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The effect of education using modified health belief model on Swachh Bharat Mission in understanding health care practices among adult population of Belagavi

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ABSTRACT
Swacchta which refers to cleanliness has been the most hypothetical state of a person keeping himself clean and the inclination of achieving and maintaining it. In Sanskrit "Saucam" refers to cleanliness and most importantly Bhagvad Gita cites this word is various slokas. Environmental sanitation is yet a bigger health problem in India. People's participation is of prime need to tackle issues related to sanitation and hygiene. Government of India launched Swachh Bharat Mission in 2014 to create a wave of behavior change among public pertaining to health and hygiene. The study aimed to test the effectiveness of modified health belief model-based education regarding Swachh Bharat Mission on knowledge of health care practices among adult population of Belagavi. A pre-experimental study was conducted using pretest-posttest on 284 adults of Belagavi who were assigned randomly into experimental and control group (n= 142 each). Education program was carried out at planned intervals using various interventions and data was collected using Health Belief Model Construct pertaining to healthcare practices. Results were interpreted using descriptive and inferential statistics using SPSS 21.0 version software. The education program showed good improvement in post test scores (p=0.0001). Alongside the intervention was effective for adults showing average to good levels of knowledge and various components of health belief model compared to control group. The present study concluded that Health belief model based education regarding SBM was effective in improving the knowledge of health care practices among adult population.
Keywords: *Swachh Bharat Mission, Health Belief Model, Health care practices*

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INTRODUCTION

Health and hygiene are the two very prime elements for the overall well-being and development of a human being. Moreover, sanitation and health care practices have been the most cost-effective public health interventions in the country. In the past few decades, sanitation has become a major health issue among the public in India. Other than the mortality and morbidity issues, poor sanitation has been affecting every aspect of mankind including education, lifestyle, use of public properties, per capita income and general wellbeing [1]. "Sanitation is more important than independence", as quoted by Mahatma Gandhiji, who also evidenced cleanliness and sanitation as a way of living, including emphasis on a healthy environment [2]. Around 62 million tonnes of waste is generated in India every year, out of which only 60% was collected and 15% processed [3]. Waste is thrown on the streets which are not something new, also open defecation still persists in many rural parts of India. Spitting and urinating in public places without knowing the consequences it can have on health has all become regular practice among people. But such actions will lead to growing filthiness, emerging illness and infectious diseases making the country sicker [4]. Such unhygienic practices result in the spread and transmission of pathogens which cause diarrhea accounting to around two million child deaths annually in the world, half of them being in India [5]. The problem of poor sanitation is a result of individual behavioral resistance including social taboos of caste in handling human excreta [6]. The amount of waste also increases as economy grows because of increased use of plastics, paper and non-degradable items which pose risk to the environment [7]. By 2030, there will be around 5 billion of the population living in urban areas [8].

A study being carried out evidenced that the sanitation measures and incorporation was not equating with the use. It was also found that only 5.8% increase was seen in use of latrine as compared to 10% increase in its coverage [9]. Around 49.8% people practiced open defecation in India as per 2011 reports. As a result, the Government enhanced importance on sanitation using various campaigns [10, 11]. Swachh Bharat Mission which is the present version of the National Sanitation Campaign was given birth by our Prime Minister on 2nd Oct, 2014 with an aim to make India free of open defecation by 2nd Oct, 2019 [12]. Although, various efforts have been made under SBM in order to increase awareness on healthcare practices and hygiene, use of toilets has been a challenging factor. In a study conducted in five states of India where 3235 houses and 22,787 members were involved, it was found that though 40% of those households had proper toilets, but one member of the family was still following open defecation [13]. As a result of this, it is evident that there are interventions needed to promote and assess behavioral changes among the people. Community participation is very important to achieve success in any of the health or sanitation campaigns. Moreover, Government has spent huge money in promoting Swachh Bharat Mission through the use of mass media, awareness campaigns, including in the school and college curriculum and conducting various programs to increase people participation and witness the behavior change. In view of the above, this study was undertaken to implement and evaluate the effective of Health Belief Model based education on knowledge regarding health care practice among adult population of Belagavi.

Objectives:

1. To evaluate the effectiveness of Health Belief Model based education regarding Swachh Bharat Mission on health care practices among adult population in experimental & control group.
2. To associate pre-test levels of knowledge regarding health care practices with demographic characteristics.

MATERIAL AND METHODS

A community based quasi experimental study was conducted among adult population of Belagavi, who were predominantly the youth workers of Nehru Yuva Kendra which is under the Ministry of Youth Affairs and Sports, Government of India and permission was taken from the competent authority. Ethical permission was obtained from the Independent Ethics Committee. The study was conducted between September 2021 till March 2022, wherein 284 samples were selected randomly from the list given using simple random sampling covering all the talukas of Belagavi. The intervention was designed using the health belief model which was modified and designed to implement the sanitation behavior change. Alongside, the intervention included face to face community meetings, presentations, hand hygiene demonstration and awareness sessions. Data was collected using semi structured questionnaire of which one section composed of socio-demographic characteristics and the other section was the health belief model construct consisting of questions pertaining to health care practices. Tabulation of data was done using Microsoft excel and statistical analysis using SPSS 21.0 version including descriptive and inferential statistics.

RESULTS AND DISCUSSION

The results were classified under the following headings:

Distribution according to Sociodemographic profile of adult population.

Majority of the study participants 62.6 % (experimental group) and 78.1% (control group) were between 18-25 years of age respectively. 71.8% were males who received intervention compared to 54 % who did not. Majority 55 % and 57% belonged to Hindu religion in both the groups. Almost adults were education studying undergraduate course predominantly in both groups and only 2% illiterate in control group. Sixty two percent belonged to nuclear family in intervention group whereas only 37% were living joint, similarly 71% of the adults in nonintervention group belonged to nuclear families and 28% in joint families. Seventy one percent were student as far as occupation was concerned which was almost similar in the control group.

Table:1 Distribution according to levels of health care practices regarding Swachh Bharat Mission among adult population.

Pre-test scores (Mean scores) n=284

HBM Components	Agree	Neutral	Disagree
Perceived Susceptibility	17.5%	7%	2.6%
Perceived Severity	11.52%	8.32%	3.3%
Perceived Benefits	14.76%	6.8%	3%
Perceived Barriers	21.6%	2.88%	2.7%
Cues to Action	9.2%	2.8%	1%
Self-Efficacy	10.9%	3.3%	6%

The pretest scores of levels of health care practices using the components of health belief model showed that the knowledge regarding susceptibility measures, severity of the situation, what would they benefit if they keep themselves healthy, obstacles which might hinder them and what action they are supposed to take in order to make themselves self sufficient was not as expected according to the HBM construct answers.

Table 2: Post-test scores (Mean scores)
Experimental & Control Group (**n=284**)

HBM Components	Agree		Neutral		Disagree	
	Exp.Group	Ctrl.Group	Exp.Group	Ctrl.Group	Exp.Group	Ctrl.Group
Perceived Susceptibility	7.6%	8.2%	0.8%	1.4%	2.7%	2%
Perceived Severity	10.5%	9%	0.7%	0.8%	1.8%	2%
Perceived Benefits	15.3%	10%	0.4%	0.6%	0.3%	1.8%
Perceived Barriers	1.6%	5%	0.4%	1%	4.8%	3.3%
Cues to Action	4.9%	3.9%	0.4%	0.5%	0.9%	1.2%
Self-Efficacy	16.6%	10.9%	0.08%	1.9%	0.08%	1.6%

It is clear from the post test scores that there has been improvement in the understanding of susceptibility measures, severity of the situation, what would they benefit if they keep themselves healthy, obstacles which might hinder them and what action they are supposed to take in order to make themselves self sufficient as the responses were far better compared to pretest.

Table 3: Comparison of experiment and control group with pretest and posttest scores of total Healthcare practices and its components by independent t test n=284

Variables	Time points	Experiment group		Control group		t-value	p-value
		Mean	Std.Dev.	Mean	Std.Dev.		
Healthcare Practices	Pretest	47.72	3.55	46.97	3.54	1.7741	0.0771
	Posttest	49.81	2.75	46.56	4.10	7.8505	0.0001*
Perceived susceptibility	Pretest	9.42	1.51	9.15	1.53	1.4838	0.1390
	Posttest	7.87	1.27	8.61	1.58	-4.3045	0.0001*
Perceived Severity	Pretest	8.28	1.39	8.08	1.24	1.3096	0.1914
	Posttest	9.22	1.33	8.83	1.71	2.1330	0.0338*
Perceived Benefits	Pretest	8.52	1.47	8.80	1.50	-1.5601	0.1199
	Posttest	11.40	0.95	8.98	1.66	15.0749	0.0001*
Perceived Barriers	Pretest	9.55	1.68	9.60	1.58	-0.2545	0.7993
	Posttest	4.94	1.32	6.84	1.77	-10.2745	0.0001*
Cues to Action	Pretest	4.59	1.05	4.75	1.11	-1.2120	0.2265
	Posttest	4.51	1.45	4.11	1.41	2.3673	0.0186*
Self Efficacy	Pretest	7.35	1.67	7.09	1.20	1.5100	0.1322
	Posttest	11.89	0.45	9.37	1.86	15.7174	0.0001*

*p<0.05

Table depicts that health care practices in general as seen in posttest in both the groups, the mean score was 49.81±2.75 in experimental and 46.56±4.10 in control group, with calculated (t=7.850, p=0.0001) was highly significant.

Perceived susceptibility (t=4.304, p=0.0001), Perceived Severity (t=2.133, p=0.033), Perceived Benefits (t=15.074, p=0.0001), Perceived Barriers (t=10.27, p=0.0001), Cues to Action (t=2.367, p=0.018), Self-Efficacy (t=15.717, p=0.0001) were all found to be better in the posttest as evidenced by t-test including p-value which was p<0.05. This shows that the education program using modified health belief model was effective in bringing about the behavior change and improvement in the knowledge of health care practices.

Association between knowledge of health care practices and selected demographic variables.

Chi-square test was used to analyze the association. The results revealed that according to age of adult population (χ^2 =0.350, df=1, p=0.554), gender (χ^2 =0.933, df=1, p=0.334), religion (χ^2 =2.034, df=2, p=0.983), educational status (χ^2 =1.295, df=3, p=0.730), type of family (χ^2 =0.350, df=1, p=0.544),

occupational status (χ^2 =6.447, df=4, p=0.168) no significant association was evidenced with the pretest levels of healthcare practices in experimental group.
Similarly in the control group, age of adult population (χ^2 =0.002, df=1, p=0.969), gender (χ^2 =3.475, df=1, p=0.062), religion (χ^2 =0.940, df=2, p=0.625), educational status (χ^2 =1.036, df=4, p=0.973), type of family (χ^2 =0.433, df=1, p=0.510), occupational status (χ^2 =4.307, df=4, p=0.366) there was no significant association with the pretest levels of healthcare practices as evidenced by the p-value.

CONCLUSION

The mean posttest knowledge scores of adult populations on knowledge of health care practices were significantly higher than their mean pre-test knowledge scores at 0.05 level of significance. There was no significant association between the pretest level of knowledge regarding health care practices with selected demographic variables at 0.05 level of significance. Hence, the Health Belief Model based education regarding Swachh Bharat Mission was effective.
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