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QUALITY ASSESSMENT OF IMMUNIZATION IN RURAL AREAS COVERD BY HEALTH HOUSES IN WEST AZARBAIJAN PROVINCE, 1995

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Abstract

Providing quality health care services, without constant qualitative and quantitative studies/evaluation, seems to be impossible. High rate of children immunization coverage in Iran, however, represents parts of a quality assessment of mother and child health care services in rural areas of West-Azarbiajan province, Iran. In this cross-sectional study, LQAS method was employed for the purpose of quality assessment. Children between 10 to 36 month old from the pre-mentioned areas, constitute the study population of present report. Sample was selected through a multistage sampling method and a questionnaire together with a checklist was utilized for data collection.

Findings demonstrate a very high rate immunization coverage of children (>96%). Mothers' knowledge about the date of next vaccination and DPT optential side effects are estimated to be 32% and 58% , respectively. Children's overall immunization adequacy rate, despite the high rate coverage, equaled to 59% which dose not represent a high quality service in this respect. This study approves the reliability and practicality of LQAS method for quality assurance of health services.

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Introduction

Vaccination against some communicable diseases has a long history in Iran, but the expanded program of immunization (EPI) started in 1982 with the support of WHO and UNICEF.

The first evaluation of the immunization coverage was done in May 1984 by a joint team of the Ministry of Health, WHO and UNICEF. During this evaluation, it was shown that in rural areas, the coverage of DTP3 was 64%, OPV3 57%, measles vaccine 67% and BCG only 5%.

The study was done in children 12-23 month of age according to WHO recommendations. During the following years more emphasis was on increasing the coverage and at the present time vaccination coverage for all diseases under EPI program is above 95%.

Although during routine evaluation of EPI, some information are collected on the quality of services, but, as these evaluation program use the method of cluster sampling, they do not show that in which part of the country or the province under sutdy, the coverage and quality of services are not acceptable, because, it gives only general information which cannot be used even for each cluster under study. With increase in the coverage of health services we reach to a point that although the coverage is acceptable, but does not reach the level of say 95% or more. The reason is that the quality of care is not acceptable in some units and only when we identify these units and make necessary improvment in quality of care, we can solve this problem. Lot quality assurance sampling (LQAS) which is a method developed years ago in industry, recently is being used in different countries for quality assurance of health services (1,2,3).

The present paper shows the results of the use of this method for coverage and quality assessment of EPI program in rural areas of west Azarbaijan. As the aim of this study was to determine the feasibility of the use of this method, the study was carried out in a representative sample of Health Houses in the province.

Materials and methods

According to the available statistics in 1994, there were 731 Health Houses with 1231 Behvarz (village health worker) in the province of West Azerbaijan covering 80.8% of the rural population.

We selected 30 Health Houses out of these by stratified random sampling. In each Health House, 28 children 12 to 23 months old were selected using systematic sampling. Data were collected by interviewers using check-lists and questionnaires. Interviewers were carefully trained before data collection. The following gives a brief description of LQAS to explain why 28 children were selected in each Health House.

In LQAS, a triage system is used in evaluation dividing the units according to the level of acceptability of the quality of services:
High, medium (acceptable) and low (totally unacceptable) using the method of binomial distribution.

The cut-point for the triage system are identified by a table showing the figures for " provider risk" (type I error) and " consumer risk" (type II error). According to the guidelines for immunization, the cut-points for coverage were identified as >90% (high) between 60% and 90% (acceptable) and < 60% (totally unacceptable). The most suitable sample size for each unit n=28 according to the statistical table prepared for this type of study (4).

Results

In 30 Health Houses, altogether 840 children were visited, 395 girls and 445 boys. The total coverage for BCG was 99.9% DTP3 99.40% for OPV3 99.40% and for measles 96.7%. Therefore in all health houses, the coverage for all 6 EPI vaccine were totally acceptable.

As regard quality of services, questions were asked from mothers about their knowledge of the date of the next vaccination, name of these vaccines and possible side effects of DTP3, the results of which are shown in Table 1. As seen

in the table, even if we accept 50% knowledge as totally acceptable, in more than 50% of Health Houses, the knowledge of mothers about the above subjects were not at this level.

Table 2 shows the level of acceptability of the time of vaccination for each vaccine. It shows that except for BCG, in none of other vaccines, immunization has been carried out according to the schedule recommended by health authorities.

Checklist of supplies and equipments filled at each Health House showed that all of them are at an accpetable level. Careful observation of the act of vaccination showed that unfortunately the majority of village health works do not observe carefully recommended methods, for example, most of them do not wash their hands before vaccination of the child.

Discussion

The aim of this study was to show the feasibility of LQAS in qualitative and quantitative evaluation of immunization. The study clearly showed that this method is easy, feasible and show exactly in which place the problems exist. This enables the authorities to concentrate their efforts mostly on the centers with problems, improving the coverage and quality of immunization services. We reconmmend that in future, at the level of District Health Centers, this type of evaluation be carried out for each service at least once a year, to identify the centers with problems and improve the quality of care by more emphasis on continuing education of the staff, health education of receivers of services and taking care to remove other short comings.

Table 1- Quality of care in immunization knowledge of mothers in 30 Health Houses in West-Azarbijan Province

Knowledge of mothers about	No. of Health House in triage system		
	Very good ≥ 50%	Acceptable (31% to 49%)	Unacceptable ≤ 30%
Date of next vaccination	4	1	16
Name of the next vaccine	8	16	6
Side effects of DTP	12	14	4

Table 2- Quality of care in immunization: timeliness of various vaccines given in 30 Health Houses in west-Azerbijan Province

Vaccine	Timeliness of vaccination		
	Good ≥ 50%	Acceptable (50% to 79%)	Unacceptable ≤ 50%
BCG	29	1	0
DTP1	12	14	4
DTP2	13	15	2
DTP3	12	15	3
OPV1	12	14	4
OPV2	12	16	2
OVP3	13	15	2
Measles	8	20	2

References

1- Huang Z, Chi H, Zhao X (1994): The use of finite population sampling and lot quality assurance sampling in estimating immunization coverage rate in villages (towns)., *Chung. Hua. Liu. Hsing. Ping. Hsueh. Tsa. Chih.* Jun, **15**(3): 174 -6.

2- Singh J, Jain Dc, Sharma RS, Verghese T (1996): Evaluation of immunization coverage by lot quality assurance sampling compared with 30-cluster sampling in a primary health center in India. Bulletin of WHO. **74**(3): 269-74.

3- Singh J, Sharma RS, Goel RK, Verghese T (1995): Concurrent evaluation of immunization program by lot quality assurance sampling. *J. Trop. Pediatr,* Aug. **41**(4): 215-20.

4- Valades JJ (1991): Assessing child Survival programs in developing contries testing lot quality assurance sampling. Dec., Harvard University Press.