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PHYSICAL HEALTH AND BEHAVIORAL PROBLEMS IN TWO HIGH SCHOOLS IN HOLON, ISRAEL

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1320 students of two high schools were examined in Holon. Their physical and behavioral problems are summarized. These data serve to build the model of the medical profile of the adolescent in Israel, as a background to medical screening in school, which should be done at least every two years.

INTRODUCTION

Physical and behavioral maturity occurs between the age of 12-17 years. The "adolescent" has his own characteristic features and is not to be considered as "older child" or "young adult". In Israel he is examined and treated by pediatricians. During the high school they are examined twice as it is recommended. The morbidity during that period is low in comparison with pediatrics age /1/.

The purpose of this study is to provide information about the medical and behavioral problems of the adolescent in Israel.

MATERIALS AND METHODS

1320 students from two high schools in Holon were examined (Eilon and Yavneh High School). Their age was between 14-18 years. There were 972 in the first and 348 in the second. Holon is the 4th greatest city in Israel and there are 5.000 pupils learning in six high schools. This city served as the site of

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our study. The data were collected by informative questionnaires completed by their parents and all the pupils had been physically examined by senior pediatricians during 1987-1988.

RESULTS

The results of our study indicate a ratio of boys to girls 47 to 53 %. The socio-economic composition of the population in these two schools is in the upper mean level of the society in Israel.

TABLE I

The professions of the parents

	No	%
Academic professions (university graduates)	713	27 %
Technical and teaching professions	898	34 %
Mechanical and commercial work	1029	39 %

65 % of the mothers worked during this year at full or part-time jobs.

TABLE II

The origin of the parents

	No	%
Ashkenazic Jews	1162	44
Sephardic	1082	41
Mixed	231	8.8
Yemenite	158	6
Shomronic	16	0.2

TABLE III

The characteristics of the pupils

No. of children in the family	No. pupils	%
1	132	13
2	502	38
3	462	35
4	198	15
5	26	2

TABLE IV

The familial situation

Married parents	1032	78 %
Divorced	238	18 %
Orphanage (at least 1 parent)	52	4 %

TABLE V

The prevalence of chronic disease (with duration of 3 weeks or more) versus acute illness among the pupils during 1987.

Illnes	No. of pupils	%
Acute	977	74
Chronic	211	16
Without	132	10

80 % of the pupils with chronic disease had good compliance with medication.

TABLE VI

Diseases and accidents leading to hospitalization of the pupils during 1987

Disease	No. of pupils	%
Acute	66	5
Chronic	53	4
Accidents	40	3

The mean absence from school because of acute medical problems was 4.7 in comparison with mean of 14.3 days for pupils with chronic disease.

Each pupil had an average of 2.7 acute or exacerbation of chronic medical problems during the year, even though 57 % of the pupils did not have any complaint concerning their health.

Dealing with adolescent girls the average of menarch was 12.8 years according to the pupil's answers: in comparison with the average age of onset in girls in U.S. of 12.5 years /2/.

TABLE VII

The data of the medical pathological finding

Pathology	No. of pupils	%
Hypertension	53	4
Obesity	158	12
Bronchial Asthma	132	10
Diabetes Mellitus	2	0.15
Epilepsy	3	0.23
Abdominal pains	92	7
Cepelalgic (recurrent)	198	15
Kyphosis/Scoliosis	92	7
Acne	515	39
Dental Carries	858	65
Visual problems Myopia	304	23
Strabismus	30	2.3
Daltonism	18	1.4
Hearing loss	34	2.6
Stuttering	9	0.7
Undescended testes	2	0.15

TABLE VIII

The prevalence of psychological disturbances

Psychological disturbances	No. of pupils	%
Behavioral problems (all grades)	106	8
School Refusal (pholic)	40	3
Nocturnal Enuresis	53	4
Anorexia Nervosa	40	3
Suicidal Attempts	5	0.5

TABLE IX

Smoking habit among the pupils

Age	No. of pupils	%
14-15	92	7
15-16	211	16
16-17	356	27
17-18	501	38

DISCUSSION

In Israel pupils in high school are examined by the school physician (pediatrician) whose work is highly diversified. He is doing a screening and verifies that the pupil with the chronic disease is under surveillance, and he knows the medication with the appropriate dose that he has to take during his illness. Besides the physical examination and the screening the physician gives lectures in preventive medicine in classes. The subjects include topics as the damage of smoking, the danger of drug addiction and sexual education.

The adolescent disease profile is given in Table VII. There were not any cases of rheumatic fever or rheumatic heart disease.

Dental cavities worsen with age /3/. An average of 5 cavities were present in the permanent teeth between the age of 14-16 years and 9 between the ages of 16-18 years. 35 % of the adolescents in this study were free of cavities. A possible solution to this problem involves vaccination against acidogenic bacteria, streptomutans and lactobacilus.

There was a familial incident of hypertension in most cases found. The data of 40 % is less than the margin of 6-10 % mentioned in the literature.

Chronic diseases interfere with the adolescents acquiring independence and choosing a profession /4/. The adolescent with chronic disease can have a diminished self image, be frustrated and have sentiments of guilt. This is often expressed by absence from school and poor achievement in his studies /5,6/. 16 % of pupils suffered from chronic diseases.

The two schools are located between the agricultural field and industrial zones of Holon. This can be the reasons that 24 % of the pupils suffered from allergic symptoms including urticaria, angioneurotic edema, allergic rhinitis, allergy to food and medication.

Bronchial asthma was found among 10 % of the pupils and the number increased if tests of provocation are used (with Histamin, for example).

The number of absent days of the asthmatics was influenced by the severity of the asthma and the social conditions at home /7/. In this group the mean absence days is 14.3 but the pupils were asked to bring with them to school inhalators (salbutamol or turbutalin) and to use them in case of bronchospasm crisis occurred at school.

60 % of the asthmatic pupils suffered from exercise induced asthma. They were instructed to take slow release theophyllin on the morning of gymnastics.

Concerning kyphoscoliolis there were discrepancies between the objective finding and the percentage of back pains. Only approximately a third of these pupils had pains. There were more pupils with scoliosis than with kyphosis. The back pains increased during physical activity or after prolonged standing /8/.

Two boys with cryptorchidism who have been found for the first time during the school medical screening: certainly they should have been diagnosed and treated at an earlier stage, since there is a higher risk of atrophic testis and malignancy (Seminoma). They were sent without delay for ultrasound examination and surgical treatment.

40 pupils were involved in accidents during the year. The accidents occurred at school, at home or on the way to school. The type of accidents in order of frequency were: falls, road accidents, burns and accidental poisoning. Accidental injury is the leading cause of childhood handicaps and in this group 3 children suffered from severe handicaps (all 3 were involved in road accidents) /9-12/.

Behavioral problems.

The adolescent have specific psychological attributes. 8 % of the pupils had behavioral difficulties and problems in all grades of severity. Psychological problems were expressed by lack of concentration, chronic fatigue or by agression towards other children /13/. But there is no certainty about the prevalence of these symptoms as for example, enuresis nocturnal

or sleep disturbancies, the data depend upon the revealing of the child and/or his parents.

The percentage of children whose parents were separated rose in some classes to 25 % (one pupil out of four in this class). In 78 % of these cases the child lives with the mother.

90 % of pupils have mean absence of 9.5 days per year. 40 % of the absences from school were explained by medical certificates (as permitted up to absence of 3 days). 25 % were explained by parents and the remaining third of absences were explained by the students. The smoking habit is first acquired at 14-15 years. The reasons stated by the pupils are: family habit, influence of friends, a drive towards independence and need to reduce tension. Most of smokers had non productive cough. The data concerning the psychological problems were given by the educative advisor and the teachers. Most of them were under psychological treatment and surveillance.

The attempted suicides were by means of taking medication. All cases required and were treated by stomach lavage in the regional hospital. They returned to school after short hospitalization and several days of ambulatory treatment. All were under psychiatric ambulatory treatment and surveillance.

SUMMARY AND IMPLICATION

The purpose of this survey was to obtain information about the health problems of the pupils and to use it in organizing the health program in school. The data is a pilot study as they were obtained only from 2 schools out of 6 in the city. The results have the following implication for the adolescent's health in school, and our conclusions are the following:

1. The main purpose of the medical examination in school is to do a screening of all pathologies and to explain the findings to the student and to verify that he is followed up and is under control.

2. The most serious medical problems of this period are chronic diseases such as bronchial asthma, inflammatory bowel disease and lower back pain (kyphoscoliosis). The school physician can try, together with the specialist, to reduce the absence from school in this category of disease.

3. Everytime that the absence rate from school is higher than the average, the school physician has to check if there are medical reasons and if not, to collaborate with the school educational advisor to find the reasons.

4. School achievement is influenced by medical problems /14/. In each case that happened in acute failure in studying the physician has to verify and culminate medical reason for it. Therefore the physician has to participate in assessments sessation and to be their advisor concerning absence of the pupil from school and from gymnastic lessons for short or long periods.

5. The school medical examination is usually the last systemic chance to screen these youngsters and to inform them about their medical situation. We have to bear in mind that these adolescents will in a few years be adult citizens. Their medical, intellectual and behavioral level will set the future standard of the country.

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