

Original Research Article

Primary health problems in rural school children in Lebanon

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ABSTRACT

Background: Primary health problems among school children are rarely disaggregated between urban and rural areas. This report describes findings in children examined during school health visits in a rural region in South Lebanon.

Methods: Medical visits were carried out in four public schools in the Qana region, district of Sour, between December 2007 and May 2008.

Results: A total number of 887 students were examined. Age varied between 4 and 16 years old. The majority (78%) had a normal weight for their age. Around 7.1 % of males and 3.5 % of females were considered obese for their age. The most frequent abnormality found was dental caries (59%). In addition, 14% of students had cerumen earplugs, and 3.6% had untreated defective visual acuity. Cases of pediculosis (n=62) were found in just one school, indicating a local outbreak of limited scope.

Conclusions: There were only minor differences between health problems in this rural area and those measured in an urban area 10 years earlier. Dental problems continued to be predominant. In future campaigns, health education sessions should be conducted about personal hygiene and adequate nutrition with students, teachers and/or parents, in parallel to conducting the medical visits.

Keywords: School visits, Rural health, School health

INTRODUCTION

School health visits play an important part in the lives of youth, in countries where community-based health programs do not target this age-group. These visits are necessary to detect some medical and developmental problems and to promote knowledge, attitudes, and skills for healthy lifestyles.¹ Ameliorating school health might also improve student's school performance and social outcomes at the larger community level.² In Lebanon, health visits are a common yearly occurrence in public and private schools across the country. However, data are not readily available in governmental agencies

overseeing school health, and published findings are scarce despite their importance for public health planning. The most recent paper dealing with school health visits was published in 1996 by Saab et al evaluating the health status of 2778 elementary students enrolled in government schools in Beirut.³ In 2007-2008, several units from Saint-Joseph University (USJ) participated in medical visits in public schools in the area of Qana, caza of Tyre (South Lebanon) in the context of an intervention dubbed "USJ-Cana Twinning Program for Health and Human Development". Findings from this recent campaign in a mostly rural area are presented and contrasted with the 1996 findings from an urban region.

METHODS

Medical visits were carried out in four public schools in the Qana region: 3 elementary/complementary and one secondary school. The number of students registered in those schools for the academic year 2007-2008 was 1079 students from both sexes. The activities were performed in phases over the period between December 2007 and May 2008. On a typical visit day, a team comprising of 2 or 3 family physicians and 2 or 3 nurses arrived at the consultation site in the morning. After organizing a space for the visits, medical examinations started and continued till the end of the school day. The number of days of activity in each school varied between two and four, until each school's administration reported that all registered children who were available for the visit had actually been examined.

The visits routinely included a quick visual acuity exam on a standard Snellen chart, and a measurement of height and weight. Teams used the health booklets developed by the Ministry of Education to record the medical history and the physical exam findings. In most cases, the schools were unable to obtain from parents the vaccination booklet of their children at the time of the visits. When a health problem was detected, a written recommendation for medical follow-up was prepared to be sent to the child's parents.

In children up to 10 years of age, weight-for-height with the cut-point greater than 1 and 2 SD from the reference median value was used to define overweight and obesity, respectively.^{4,5}

For adolescents (10 to 19 years old), the definitions of overweight and obesity were based on sex and age-specific 5th and 95th BMI percentiles, respectively, derived from the U.S. first national health and nutrition examination survey.⁵

RESULTS

A total number of 1079 students were registered during the year 2007-2008, with 887 students examined during the medical visits (Table 1). Seven percent of the students are in pre-elementary, 39% in elementary, 35% in complementary and 13.5% in secondary school. Age varies between 4 and 16 years old, with an average of 5.1 years old for pre elementary, 10.1 years old for elementary, 14.7 in complementary and 17.7 years old in secondary school. Concerning weight, 78% of the total number examined has a normal weight. Around 4% have a weight less than normal; and 7.1% of males and 3.5% of females are considered obese (Table 2). Table 3 presents a cumulative list of most common problems detected during those visits, contrasting them with those published by Saab et al in 1996.³ The most frequent abnormality found on physical exam was dental caries (59%). This was similar to the result found in the 1996 Beirut visits (54%). In addition, 14% of students in the

Qana area had cerumen earplugs, and 3.6% had untreated defective visual acuity. In Qana, 4.4% had growth delays compared to 1% in Beirut, and 5.2% had obesity problems compared to 3.2% in Beirut. Most cases of pediculosis were found in just one school, indicating a local outbreak of limited scope. In that school, anti-parasitic topical treatment was provided, and the school health assistant was provided with information on ways of using it.

Table 1: Number of students that underwent medical visit.

| | n | % |
|------------------------------------|-----|------|
| Hanawey | 99 | 11.2 |
| Complementary of Siddiquine | 205 | 23.1 |
| Complementary of Cana | 283 | 31.9 |
| Secondary of Cana | 300 | 33.8 |

Table 2: Students weight.

| | Total | | | |
|--|-------|------|--------|------|
| | Male | | Female | |
| | n | % | n | % |
| < 5th percentile | 20 | 4.7 | 19 | 4.2 |
| 5th percentile <x < 85th percentile | 332 | 78.1 | 355 | 78 |
| 85th percentile<x < 95th percentile | 43 | 10.1 | 65 | 14.3 |
| ≥95th percentile | 30 | 7.1 | 16 | 3.5 |
| Total | 425 | 100 | 455 | 100 |

Table 3: Problems detected during medical visits in public schools in Qana compared to Beirut area.

| Problems (n, %) | Qana (2007-2008) | Beirut (1996) ³ |
|---|------------------|----------------------------|
| Dental caries | 516 (59.0) | 1492 (53.7) |
| Cerumen ear plugs | 123 (14.0) | NA |
| Pediculosis | 62 (7) | 223 (8.0) |
| Obesity | 46(5.2) | 90 (3.2) |
| Growth delay | 39 (4.4) | 29 (1.0) |
| Defective vision | 32 (3.6) | 166 (6.0) |
| Skin problems | 28 (3.2) | NA |
| Genital problems | 19 (2.1) | 22 (2.0) |
| Scoliosis | 15 (1.7) | NA |
| ENT problems | 13 (1.5) | NA |
| Cardiac and respiratory problems | 9 (1.0) | NA |

DISCUSSION

School Health developed gradually over the years. A big international literature review was done in 1999 with an overview of the Lebanese epidemiological reports, and came out with some recommendations for the school health physical exam in Lebanon.⁶ Physical exam should focus mainly on vaccination review, tuberculin test,

vision, hearing, dental and skin disorders. These recommendations were still applicable years later, as we found in our visits to Qana region. The most common problems detected were mainly dental, vision, ear plugs and skin problems.

There were only minor differences between rural and urban findings reported over a 10 years gap. Dental problems have been shown to be the predominant medical problem encountered in school children in the rural area of Qana (2006) as well as in the urban area of Beirut (1996). The extent of this problem in both reports shows that not much attention has really been provided to dental health in about ten years. The involvement of dentists in applying a protective fluoride anti-caries varnish on children's teeth, and in conducting hands-on presentation on the optimal use of toothbrushes is desirable. In future campaigns, dental participation will be provided. The facilitation of referral to community-based or to participating private dental clinic in the region will be facilitated.

The rate of growth delay and obesity was higher in our report compared to the report published in 1996. There should be more awareness to the parents on the healthy diet for their children. Defective vision was found more common in urban than in rural areas. Apparently, factors enabling defects to appear, such as prolonged TV watching and computer screen exposure may have become as pervasive in rural regions in Lebanon as they are in urban ones. Follow-up work with concerned optometrists of children with defective visual acuity in need of medical eyeglasses is recommended.

In future campaigns, the visiting groups would want to conduct health education sessions on personal hygiene and adequate nutrition with students, teachers and/or parents, in parallel to conducting the medical visits. The aims would be to improve growth, and to prevent problems of poor hygiene and dental caries. Teachers should also be sensitized to behavioral signs which indicate that a child is having problems with poor eyesight. Increased efforts will also focus on checking the children's vaccination status, and completing the essential vaccines for those who may need it. Other therapeutic interventions which can be conducted on the spot will also be provided, most likely for example the

removal of cerumen earplugs, with adequate directions to prevent relapses.

In carrying the Qana school visits activity, Saint Joseph University has relied and will continue to rely on recommendations from, and to collaborate with the specialized Department within the Ministry of Education, and with local community-based NGOs interested in children's health and well-being. The school visits activity can be conducted in a valid way only through concerted team efforts involving several types of healthcare providers ensuring continuity of visits.

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REFERENCES

1. Kolbe LJ. The role of the Federal Government in promoting health through the schools: Report from the Division of Adolescent and School Health, Centers for Disease Control. *J Sch Health*. 1992;62:135-7.
2. Kolbe LJ. Education reform and the goals of modern school health programs. *Educ Stand*. 2002;3:4-11.
3. Saab BR, Shararah N, Makarem M, Sarrou' E, Usta J, Khogali M. Data from a public school health project in Beirut. *Leb Med J*. 1996;44:63-7.
4. de Onis M, Blossner M. WHO Global Database on Child Growth and Malnutrition. Geneva: World Health Organization; 1997.
5. World Health Organization. Physical Status: The Use and Interpretation of Anthropometry. Report of a WHO Expert Committee. Geneva: World Health Organization; 1995.
6. Hamadeh GN, Saab BR, Adib SM, Mroueh SM. Recommendations for the school health physical examination in Lebanon. *J Med Liban*. 1999;47(6):333-8.

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