea (light meal)

Table 3 Children's level of aspiration
A. Building-bricks task (Lego building)

Aspiration level		6 years old		7 years old		8 years old	
		F	%	F	%	F	%
High	Girls	16	48.4	31	47.7	30	41.0
	Boys	12	36.4	12	40.0	14	46.7
Average	Girls	12	36.4	30	46.1	32	44.0
	Boys	17	51.5	12	40.0	8	26.7
Below Average	Girls	5	15.2	4	6.2	11	15.0
	Boys	4	12.1	6	20.0	8	26.6

B. Story-completion task

Type of story		6 years old		7 years old		8 years old	
		F	%	F	%	F	%
Depicting high aspiration	Girls	6	18.2	12	18.5	14	19.2
	Boys	10	30.3	9	30.0	15	50.0
Satisfaction of daily needs	Girls	20	60.6	38	58.5	37	50.7
	Boys	17	51.5	15	50.0	10	33.3
Element of fear	Girls	4	12.1	9	13.8	10	13.7
	Boys	3	9.1	4	13.3	3	10.0
Little imagination	Girls	3	9.1	6	9.2	12	16.4
	Boys	3	9.1	2	6.7	2	6.7

having a high level of aspiration. In the 6-year-old age group the ratio was 48.4 to 36.4%; in the 7-year-old age group 47.7 to 40%, and in the 8-year-old age group 41% to 46.7% respectively.

In the story-completion task few girls in all three age groups 6, 7, and 8 years old were rated as having high aspiration level 18.2, 18.5 and 19.2% respectively. In comparison, more boys revealed a high level of aspiration, 30.0% in the 6-year-old age group, 30% in the 7-year-old age group and 50% in the 8-year-old age group (Table 3).

4. Independence level

In the projective tests for ascertaining children's independence level, results of clay-modelling task revealed that about one-third of the 6-year-old group were rated as having a high level of independence, 33.3% girls and 27.3% boys. In the 7-year-old age group a higher number of girls and boys had a high level of independence 60 to 36.7% respectively. In the 8-year-old age group the ratio was even higher 61.7 to 70% respectively, that means fairly large numbers of girls and boys had a high level of independence.

In the toy-assembling task majority of children displayed a high level of independence with the boys in the lead in all age groups. It is evident from the numbers; 6-year-old girls and boys 51.5 to 54.6% in 7-year-old age group 64.6% to 73.3% and in 8-year-old age group 68.5% to 73.3% respectively were rated as having a high level of independence (Table 4).

5. Academic achievement

The results of children's responses in the interview showed that a large majority of children indicated an aspiration for high academic achievement. In the 6-year-old age group the number of girls and boys rated as having high aspiration was 81.8% to

Table 4 Children's level of independence
A. Clay-modelling task

Independence level		6 years old		7 years old		8 years old	
		F	%	F	%	F	%
High	Girls	11	33.3	39	60.0	45	61.7
	Boys	9	27.3	11	36.7	21	70.0
Average	Girls	14	42.4	23	35.4	25	34.2
	Boys	21	63.6	13	43.3	6	20.0
Below average	Girls	8	24.3	3	4.6	3	4.1
	Boys	3	9.1	6	20.0	3	10.0

B. Toy-assembling task

Independence level		6 years old		7 years old		8 years old	
		F	%	F	%	F	%
High	Girls	17	51.5	42	64.6	50	68.5
	Boys	18	54.6	22	73.3	22	73.3
Average	Girls	12	36.4	20	30.8	19	26.0
	Boys	14	42.4	7	23.3	6	20.0
Below average	Girls	4	12.1	3	4.6	4	5.5
	Boys	1	8.0	1	3.3	2	6.7

63.6%, in the 7-year-old age group 86.2% to 73.3%, and in the 8-year-old age group 78% to 73.3% respectively. The girls showing a slightly higher level of aspiration than boys for academic achievement.

Compared to the children's responses, the teachers' rating for children's actual academic achievement showed that a lesser number of children in all age groups had a high level of achievement (Table 5).

Table 5 Children's aspirations for academic achievement.
A

Aspiration level		6 years old		7 years old		8 years old	
		F	%	F	%	F	%
High	Girls	27	81.8	56	86.2	57	78.0
	Boys	21	63.6	18	60.0	22	73.3
Average	Girls	1	3.0	7	10.8	9	12.3
	Boys	7	21.2	7	23.3	5	16.7
Low	Girls	5	15.2	2	3.0	7	9.6
	Boys	5	15.2	5	16.7	3	10.0

B. Teacher's rating for children's academic achievement.

Achievement level		6 years old		7 years old		8 years old	
		F	%	F	%	F	%
High	Girls	19	57.6	27	41.5	28	38.4
	Boys	11	33.3	7	23.3	14	46.7
Average	Girls	10	30.3	17	26.2	29	39.6
	Boys	12	36.4	9	30.0	7	23.3
Low	Girls	4	12.1	21	32.3	16	22.0
	Boys	10	30.3	14	46.7	9	30.0

Research findings in other countries like Brazil, Japan and Germany (McClelland 11) and in a midwestern community in United States (Winterbottom 18) showed somewhat similar results.

6. Performance in games

Children's responses concerning games revealed that about half the number of children, girls as well as boys, had high aspirations for performance in games, i.e. they wanted to have leadership roles in the games. The teachers' rating for children's actual performance in games showed a considerable difference in comparison to what was revealed in the children's responses. According to teachers' rating, a low number of girls and boys actually assumed leadership roles in games.

7. Aspirations for future occupations

The results of children's responses regarding their future occupations indicated that about half of the children had high aspirations for future occupation; boys as well as girls showed an inclination for becoming doctors and engineers, and some of the boys wanted to be officers in the armed forces (Table 6).

In the teachers' rating for children's leadership role in class group activity, it became evident that as a whole about one-quarter to one-third of children, girls as well as boys, showed leadership qualities (Table 7).

Table 6 Children's aspiration for future occupations.

Aspiration level		6 years old		7 years old		8 years old	
		F	%	F	%	F	%
High	Girls	17	51.5	30	46.2	26	35.6
	Boys	18	54.5	15	50.0	13	43.3
Average	Girls	14	42.5	30	46.2	39	53.4
	Boys	5	15.2	6	20.0	5	16.7
Low	Girls	2	6.0	5	7.6	8	11.0
	Boys	10	30.3	9	30.0	12	40.0

Table 7 Teachers' rating for children's leadership qualities.

Leadership qualities		6 years old		7 years old		8 years old	
		F	%	F	%	F	%
High	Girls	13	39.4	17	26.2	13	17.8
	Boys	8	24.7	4	13.3	8	26.7
Average	Girls	5	15.2	18	27.7	25	34.2
	Boys	5	15.2	6	20.0	6	20.0
Low	Girls	15	45.4	30	46.1	35	48.0
	Boys	20	60.6	20	66.7	16	53.3

CONCLUSIONS AND RECOMMENDATIONS

The conclusion drawn from the results of this study is that the physical and socio-psychological development of Libyan children is most adequate and there is considerable achievement orientation in the young generation, a fact that augurs well for the nation's future. An observation can be made that it depends on parents and teachers

whether the children become creative and constructive members of society, or merely passive participants in the dynamic social processes.

Recommendations for further research

1. It is suggested that another research of this type should be conducted in the rural areas, along with other urban areas of Libya.
2. Parents' co-operation should be requested for information about their children's dietary habits and problems.
3. A separate questionnaire besides the one used for teachers should be prepared for parents, to get information about their family values, beliefs, expectations and pattern of discipline in the home.
4. Intelligence of respondents is an important factor, and should be used as an independent variable for investigating the determinants of aspirations and achievement level of children.
5. Conception of self is found to be influential in the development of a person's cognitive structure, value orientation and behaviour pattern, so it should also be used as an independent variable for aspiration and achievement level of children.
6. The aspiration and achievement level of children should be investigated in relation to some important family variables, so that statistical inferences can be drawn.

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دراسة عن عادات الغذاء وبعض جوانب النمو للأطفال في الجماهيرية

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مستخلص

اجريت هذه الدراسة في شهرى مايو ويونيو ١٩٨٠ وذلك لاستقصاء معلومات عن انماط استهلاك الاطعمة والجوانب الخاصة بنمو النشء بليبيا. وقد جمعت المعلومات عن طريق الاتصال المباشر بين اطفال المدارس الابتدائية ذوى الاعمار المحصورة ما بين ٨ و١٦ سنوات تم اختيارهم من خمسة مدارس بمدينة طرابلس. وقد كانت حجم العينة المختاره هي ٢٦٤ منهم ١٧١ طفله و ٩٣ طفلا.

ولغرض تجميع المعلومات الخاصة بنمو الاطفال، اخذت قياسات خاصه لاجسام الاطفال بالعينه واستخدمت ايضا طريقتين لتحديد مدى التوافق العصبى والعظلى لديهم.

اما فيما يخص النمو النفسى والاجتماعى لدى الطفل فقد استعملت استمارة بحث خاصة وكذلك اختبارات استقراره لجمع المعلومات المطلوبة. وبعد تحليل المعلومات المجمعه اظهرت نتائج البحث بان القياسات الخاصة باجسام الاطفال تسير على نمط جيد اذا ما قورنت بما يسمى " بمقياس هارفرد القياسى " ومن خلال الدراسة اتضح ايضا بان الوجهه الهامه لدى الاطفال المختارين هي وجبة الغذاء اما وجبتى الافطار والعشاء فتعتبران اقل قيمة ولكنهما مناسبان. ووضحت الدراسة كذلك ان الاستهلاك اليومى للطفل من الطعام يعتبر مقبولا مقارنة بالوجبات المقترحة من قبل مجلس البحوث القومى الأمريكى فى الخصوص. اما من حيث النمو النفسى والاجتماعى للطفل فالدراسة اثبتت بان هناك اتجاها مرتفعا للحصول لدى الاطفال. وأنه من وجهة تقييم معلمى التلاميذ للصفات القيادية لديهم وجد بان هناك ما بين ربع الى ثلث الاطفال قد اظهروا صفاتا قيادية.