# Evaluation of Some Aspects of School Health Service in Baghdad –Al-KarKh district

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**Abstract**:

**Objectives**: The aim of the current study is to evaluate the performance of primary health cane center regarding the implementation of some aspects of school health services.

**Methods**: The study is a descriptive cross- sectional study, the primary health care centers included were (7) primary health care centers, (5) from the center of Baghdad (2) from the periphery of Baghdad. The other part of the study involved a sample of primary school in Baghdad of Al-Karkh district and the pupils included were only the first grade primary school pupils. The study extended for the period (15th October 2002 to 15th March 2003).

**Results**: A total of 2644 pupils (boys and girls) were examined to detect any obvious health problem. Four health issues were chosen: The Bacillus Calmete Guerin (BCG) vaccination scar, handicapped, stuttering, and vision acuity defect, through checking of school medical card, records of primary health care center team visits, in comparison with that detected during examination in the survey.

**Conclusion**: Poor performance of primary health care personnel and low utilization of school health services. Several actions were suggested to improve the current situation.

**Key word:** Evaluation, school health

**Introduction**:

School health is an important branch of community health. Substantial evidence indicates that health influences learning and that education influences health, similarly, increasing evidence shows that school health programs offer high cost – benefit ratios [1, 2, 3].

Children in developing countries suffer great hardship and are prone to much more illnesses and diseases than their peers in the developed countries. Appropriate health services are therefore essential to minimize these health and economic hardships among children in the less developed countries [4,5].

Health program evaluation is considered to be one of the scopes of the health system, which is regarded as a scientific tool for health development. The ultimate aim of evaluation research is the improvement of the health status of the target population by rendering health activities more relevant, efficient, and effective [6-7].

The aim of the current study is to evaluate the performance of primary health care centers (PHCCs) regarding the implementation of some aspects of school health services and to identify the gaps in the provision of these services.

**Material & methods:**

The study is a descriptive cross- sectional survey, the primary health care centers (PHCCs) included were 7 PHCCs, five from the urban of Baghdad (Khadra, Gazalia, Amria, Hayalamil, Al-saidyia) and two from the rural of Baghdad (Abu Griab and Mahmoudia), which were taken by random sampling. The other part of the study involved a sample of the primary schools in Baghdad at Karkh district served by the chosen PHCCs. The pupils included in the survey were only the first grade primary school pupils age (6-7) years. For the period extended (15th of October 2002 to 15th of March 2003). For both PHCCs and schools, the medical records related to first year primary school pupils were reviewed and their findings recorded. Furthermore, in the selected schools, all first year primary pupils were examined for the purpose of verifying the findings in their medical records. The pupils were observed and examined for the following; grossly obvious handicap, speech, BCG scar and visual acuity. For handicap assessment, only observation of the general appearance and gait were used to detect any obvious physical handicap, polio, or Down's syndrome features. Speech was assessed by asking the pupils simple questions and observing their response, any difficulty in speech or irregular speech pattern was considered as stuttering. The BCG vaccination was documented by observing where the BCG scar was present or absent at the upper left arm (deltoid region). For the visual acuity, a standard Snellen chart was used. Data analysis involved mainly descriptive analyses using percentages and frequency tables. Chi-square test was used with p value $<0.05$ as significant level.

**Results**:

The general information for first year primary school pupils according to the records in the PHCCs is shown in (Table 1). As illustrated in the table, two PHCCs (Al-Saidyia and Hayalamil) out of the seven PHCCs have appointed doctor for

school health services. During the study period a total of 2644 pupils (boys and girls) were examined, 1466 pupils in the sample of the selected school linked to the 5 PHCCs in the urban and 1178 pupils from the rural .

Table 2 shows the distribution of cases recorded by PHCC team during their visit to schools versus findings detected by the investigators according to the location of the PHCCs. An important point to note is the great differences in the number of registered health problems and these cases detected by the examiner. The investigators had detected 53 children with visual problem, 29 cases with speech difficulties, and 14 children with physical handicaps. According to the school health records and the PHCC visiting team records, the figures reported got much lower.

The current study demonstrated that the pupils from schools in the rural had better recording of BCG scar compared to these in the urban (according to the location of PHCCs). These differences were statistically significant (p=0.025) (Table 3).

The distribution of health problems reported by PHCC team during their visit to school according to the appointed doctor for school health is shown in Table 4.

Table (5) shows the BCG scar findings according to the appointed doctor for school health, as demonstrated in the table, there was no significant difference between recorded and not recorded BCG scar, but a significant difference was found for missing files for BCG vaccination scar (p=0.002).

The distribution of health problems recorded by the PHCC visiting team versus examiners finding is illustrated in Table (6).

**Table 1: General information on 1st year primary school records of responsible PHCCs for the year (2002-2003).**

| | khadra | Ghazalia | Amria | Hayalamil | Alsaidyia | Abu Graib | Mahmoudia |
|---|---|---|---|---|---|---|---|
| Total number of first class pupils | 1200 | 2158 | 1197 | 1790 | 1315 | 3142 | 2207 |
| No of Schools | 12 | 22 | 15 | 17 | 10 | 39 | 35 |
| Distance from school (km). | 4 | 6 | 5 | 5 | 6 | 12 | 10 |
| Visited | Yes | Yes | Yes | Yes | Yes | No | Yes |
| Appointed doctor for school health | No | No | No | Yes | Yes | No | No |

**Table 2: The distribution of cases recorded b PHCC team through their visit to school versus findings detected by the examiners according to location of PHCC (urban / rural).**

| | (5) PHCC urban | (2) PHCC at rural | Total |
|---|---|---|---|
| **Visiting PHCC team to school** | 5 (100%) | 1 (50%) | 6 |
| **Appointed Doctor for school health** | 2 (40%) | - | 2 |
| **No. of pupils** | 1466 | 1178 | 2644 |
| **Handicapped** | | | |
| **On examination** | 8 | 6 | 14 |
| **Management** | No | No | |
| **In records** | 2 (25%) | 6 (75%) | 8 |
| **Speech*** | | | |
| **On examination** | 14 | 15 | 29 |
| **Management** | No | No | |
| **In records** | 3 (27.2%) | 8 (72.7%) | 11 |
| **Vision** | | | |
| **On examination** | 32 | 21 | 53 |
| **Management** | 6 Referral (37.5%) | 1 Referral (4.76%) | |
| **In records** | 8 (53.3%) | 7 (46.6%) | 15 |

*Speech (stuttering)

**Table 3: The BCG scar findings of examined pupils with BCG vaccination recorded and not recorded and missing records in their medical school records according to location of PHCC (urban / rural).**

| | (5) PHCC at urban | (2) PHCC rural | Total | $\chi^2$ | p |
|---|---|---|---|---|---|
| **No. of pupils in Participating schools** | 1466 | 1178 | 2644 | | |
| **BCG recorded** | 1358 (55.4%) | 1091 (44.5%) | 2449 | | |
| **With scar** | 1222 (90%) | 1010 (92.5%) | 2232 (91.1%) | 5.03 | 0.03* |
| **No scar** | 136 (10%) | 81 (7.4%) | 217 (8.8%) | | |
| **BCG not recorded** | 43 (47.7%) | 47 (52.2%) | 90 | | |
| **With scar** | 8 (18.6%) | 17 (36.1%) | 25 (27.7%) | 3.45 | 0.063 |
| **No scar** | 35 (81.3%) | 30 (63.8%) | 65 (72.2%) | | |
| **Missing records** | 72 (59%) | 50 (40.9%) | 122 | | |
| **With scar** | 37 (51.3%) | 38 (76%) | 75 (61.4%) | 7.55 | 0.006 |
| **No scar** | 35 (48.6%) | 12 (24%) | 47 (38.5%) | | |
| $\chi^2$ | 251.99 | 164.9 | 402.4 | | |
| **P** | 0.0001* | 0.0001* | 0.0001* | | |

*Significant difference

**Table 4: The distribution of cases recorded by PHCC team during their visit to schools according to appointed doctor for school health.**

| | Appointed School Health Doctor | | Total |
|---|---|---|---|
| | Present | Not Present | |
| **Visiting PHC team to school** | 2 (100%) | 4 (80%) | 6 |
| **No. of pupils** | 617 | 207 | 2644 |
| **-Handicapped** | 1 (12.5%) | 7 (87.5%) | 8 |
| **Management** | No | No | |
| **- Speech** | 2 (18.1%) | 9 (81.1%) | 11 |
| **Management** | No | No | |
| **- vision** | 7 (46.6%) | 8 (53.3%) | 15 |
| **Management:** | | | |
| **Referral** | 5 (71.4%) | 3 (37.5%) | 8 (53.3%) |

**Table 5: The BCG scar findings of examined pupils with BCG Vaccination recorded and not recorded and missing records in their medical school records according to appointed doctor for school health.**

| | Appointed School Health Doctor | | Total | $\chi^2$ | p |
|---|---|---|---|---|---|
| | **Present** | **Not present** | | | |
| **No. of pupils in Participating schools** | 617 | 2027 | 2644 | | |
| **BCG recorded** | 546 (22.2%) | 1903 (77.7%) | 2449 | | |
| **With scar ≠** | 488 (89.3%) | 1744 (91.6%) | 2232 (91.1%) | 2.07 | 0.10 |
| **No scar** | 58 (10.6%) | 159 (8.3%) | 217 (8.8%) | | |
| **BCG not recorded** | 24 (26.6%) | 66 (73.3%) | 90 | | |
| **With scar** | 4 (16.6%) | 21 (31.8%) | 25 (27.7%) | 2.01 | 0.156 |
| **No scar** | 20 (83.3%) | 45 (68.1%) | 65 (72.2%) | | |
| **Missing records** | 47 | 75 | 122 | | |
| | (38.5%) | (61.4%) | | | |
| **With scar** | 19 | 56 | 75 | | |
| | (40.4%) | (74.6%) | (61.4%) | 14.3 | 0.0002* |
| **No scar** | 28 | 19 | 47 | | |
| | (59.9%) | (25.3%) | (38.5%) | | |
| $\chi^2$ | 149.7 | 251.6 | 402.4 | | |
| **P - Value** | 0.0001* | 0.0001* | 0.0001* | | |

* Significant difference

≠ With scar and with no scar detected at examination.

**Table 6: The distribution of recorded cases by the visiting PHCC team versus findings detected by the examiners according to appointed doctor for school health.**

| | Appointed School Health Doctor | | Total |
|---|---|---|---|
| | Present | Not present | |
| **No. of pupils** | 617 | 2027 | 2644 |
| **Handicapped** | | | |
| **On examination** | 6 (42.8%) | 8 (57.1%) | 14 |
| **In records** | 1 | 7 | 8 |
| **Missed** | 5 | 1 | 6 |
| | $\chi^2 = 7.02$, P= 0.0008* | | |
| **Speech** | | | |
| **On examination** | 7 (24.1%) | 22 (75.8%) | 29 |
| **In records** | 2 | 9 | 11 |
| **Missed** | 5 | 13 | 18 |
| | $\chi^2 = 0.34$, P= 0.558 | | |
| **Vision** | | | |
| **On examination** | 20 (37.7%) | 33 (62.2%) | 53 |
| **In records** | 7 | 8 | 15 |
| **Missed** | 13 | 25 | 38 |
| | $\chi^2 = 0.71$, P= 0.399 | | |

*Significant difference.

**Discussion**:

The Ministry of Health (MOH) has a specific and a clear guideline on school health, and its implementation in schools [8-9]. However, most of these guidelines are not strictly followed, and there was a poor follow up by the (MOH) on the implementation of these guidelines. The MOH guidelines clearly emphasize the importance of referral and documentation of all health problems among school pupils.

In the current study we notice, a poor coordination between the Ministry of Education and the (MOH). This lack of coordination has been observed in other countries, and was documented by the WHO; the WHO emphasizes the importance of such coordination for the fulfillment of proper school health programs [10].

The present work reveals that the first year primary school pupils with health problems did not receive the appropriate care (whether management or referral), this finding was reported by other worker in Iraq [11].

Visual health problem was the most common untreated problems in the surveyed schools. Among the examined pupils, there were a sort of discrepancies between the results detected by the investigators and those recorded by the responsible PHCC team; this can be explained by either under reporting or poor examination and detection of these health problems among school pupils. In either case, it reflects a deficiency in the process of care particularly in the knowledge of providers, which indicates a major issue that need to be addressed.

Schools in rural areas have approximately similar number of pupils per school as the urban areas of Al-Karkh district. However, the number of schools for each PHCC are more in rural than in the urban sectors, this would increase the burden on the PHCCs in the rural (peripheral) areas because more pupils need to be followed–up by the PHCCs team, this increased workload with the expected limited resources of rural PHCCs will lead to lower quality of school health services together with poor follow up of the pupils.

Tuberculosis is a recurring and prevalent disease in Iraq, and there must be a special attention to protect the new generation [12]. In the current study, we find that some pupils had missing information on BCG vaccination, and there were no indications whether those pupils had the vaccine or not. Other

pupils did not have any school records and there were no way to know their past medical history that should be included in the school health record.

The present work has the merits of being multi dimensional. Quantitative and qualitative methods are used for the collection of the data (PHCC records review, school medical cards review, direct observation of the facility, and clinical examination of the pupils by the investigators). The use of multiple data sources and methodologies will maximize the validity and consistency of the findings. But the limitations of such study are the bias that can not be completely avoided. The feasibility of the analysis of pre-existing records depends entirely on the quality of the health facility records. In many settings, the records are in complete, in accurate, and difficult to establish whether the items not written on records are absent or just not established. Records, of course, tell nothing about attitudes and skills in performing activities [13-14]. To sum up, the results of this study pinpoint clearly the weaknesses in the school health services, and important section of pupils still did not use these services in its standard form at all.

To improve the current situation, the authors suggested, that all efforts should be done to improve the quality of care through encouraging better registration, technical (at policy and decision making level) as well as operational integration (at PHCC and school level), must be emphasized, training courses for teachers, and in-service training for PHCC personnel to up date their skills.

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