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RESEARCH ARTICLE

EVALUATION OF THE EFFECTIVENESS OF FORMULATED AWARENESS PACKAGE ON BENEFICIAL EFFECTS OF ICDS FOR UPGRADATION OF MOTHER CHILD HEALTH CARE

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ABSTRACT

The Department of Women and Child Development within the Ministry of Human Resource Development initiated the Integrated Child Development Services (ICDS) in 1976 in India. Under the Integrated Child Development Services programme, anganwadi centres provide children with health, nutrition, and education services from birth to six years of age and a nutritional and health services to pregnant and breastfeeding mothers. Study was made in rural tea garden areas to find out the coverage status of Integrated Child Development Service facilities and one awareness package was formulated to improve the coverage levels. Study found that the good, poor and nil levels of knowledge and attitude in percentage of families of post-awareness group were significantly higher than the knowledge and attitude levels of pre-awareness group due to the effective role of awareness package. There were significant improvement in the coverage of DPT, polio and measles in the post-awareness group than the pre-awareness group. Awareness campaign noticeably increased the coverage of iron and folic acid (IFA) and tetanus toxoid (TT) in post-awareness group. The impact of awareness package was further established as it was successful to decrease the effects of socio-economic barriers in coverage levels of Integrated Child Development Service facilities.

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INTRODUCTION

Integrated Child Development Services (ICDS) is Central Govt. sponsored scheme run by the Department of Women & Child Development and social Welfare of state Govt. (Park, 2005). The ICDS, instituted in the mid- 1970's, has proven effective in reducing infant mortality in the areas where it has operated. The program offers supplementary nutrition and basic health care to children, pregnant women, and mothers of young children. The main object of the scheme is to improve nutritional and health status of women and children in the age group of 0-6 years, to lay foundation of proper psychological, Physical and social development of children to reduce the incidence of mortality, morbidity, malnutrition and school dropout, to enhance the capability of the mother to look after the moral health and nutritional need of the children through proper nutrition and health education. ICDS delivers a package of six services to various categories of beneficiaries: Immunization, Health Check-up, Supplementary Nutrition, Pre-school education, Nutrition and Health Education and Referral services. ICDS in India is a response to the challenge of breaking a vicious cycle of malnutrition, impaired development, morbidity and mortality in young children, working in convergence with other flagship programmes such as National Rural Health Mission, Sarva Shiksha Mission and others (Manhas *et al*., 2012). Different study (Singh *et al*., 1993; Chiani *et al*., 1994) found positive impact of ICDS on nutritional status of children. But awareness, involvement and participation of the mothers, along with other categories of beneficiaries are far less than it was emphasized previously.

People of North Bengal are comparatively illiterate and poor tea garden workers. Parents go for hard work every day to earn money for the feeding of their family member including children. They do not have the time and knowledge to understand the other essential elements of life like government schemes, child health, immunization, mothers health etc.

Keeping this in mind the study was carried out on poor tea garden workers of Darjeeling and Jalpaiguri districts of West Bengal to evaluate the role of awareness campaign on the levels of knowledge, attitude and practicess about beneficial effects of ICDS for the improvement of mother child health care.

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MATERIALS AND METHODS

Selection of subjects

Pre-awareness group: The subjects of the pre-awareness group were collected from 'Darjeeling and Jalpaiguri districts of North Bengal' during the period of July 2005 to June 2008. Four blocks of 'Darjeeling district' (Kharibari, Naxalbari, Matigara and Phansidewa) and three blocks of 'Jalpaiguri district' (Malbazar, Rajganj and Dhupguri) were selected for pre-awareness study. For the said study, 1252 children and 1118 mothers were selected from 1064 families. The current beneficiaries were 88 women and 245 children.

Post-awareness group: In this study, 362 families were selected from the Atal tea estate of Naxalbari block of 'Darjeeling district' and considered as post-awareness group. Awareness package was delivered to the post-awareness group during the period of July 2008 to June 2010. The subjects of the post-awareness group were collected during the period of July 2010 to June 2012. Post-awareness group consists of 388 mothers and 418 children. The current beneficiaries were 34 mothers and 80 children.

General Information

Questions were prepared to identify the levels of knowledge, attitude and practices of utilization of beneficial effects of ICDS. An awareness package for the improvement of the levels of knowledge, attitude and practices regarding beneficial effects of ICDS was designed after pre-awareness study and it was applied on the families of the post-awareness group. The levels of knowledge, attitude and practices of the community members about the services delivered by ICDS scheme was identified in both the pre-awareness and post-awareness groups. The observations were compared with the pre-awareness group to find out the beneficial role of awareness campaign on the utilization of ICDS by the children and women of the post-awareness group families. The answers of pre-structured questionnaire were included in a specific point scale. The levels of knowledge, attitude and practices in relation to services of ICDS utilization were identified according to the points achieved by the concerned parents and family members. A score table with 10 point was designed for each domain to identify the levels of knowledge, attitude and practices of the family members about ICDS utilization. The subjects were included in nil, poor and good categories according to the score 0%, 1% to 50% and 51% to 100% respectively. All the packages were delivered to the families of the study area. Regular visit was made to increase the levels of knowledge, attitude and practices of ICDS utilization.

Random sampling method: The subjects for the present study were selected from the seven blocks of 'Darjeeling and Jalpaiguri districts' by multistage random sampling and simple random sampling method. Family members and children were selected from the ICDS coverage area to identify ICDS utilization status and to find out the effect of awareness package through house to house survey.

Questionnaire method: A door to door survey was made and parents were asked formulated questions to identify the levels of knowledge, attitude and practices of ICDS utilization by pregnant and lactating women, and children. Informations were collected from both the pre-awareness and post-awareness groups.

Statistical analysis: Chi-square test and G test were performed to find out the association of formulated awareness package with the levels of knowledge, attitude, and practices regarding the upgradation of ICDS utilization by the beneficiaries.

RESULTS

Informations were collected from the 1064 families of pre-awareness group and 362 families of post-awareness group under the coverage area of ICDS. The total number of beneficiaries attached with the anganwadi centre in last 10 yrs was 1118 women and 1252 children in pre-awareness group. The same in post-awareness group were 388 women and 418 children. Study also identified the number of beneficiaries currently attached with the anganwadi centers. The current beneficiaries in pre-awareness group were 88 mother and 245 children and the current beneficiaries in post-awareness group were 34 mother and 80 children.

Awareness package was applied on families to improve the level of knowledge about the beneficial effects of ICDS in the study area. Study found that the good, poor and nil levels of knowledge in percentages of families of pre-awareness group were 29.69%, 50.18% and 20.11%. The levels of good, poor and nil knowledge in percentages of families of post-awareness group were 41.44%, 53.32% and 5.24%. Study also revealed that the levels of good, poor and nil attitude in percentage of families of pre-awareness group were 44.17%, 40.03% and 16.72% and the said levels in post-awareness group were 64.36%, 29.29% and 6.35%.

Study found that the BCG, DPT, Polio and Measles coverage levels in the percentages of children under the coverage area of ICDS of pre-awareness group were respectively 100%, 83.6%, 83.6% and 74.69%. The BCG, DPT, Polio and Measles coverage levels in the percentages of children under the coverage area of ICDS of post-awareness group were respectively 100%, 97.5%, 98.75% and 91.25%. The TT coverage status in the percentage of women of pre-awareness and post-awareness groups was 78.4% and 82.35%. The IFA consumption in the percentage of women of pre-awareness and post-awareness groups was 59.09% and 82.35%.

Study found that the health check up done by the percentage of children of pre-awareness and post-awareness groups was 74.28% and 92.5%. After the application of awareness package, the study identified that the supplementary nutrition taken by the percentage of children of post-awareness group were increased from 83.26% to 95%. Pre-school education under the ICDS taken by the percentage of children of pre-awareness and post-awareness groups was 83.26% and 95%. The health check up service utilization by the percentage of pregnant and lactating women of pre-awareness and post-awareness groups was 64.77% and 88.2%. Study found 5.66% improvement in supplementary nutrition service utilization in the percentage of women of post-awareness group than the pre-awareness group. The services of nutrition and health education

utilization by the percentage of pregnant and lactating women of pre-awareness and post-awareness groups were 71.59% and 83.5%.

The awareness package was able to improve the levels of utilization of ICDS by the beneficiaries belong to different economic levels i.e.Rs-2000-4000/month family income group and Rs-4001-6000/month income family group. Similarly, the utilization levels of ICDS facilities in the beneficiaries of illiterate, primary educated, schedule caste, schedule tribe, nuclear families and joint families of post-awareness group was improved significantly in respect to pre-awareness group.

Table 1. Distribution of ICDS beneficiaries of pre-awareness and post-awareness groups

	Pre-awareness		Post-awareness	
	Mother	Children	Mother	Children
Total Beneficiaries (Last 10 yrs)	1118	1252	388	418
Current Beneficiaries (2010-2012)	88	245	34	80

Data were expressed in number.

Table 2. Levels of knowledge and attitude of the families of pre-awareness and post-awareness group

ICDS	Pre-awareness (1064)	Post-awareness (362)	$\chi 2$
Knowledge			
Good	316(29.69)	150(41.44)	48.42
Poor	534(50.18)	193(53.32)	p<0.001
Nil	214(20.11)	19(5.24)	
Attitude			
Good	470(44.17)	233(64.36)	50.07
Poor	416(40.03)	106(29.29)	p<0.001
Nil	178(16.72)	23(6.35)	

Subjects were classified in three categories according to their levels of knowledge and attitude. Data was expressed in number, and percentage within parenthesis. Chi square test was performed for identification of level of significance.

Data were expressed in number, and percentage within parenthesis. G test was performed for identification of level of significance.

Data were expressed in number and percentage, G test was performed between the numbers of pre-awareness and post-awareness groups.

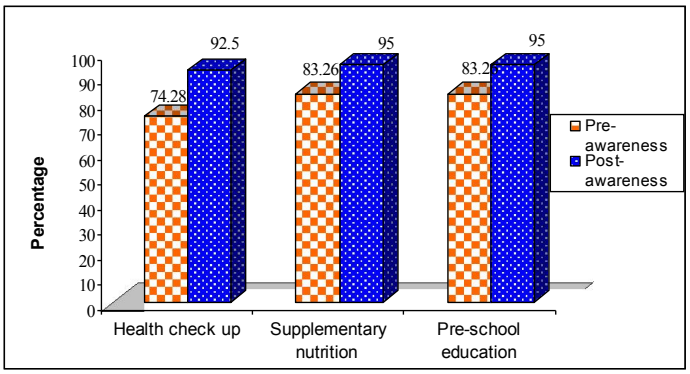

Figure 1. Utilization of ICDS facilities by the children of pre-awareness and post-awareness group

Data were expressed in percentage, For health check up, G=12.70, p<0.01, for supplementary nutrition, G=7.06, p<0.01 and for pre-school education, G=7.06, p<0.01.

Table 3. Immunization status of the children and women beneficiaries of pre-awareness and post-awareness group

	Children below 6 yrs					Pregnant and lactating mothers		
	Benefi ciaries	BCGN(%)	DPTN(%)	PolioN(%)	Measles N(%)	Beneficiaries	TT N (%)	IFA N (%)
Pre-awareness	245	245 (100)	205 (83.6)	205 (83.6)	183 (74.69)	88	69 (78.4)	52(59.09)
Post-awareness	80	80 (100)	78 (97.5)	79 (98.75)	73 (91.25)	34	28 (82.35)	28 (82.35)
G test		NS	11.51, p<0.01	15.02,p<0.01	10.17 p<0.01		0.05,NS	5.22,p<0.05

Table 4. Changes in utilization of benefits under ICDS scheme by women of different socio-economic categories of the post-awareness group in respect to pre-awareness group after application of awareness package

Socio-economic characters	Utilization of ICDS by the beneficiaries						
	Pre-awareness (1118)			Post-awareness(388)			G-test
	Beneficiaries	Total	%	Beneficiaries	Total	%	
Income/month							17.58, p<0.001
Rs-2000-4000/	306	452	67.69% 67.61%	134	158	84.81% 84.97%	22.50, p<0.001
Rs-4001-6000/	382	565	91.08%	164	193	89.18%	0.001, NS
Rs-6001- 10000/	92	101		33	37		
Mothers education							26.44, p<0.001
Illiterate	268	456	58.77% 76.89%	126	155	81.29%	9.77, p<0.02
Primary	426	554	79.62%	172	197	87.3% 91.66%	2.15, NS
Above primary	86	108		33	36		
Caste							
SC	275	446	61.65% 71.15%	121	148	81.76% 87.01%	20.73, p<0.001
ST	417	570	86.27%	181	208	90.62%	17.07, p<0.001
Gen	88	102		29	32		0.11, NS
Family type	487						19.59, p<0.001
Nuclear family	293	662	73.56% 64.25%	216	248	87.09% 82.14%	16.19, p<0.001
Joint family		456		115	140		

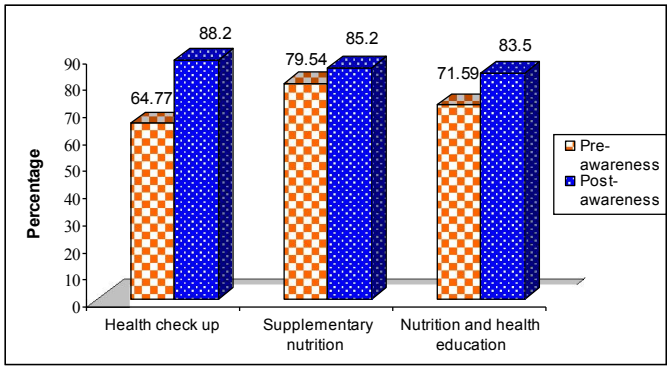

Figure 2. ICDS service utilization by the pregnant and lactating mothers of pre-awareness and post-awareness group

Data were expressed in percentage, For health check up, G=6.08, $p<0.05$, for supplementary nutrition, G=0.22, NS and for nutrition and health education, G=8.34, $p<0.01$.

DISCUSSION

Present study found fifteen centers in pre-awareness areas and five centers in post-awareness group. The coverage area of each anganwadi centre was 75-120 families. The educational qualifications of 60% workers were madhyamik and 40% workers was higher secondary. Each Anganwadi worker (AWW) was catering to population of around 1000 in rural and urban areas and to around 700 in tribal areas (ICDS, Govt. of India, 2010). The mean population served by AWW in our study was 742.6 ± 166.82 where as in other study (Datta *et al*., 2010) was 1202.40 ± 562.82 people. The mean age of anganwadi workers was 30.6 yrs in present study which was quite similar (33.8 yrs) to the study done at Vadodara district (Desai *et al*., 2012). Present study noted 90% trained worker but the study in Vadodara has shown that 80% workers were trained. Pre-awareness study noted that the levels of utilization of integrated child development services by the beneficiaries was lower in the study area and that may be due to poor levels of knowledge and attitude of the anganwadi worker and the beneficiaries. It was the aim of the present study to improve the utilization levels of ICDS facilities by the beneficiaries of post-awareness group.

The studies done in past have strongly concluded on the need of improved levels of knowledge and awareness among anganwadi workers but regrettably it was found to be the most underrated aspect of their job profile (Gopaldas *et al*., 1990; Bhasin *et al*., 2001). Similar observations also noted in the current study and to improve the utilization levels of ICDS benefits, improvement in the levels of knowledge and attitude of the family members were the only hope in the study area. Study found a remarkable improvement in the levels of the knowledge and attitude of the families of post-awareness group which may be due to the impact of awareness programme. The higher percentage of poor level of knowledge was observed in post-awareness group than the pre-awareness group may be due to the remarkable improvement of the subjects with nil knowledge categories into poor knowledge category. Improved levels of knowledge and attitude of the families were increased the tendency for utilization of ICDS for both the pregnant and lactating mother, and children of the said group.

According to one report (Manhas *et al*., 2012), Polio vaccinations (100%) were available at anganwadi centre followed by DTP (89 percent), BCG (85%), and Typhoid (78%) and the report was quiet similar with pre-awareness study. Pre-awareness study identified that the coverage levels of BCG, DPT, Polio and Measles were 100%, 83.6%, 83.6% and 74.69% and post-awareness study found the coverage levels of BCG, DPT, Polio and Measles were 100%, 97.5%, 98.75% and 91.25%. Study noted a remarkable improvement in the coverage of DPT, Polio and Measles which supports the effective role of awareness package in the utilization of ICDS facilities by the beneficiaries of post-awareness group. Similarly the coverage levels of TT and IFA in pre-awareness group was 78.4% and 59.09% but in post-awareness group was 82.35% and 82.35%. Awareness campaign noticeably increased the coverage of IFA and TT in post-awareness group may be due to the awareness of family members about the importance of iron and folic acid for the health of mother and intrauterine baby. Utilization of health services by the children like health check up, supplementary nutrition, preschool education was improved in the post-awareness group due to awareness campaign door to door and its impact on the positive mind set up of the family members. Although the health check up and nutrition and health education service utilization were increased remarkably in the women of post-awareness group but supplementary nutrition service utilization was not improved to that level in post-awareness group in respect to pre-awareness group. From the direct interaction it was noted that the women go to ICDS centre in their free time mostly at 12 noon while returning from the garden after first half of work. But supplementary nutrition were prepared and served after 2 pm in the study area. As the women of the poor rural families remain engaged in tea garden work and family work, they were failed to use supplementary nutrition services regularly. But the improved levels of knowledge and attitude of the family members of post-awareness group were directly related with the improved levels of utilization of the services like health check up and nutrition and health education in women.

Present study also found a positive impact of ICDS on improvement of children nutritional status like some other studies (Chiani *et al*., 1994). Study found a significant association between the impact of awareness package and the level of under-weight in the children beneficiaries of the post-awareness group than the pre-awareness group. According to the report, low status of woman and their lack of nutritional knowledge were important determinants of high prevalence of underweight children (Antony and Laxmaiah, 2005). Increased levels of knowledge and attitude for utilization of ICDS services in the family members mostly women were reflected in the form of improved level of under-weight children in post-awareness group. Importance of formulated package was established as the study found a remarkably decreased in percentage of children with stunted height in post-awareness group in respect to pre-awareness group. Awareness package also noticeably improved the percentage of women with under-

nutrition in post-awareness group which further strengthen the effective role of awareness package in the study area.

Study identified the relation of socio-economic conditions with utilization of ICDS services both in the pre-awareness and post-awareness groups. The impact of awareness package was established as the package was found to be significantly associated with most of the socio-economic barrier in the study area. It was revealed from the door to door study that most of the families were in favour of the utilization of ICDS facilities to get the supplementary nutrition for the children. Socio-economic categories including Rs-6001-10000/month income group, above primary education group and general caste showed a non-remarkable improvement in the levels of ICDS utilization in post-awareness stage may be due to the capacities of families to provide nutrition to the children and the people with negative attitude for ICDS utilization in those categories.

Conclusion

From the current study it can be concluded that:

1. Awareness campaign was found to be significantly associated with the levels of knowledge and attitude of the women regarding ICDS utilization. Study from the percentage point of view showed a remarkable improvement in the levels of knowledge and attitude.
2. Improved levels of knowledge and attitude about ICDS were able to upgrade the immunization status remarkably in women and children.
3. Awareness about ICDS increased the consumption levels of supplementary nutrition in women and children.
4. Awareness about ICDS decreased the role of socio-economic barriers about ICDS utilization in the families.

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