ORIGINAL ARTICLE

Optional Immunizations as Parameter of Parent's Behavioral Change in Health Needs of Their Off-springs

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Abstract

Services provided by Utan Kayu M.C.H. Clinic, Medical School, University of Indonesia, were introduced to the surrounding community through individual as well as through group contacts. It is desirable to measure the degree of health education efforts of the clinic especially of parents behavioral change in health needs of their children. For the purpose of the study a stratified systematic record sampling of the active-files of patient in 1975 were undertaken. Data on immunization against tuberculosis, smallpox, diphtheria, pertussis, tetanus, cholera, typhoid and para-typhoid fever, and poliomyelitis as well as data on other purposes of health visit were processed. The analysis of data revealed that parents took their off-springs to the centre more for medical treatment than for immunizations and consultation, in certain age groups, viz. the age-group of 1 year ($p < 0,01$) and the age-group of 5 to 12 years ($p < 0,05$). In periodical assessment optional immunizations therefore may be used as parameter for parent's behavioral change in health needs of their off-springs.

Received 20th. February 1979.

Introduction

The results of health campaign are often not fully apparent. Therefore it is desirable to measure the health effort in general or a certain health program in particular where possible. Turner (1964) suggested the following kinds of measurement : quantity or amount (of limited value), such as number of persons reached; quality of program as judged by experts or by people's reaction to the program; changes in knowledge; changes in behavior or changes in health status. Maternal and child health centers provided programs among others of: imunizations; nutritional advices and growth surveillance; medical treatment; family planning as well as prenatal care.

The purpose of this study is to observe the changes in behavior of parents regarding the services of M.C.H. clinics by measuring either the percentage of children immunized or comparing the purposes of visit. Changes in knowledge do not necessarily lead to changes in behavior. The percentage of immunized infants and children as well as pattern of immunization (complete, incomplete, booster injection) may reflect the changes in behavior of parents regarding the health needs of their offsprings. A program which requires little or no behavioral change on the part of the beneficiary, as in the case with malaria control or smallpox vaccination, is much more likely to succeed than a program which requires considerable long-term change in the behavior of the beneficiaries. This problem may in fact be aggravated in the case of nutrition programs. It is not the beneficiary, the child, whose behavior must change; it is the mother's behavior in regard to her child feeding practices which must change in order for the child to benefit (Wray, 1974).

Material and methods

For the purpose of the study all active files of patients in 1975 (Table 1) were regrouped in age-groups maintaining the alphabetic sequences.

Age groups chosen were 0 to 3 months; 3 months to 12 months; 1 to 5 years and 5 to 12 years. The following information was obtained from the records of each of these children : name, parent's names address, birth date, date of last visit to the center, list of each immunization received by the child, and list of type of other visits (medical treatment or consultation). For each group, 50 samples were taken (a stratified systematic record sampling).

Data of immunization against tuberculosis, smallpox, diphtheria, pertussis, tetanus, cholera, typhoid and paratyphoid fever and poliomyelitis were taken. Data on the purpose of health visits were also recorded. All data were processed manually according to the usual proper statistical method.

Results

In the age-group of 3 months to 12 months only 14% of infants (7 of 50)

completed the immunizations against diphtheria, pertussis and tetanus. In the age-group op 1 to 5 years only 4% of children (2 of 50) received the first booster injection. In the school-age period the children had no record of having received any booster immunization. Seventythree and a half percent (147 of 200) had no record of having received immunizations against preventable diseases mentioned above (see table 2). Table 3 and table 4 revealed more or less similar results in regard to immunizations against poliomyelitis, against cholera, typhoid and paratyphoid fever. Higher results were obtained in the field of smallpox and tuberculosis vaccination (See table 5 and table 6). As far as for the other types of visit were concerned, in the age-group below 12 months there was no significant difference between visit for health surveillance or consultation and for medical treatment ($p>0,05$) (see table 8, 9 and 10). Tables 8, 11 and 12 revealed that parents took their children to the center rather more for seeking medical treatments than for health surveillance, immunizations and nutritional advices ($p < 0,01$ for the age-group 1 to 5 years and $p<0,05$ for the age-group above 5 years).

Discussion

Mc. Daniel et al., (1975) demonstrated that less than 40% of active patients of pediatricians whose practices were studied had completed recommended immunizations by the age of 2 years. The paper clearly demonstrated the inability to achieve optimal immunization levels among patients in private practice, but also those in public clinics. Unlike military recruits or school-age children, infants and preschoolers are not a "captive" population. Parents must be motivated to bring their children for preventive care (Marcuse, 1975). The data Collected by the Department of Public Health and Preventive Medicine Medical School, University of Indonesia, undertaken by the medical students of Trisakti University in a field survey (1975) revealed that the results of immunizations against tuberculosis and smallpox were higher than the results of immunizations against diphtheria, pertussis, tetanus and poliomyelitis (see table 7). The latter mentioned immunizations were optional and depended on higher motivated parents for preventive care; while the first mentioned programs were community oriented and were more or less on compulsary basis. Our results confirm to the results mentioned above as far as immunizations go. Optinal immunizations therefore may be used as a parameter of behavioral changes of parents in health needs of their off-springs.

TABLE 1 : *Number of active patients by age-groups (1975)* *

Age group (mos)	No. of patient	%
0 —	146	10,5
3 —	373	27
12 —	455	33
60 —	408	29,5
Total	1382	100

* Source: Utan Kayu M.C.H. center (1975)

TABLE 2 : *Per cent of infants and children who completed the recommended immunizations (D.P.T.) by age-groups* *

Age group (mos)	IMMUNIZATION										Total	%
	Basic						Booster					
	1X	%	2X	%	3X	%	IX	%	no	%		
0 —	5	10	—		—		—	—	45	90	50	100
3 —	11	22	2	4	7	14	—		30	60	50	100
12 —	5	10	8	16	4	8	2	4	31	62	50	100
60 +	2	4	2	4	1	2	4	8	41	82	50	100
Total	23	11,5	12	6,0	12	6,0	6,0	3,0	147	73,5	200	100

* Source : Utan Kayu M.C.H. center (1975).

TABLE 3 : *Per cent of infants and children who completed the recommended immunizations (polio) by age-groups* *

Age group (mos)	IMMUNIZATION										Total	%
	Basic						Booster					
	1X	%	2X	%	3X	%	IX	%	no	%		
0 —	3	6	—	—	—	—	—	—	47	94	50	100
3 —	11	22	2	4	6	12	1	2	30	60	50	100
12 —	6	12	7	14	2	4	3	6	32	64	50	100
60 +	2	4	2	4	1	2	1	2	44	88	50	100
Total	22	11	11	5,5	9	4,5	5	2,5	153	76,5	200	00

* Source Utan Kayu M.C.H. Center (1975).

TABLE 4 : *Per cent of infants and children who completed the recommended immunizations (CHOTYPA) by age-groups**

Age group (mos)	IMMUNIZATION										Total
	Basic						Booster				
	IX	%	2X	%	3X	%	IX	%	no	%	
0 —	5	10	—		—				45	90	50
3 —	11	22	2	4	7	14			30	60	50
12 —	4	8	8	16	4	8	2	4	32	64	50
60 +	2	4	1	2	1	2	4	8	42	84	50
Total	22	11	11	5,6	12	6,0	6	3,0	149	74,5	200

* Source : Utan Kayu M.C.H. center (1975).

TABLE 5 : *Per cent of infants and children who completed the recommended immunizations (smallpox) by age-groups* *

Age group (mos)	IMMUNIZATION									
	Basic						Booster		Total	%
	IX	%	IX	%	2X	%	no	%		
0 —	25	50	—		—		25	50	50	100
3 —	17	34	1	2	—		32	64	50	100
12 —	17	34	—		1	2	32	64	50	100
60 +	2	4	—		—		48	96	50	100
Total	61	30,5	1	0,5	1	0,5	137	68,5	200	100

* Source : Utan Kayu M.C.H. center (1975).

TABLE 6 : *Per cent of infants and children who completed the recommended immunizations (B.C.G.) by age-groups* *

Age group (mos)	Indirect		Direct No				Total
	1 X	%	1 X	%		%	
0 —	4	—	27	54	19	38	50
3 —	12	24	11	22	27	54	50
12 —	10	20	7	14	33	66	50
60 +	12	24	2	4	36	72	50
Total	38	19	47	23,5	115	57,5	200

* Source : Utan Kayu M.C.H. center (1975).

TABLE 7 : *Per cent of children who received immunization by type and by completeness in Kayu putih area (1975)* *

Type	Completeness	No. of children	%
Small-pox	+	418	78,72
	—	113	21,28
D.P.T.	Complete	116	21,85
	incomplete	34	6,40
	—	381	71,75
B.C.G.	+	83	57,06
	—	14	42,94
Polio	Complete	434	15,63
	incomplete	14	2,64
	—	434	81,72

* Source : Report of Field activities, medical students, University of Trisakti (1975), supervised by the Department of Public Health & Preventive Medicine Medical School, University of Indonesia

Notes : + immunized against
— not immunized against

TABLE 8 : *Mean and S.D. of visits by type and age group in Utan Kayu M.C.H. Clinic (1975)*

Age group (mos)	Type of visits					
	Consultation			Medical treatment		
	Mean	S.D.	N *	Mean	S.D.	N
0 —	1,32	1,73	29	1,2	0,4	26
3 —	2,12	1,15	30	2,5	1,55	41
12 —	3,55	4,09	30	7,15	6,47	48
60 +	3,5	4,27	23	6,56	8,02	47

* Further details of N see table 9, 10, 11 and 12.

TABLE 9 : *Types of visits by number of age-group 0 — 3 mos*

Consultation	No. of patient	Treatment	No. of patient	Consultation and treatment	Number of patient
C_1	19	T_1	17	C_1 T_1	3
C_2	4	T_2	4	C_1 T_2	1
C_4 *	1			C_2 T_3	1
Total	24		21		5

Notes : C_4 = four times visit for health surveillance
T_2 = twice visit for medical treatment
$p > 0{,}05$

TABLE 10 : *Types of visit by number of patient age-group 3 — 12 mos*

Consultation	No. of patient	Treatment	No. of patient	Consultation and treatment	No. of patient
C_1	4	T_1	7	C_1 T_2	3
C_2	3	T_2	7	C_1 T_3	1
C_3	1	T_3	5	C_1 T_4	1
C_5	1	T_4	1	C_1 T_6	2
				C_2 T_1	3
				C_2 T_2	2
				C_2 T_6	1
T				C_3 T_1	1
				C_3 T_3	1
				C_3 T_5	3
				C_3 T_6	1
				C_3 T_7	1
				C_5 T_2	1
Total	9		20		21

$p > 0{,}05$

TABLE 11 : *Types of visits by number of patient age-group 1 — 5 years*

Consultation	No of patient	Treatment	No. of patient	Consultation and treatment	Number of patient
C_1	2	T_1	9	C_1 T_1	1
		T_2	3	C_1 T_2	1
		T_3	2	C_1 T_3	1
		T_4	2	C_1 T_4	2
		T_9	3	C_1 T_7	1
		T_{10}	1	C_1 T_8	2
				C_1 T_9	1
				C_1 T17	1
				C_1 T_{22}	1
				C_2 T_5	1
				C_2 T_7	1
				C_3 T_6	1
				C_3 T_{17}	1
				C_4 T_8	1
				C_4 T_9	2
				C_4 T_{11}	1
				C_4 T_{15}	1
				C_5 T_1	1
				C_5 T_4	1
				C_5 T_{15}	2
				C_6 T_{12}	1
				C_{14} T_{16}	1
				C_{20} T_{31}	1
				C_4 T_7	1
Total	2		20		28

$p < 0{,}01$

TABLE 12 : *Types visits by number of patient age-group 5 — 12 years*

Consultation	No. of patient	Treatment	T_{15} No. of patient	Consultation and treatment	No. of patient
C_1	3	T_1	15	C_1 T_1	1
		T_2	4	C_1 T_2	2
		T_3	4	C_1 T_4	3
		T_6	2	C_1 T_9	1
		T_7	1	C_1 T_{12}	1
			1	C_1 T_{13}	1
				C_1 T_{22}	1
				C_2 T_{10}	1
				C_2 T_{13}	1
				C_2 T_{17}	1
				C_4 T_{11}	1
				C_5 T_{12}	1
				C_6 T_7	1
				C_{10} T_{22}	1
				C_{11} T_{36}	1
				C_{17} T_{29}	1
				C_4 T_4	1
Total	3		27		20

$p < 0{,}05$

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