



EVALUATION OF THE BEHAVIOUR CHANGE COMMUNICATION (BCC) AS AN ANTI-MALARIA STRATEGY IN GOA, INDIA

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ABSTRACT

To evaluate the Behaviour Change Communication (BCC) strategy undertaken during the Anti Malaria Month (AMM) campaigns in terms of knowledge, attitudes and practices about malaria in the population. Cross sectional study design was used. The study areas were selected based on the selection criteria provided in Anti Malaria Month Operational Guide. Both the districts in Goa were selected for the study. From each of the districts two PHC areas and one UHC area were identified by random selection. In each PHC area two sub centre areas with one village from each sub centre area was selected and from each UHC area one urban ward was randomly selected with a total of 400 participants covering ten sites from the entire state. Participants were aged 19 years and above with almost equal number of males and females. Data was collected by house to house visits by trained researchers through interviews using a pre-tested, semi-structured questionnaire for the purpose of these evaluations. Data was analyzed using SPSS software. Chi square test was calculated and a p value ($p < 0.05$) was taken as statistically significant. Study subjects were familiar with the symptoms of malaria with majority (81%) of the study participants correctly identifying fever as the main symptom of Malaria. Regarding the modes of spread of malaria, majority (79.5%) of the individuals in our study correctly associated mosquito bite with transmission of malaria. Knowledge of malaria, its main symptoms, modes of transmission and mosquito breeding sites was quite high in the study population but this knowledge has not satisfactorily translated into preventive practices adopted by them.

KEY WORDS: Behavior, Health Knowledge, Attitudes, Practices, Malaria, Cross-Sectional Studies.

INTRODUCTION

Malaria is an endemic disease in India (WHO, 2012) as well as in Goa (a coastal state of western India) with a seasonal trend. The incidence of malaria is especially high during the monsoon season. To alleviate the situation, inculcate sustained and appropriate health seeking behaviour amongst all stakeholders and to solicit cooperation from them, an expanded and structured Anti Malaria Month (AMM) campaign is observed yearly during the monsoon months of June, July, and August to create awareness regarding malaria and to motivate and empower people to adopt malaria preventive practices. This is then followed by an evaluation of this Behaviour Change Communication (BCC) strategy during the Anti Malaria Month (AMM) campaign in the community. Behaviour Change Communication (BCC) strategy has been adopted by National Vector Borne Disease Control Programme to achieve the objectives of the anti malaria month campaign. Behaviour change communication (BCC) is an integrated process that involves linkage of advocacy, social mobilization through intersectoral convergence and communication efforts with enhancement of knowledge, beliefs, values and attitudes, resulting in suitable practices at individual, family and societal levels. The Objective of the study was to evaluate the Behaviour Change Communication (BCC) strategy undertaken during the Anti Malaria Month (AMM) campaigns in terms of

knowledge, attitudes and practices about malaria in the population

MATERIALS AND METHODS

Cross sectional study design was used. The study sample and areas were chosen based on the selection criteria provided in Anti Malaria Month Operational Guide (NVBDCP, 2005). Since Goa has only two districts, both the districts were included for the evaluation. From each district two Primary Health Centre areas and one Urban Health Centre area were identified by random selection. From each Primary Health Centre area two sub centre areas were selected randomly and within each sub centre area one village was randomly selected and from each Urban Health Centre area one urban ward was randomly selected. Ten study areas (eight villages and two urban wards) were randomly selected, and from each village and urban ward 40 adult residents (a total of 400) with equal proportion of males and females aged 19 years and above, were included as individual beneficiaries for the purpose of evaluation. Individuals were interviewed by house to house visits by trained researchers using a pre-tested, semi-structured questionnaire for the purpose of these evaluations. Data collection was done in September 2012, immediately following the Anti-Malaria Month campaign in Goa (June to August 2012). Data was analyzed using Statistical Package for the Social Sciences software. Chi square test was calculated and a p value ($p < 0.05$) was

taken as statistically significant. The study received approval by the Institutional Ethics committee.

RESULTS & DISCUSSION

Our evaluation survey covered equal proportion of males and females with majority of the respondents (58.3%) belonging to the age category of 20-40 years. About 28% of the respondents were educated at least up to class 10 while the proportion of illiterates was 21.8%. Our study findings showed that almost all participants (96.8%) had

heard of malaria barring a few from the rural areas. This finding is consistent with studies conducted by other authors (NVBDCP, 2005; Sharma AK, et al., 2007; Tyagi P, et al., 2005). Study participants in the selected study areas were familiar with the symptoms of malaria with majority of them (81%) correctly identifying fever as the main symptom (table 1), followed by chills (46.7%) and rigors (22.2%) and the difference between the genders was statistically significant for symptoms of fever ($p=0.006$) and rigors ($p=0.05$).

TABLE 1: Malaria related Knowledge/Perception of the study participants

Knowledge/Perception	Male n=198 No (%)	Female n=202 No (%)	Total n=400 No (%)	χ^2	p value
Fever as symptom of Malaria	171(86.3)	153(75.7)	324(81)	7.329	0.00678
Rigors	52(26.2)	37(18.3)	89(22.2)	3.649	0.05610
Mode of spread of malaria	158(79.7)	160(79.2)	318(79.5)	0.021	0.88380
Mosquito breeding site	153(77.2)	141(69.8)	294(73.5)	2.865	0.09052
Prevention of mosquito breeding	118(59.5)	111(54.9)	229(57.25)	0.882	0.34775
Clearing of drains	87(43.9)	78(38.6)	165(41.2)	1.170	0.27997
Government health services for malaria	128(64.6)	132(65.3)	260(65.0)	0.022	0.88332
Provision of anti malarial drugs	134(67.6)	131(64.8)	265(66.2)	0.357	0.55020
Insecticidal fogging activities	124(62.6)	107(52.9)	231(57.7)	3.821	0.05062

Multiple responses from the respondents were taken into account hence the total of percentages do not add to 100.

Other symptoms listed were headache (12.7%), vomiting (11.5%) and profuse sweating (2.2%). Similar observations were found in other studies (NVBDCP, 2005; Sharma *et al.*, 2007; Habitai *et al.*, 2009). Regarding the modes of spread of malaria, majority (79.5%) of the individuals in our study correctly associated mosquito bite with transmission of malaria. Misconceptions regarding modes of spread were minimal. The analysis done by National Vector Borne Disease Control Programme also found that more than 85% percent of the respondents from all the study areas of selected states in India had the requisite knowledge about spread of malaria (NVBDCP, 2005). Most of the study participants (73.5%) correctly identified stagnant water bodies and a good proportion (43%) mentioned water holding containers, few (6%) participants said open water tanks, while only a very small percentage (3.2%) of participants identified unused wells as a possible breeding site for mosquitoes. A substantial proportion (57.2%) of respondents mentioned removal of water holding containers, 41.2% said clearing of drains, a good proportion (40.5%) thought that weekly emptying of water from storage containers, while others (21.7%) opined the use of insecticides would help prevent mosquito breeding. In our study findings only seven (1.75%) knew about the use of larvivorous fish as a method to prevent mosquito breeding, similar to the findings in the survey conducted by National Vector Borne Disease Control Programme (NVBDCP, 2005). About 66.2% were aware about provision of anti malarial

drugs, 65% knew about availability of blood smear examination facilities are part of Government health services for control of malaria, 72.7% were aware that anti malaria treatment was free of cost in Government health settings. Majority of participants (76.2%) knew that Malaria was curable. Although 64.7% were aware of the insecticidal spraying activity as an initiative from the government to prevent mosquito breeding, only 45.7% confirmed to anti-larval insecticide spraying activities in their areas of residence during the transmission season, it is much lower compared to the surveys carried out in other states of India (NVBDCP, 2005). The reported use of bed nets while sleeping was low (25%) in our study compared to other studies (NVBDCP, 2005; Hlongwama KW, et al., 2009). Majority (76.3%) did not feel the need to use bed net, while others (7.5%) mentioned discomfort as the main reason for non use of bed net (table 2). However, 54.7% of the respondents were willing to own a bed net. The knowledge of insecticide treated bed net was low (17.3%). Most participants (68.2%) used mosquito repellants and creams while others (19.5%) tried remedies like smoking their houses either by burning incense or dried cow dung cakes to prevent mosquito bites. This is consistent with the findings of representative data collected from 21 states in India (Sharma AK, et al., 2007). Although the practices adopted by the study participants like clearing of drains by 46.5% and weekly emptying of water storage containers by 40.2% to prevent mosquito breeding, it was not up to the expected level.

TABLE 2: Malaria related Attitudes and Practices of the study population

Attitudes & practices	Male n=198 No (%)	Female n=202 No (%)	Total n=400 No (%)	χ^2	p value
No felt need to use bed nets	105(77.2)	108(75.5)	213(76.3)	0.008	0.930
Discomfort using bed nets	12(8.8)	9(6.2)	21(7.5)	0.518	0.471
Willing to purchase bed nets	116(58.6)	103(50.9)	219(54.7)	2.239	0.127
Weekly emptying of water storage containers	86(43.4)	75(37.1)	161(40.2)	1.653	0.198
Use bed nets	54(27.2)	46(22.7)	100(25.0)	1.080	0.298
Use of fan to avoid mosquito bites	51(25.7)	69(34.1)	120(30.0)	3.360	0.066
Use mosquito repellants and creams	128(64.6)	145(71.7)	273(68.25)	2.358	0.125

Multiple responses from the respondents were taken into account hence the total of percentages do not add to 100.

CONCLUSION

The level of awareness regarding malaria, its main symptoms, modes of transmission and mosquito breeding sites is quite high in our study population with no statistically significant difference noted among the genders, but this knowledge however has not satisfactorily translated into preventive practices adopted by the study population in Goa. Since the subjects in the representative sample covering the entire state of Goa are quite knowledgeable about Malaria, subsequent Anti-Malaria Month campaigns should lay more emphasis on reinforcing the preventive practices adopted for the control of malaria. Both the knowledge as well as the use of larvivorous fish was poor among the study population and the same holds true for the knowledge and use of insecticide treated bed nets. Knowledge regarding availability of free diagnostic and treatment services at various levels of health care was satisfactory. The fact that diagnosis and treatment of malaria is free of cost in all government health care settings in Goa needs to percolate at all levels. Local communities also need to make the best use of existing healthcare facilities as Goa is privileged to have one of the best government health care services in the whole country. Coincidentally there has been a substantial reduction in the number of cases as well as deaths due to malaria in Goa, with the Central Bureau of Health Intelligence recording a total of 9755 registered Malaria cases and 11 deaths due to Malaria in 2007, while in 2011 there were 1231 malaria cases with a single death which is almost 87% reduction in the number of Malaria cases (CBHI, 2011). Although several factors play a role in reducing the mortality and morbidity due to malaria, the contribution from active community participation by way of Behaviour change should not be underestimated; this will go a long way in the prevention and control of Malaria.

ACKNOWLEDGEMENT: The authors would like to thank Dr. Prasad Hegde, Dr. Dipika Kamat, Dr. Reshma

Kankonkar and Dr. Gauri Kamat, Medical interns for their assistance in the data collection process.

REFERENCES

- Central Bureau of Health Intelligence (CBHI) (2011) National Health Profile (NHP) of India- 2011. New Delhi: Central Bureau of Health Intelligence; p52.
- Habtai, H., Ghebremeskel, T., Mihreteab, S., Mufunda, J., Ghebremichael, A. (2009) Knowledge, Attitudes and Practices (KAP) about malaria among people visiting Referral Hospitals of Eritrea in 2008. Journal of the Eritrean Medical Association JEMA. 4(1):42-46.
- Hlongwana, K.W., Mabaso, M. L.H., Kunene, S., Govender, D., Maharaj, R. (2009) Community knowledge, attitudes and practices (KAP) on malaria in Swaziland: A country earmarked for malaria elimination. Malaria Journal, 8:2.
- National Vector Borne Disease Control Programme (NVBDCP) Directorate General of Health Services (2005) Anti-Malaria Month Campaign: Operational Guide. New Delhi: Directorate General of Health Services, Ministry of Health and Family Welfare; p10-68
- Sharma, A.K., Bhasin, S., Chaturvedi, S. (2007) Predictors of knowledge about malaria in India. J Vect Borne Dis. 44:189-197.
- Tyagi, P., Roy, A., Malhotra, M.S. (2005) Knowledge, awareness and practices towards malaria in communities of rural, semi-rural and bordering areas of east Delhi (India). J Vect Borne Dis. 42:30-35.
- World Health Organization (WHO) (2012) World Malaria Report 2012. Geneva: World Health Organization; P.63-66.