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Research Article

EDUCATING PEOPLE AT GRASS ROOT LEVEL TO COMBAT ENERGY CRISIS

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A B S T R A C T

The practice of reducing the quantity of energy used is referred as Energy Conservation. An energy conscious society can be developed only by imparting awareness at the grass root level. Intervention programmes targeting the end users of energy in households, play a vital role in building up an energy conscious society. Conscientizing people on energy crisis, will change their life style to a great extent and bring about a change in their energy consumption pattern. This paper highlights the need and method of educating people on energy conservation at grass root level through intervention programme. The intervention study was conducted among 38 homemakers in Ernakulam city. The study revealed that education can increase the awareness and practice level of people on energy conservation and motivate them to initiate changes in their consumption practices. The values nurtured at home by an informed energy manager in the family will also leave a ripple effect on all other sectors of energy consumption.

INTRODUCTION

Energy is the foundation of human life which decides the existence of mankind. As the famous saying goes 'energy can neither be created nor destroyed' does not mean energy is available abundantly at all times. Harnessing energy for the captive use of mankind involves either upsetting the natural rhythm of creation like building of dam for hydroelectric power generation, burning of fossil fuel like coal for running steam turbines or building of nuclear power plants has one or other potential dangers.Currently India ranks sixth as an electricity generating country and accounts for more or less 4% of the global electricity generation per annum (Sahu, 2008).

The present day civilization is supported on the energy base.The fast growing population and increased amount of disposable income have put tremendous pressure on the planet's natural resources. Thus domestic sector experiences the most pronounced changes in its patterns of fuel use over time as energy is needed for many household activities such as cooking, heating water, heating indoor space in colder climates, lighting and other energy end uses.

With increasing disposable income and changes in life styles, households tend to move from the cheapest and less convenient fuels to more convenient and more expensive ones and eventually to the most convenient and usually most expensive types of energy. There is also a correlation between the choice of cooking fuels and the value of women's time (Dzioubinski and Chipman, 1999). Women who enter the formal work force demand more convenience in their use of household fuels.

Energy requirement in our country is increasing at a very rapid rate. This alarming increase in energy consumption has lead the nation to an energy crisis. There is shortage of energy due to fast depletion of fossil fuels and the increase in demand for energy due to the increase in demand for energy due to the increase in population (Goyal, 2009). Unlike other natural resources, energy obtained from fossil fuels depletes after its use.The energy demands are increasing while conventional energy sources are diminishing at much faster rate (Bharucha, 2005). The amount of natural resources used up every year began spurting around 1900, steady economic growth since then had led to extraordinary levels of unsustainable consumption. The rise in consumption is visible, but its effects are only partially noticeable (Jackson & Jackson, 1998).

The ever increasing need has resulted in increased carbon foot prints, depletion of ozone layer etc. which threatens the very existence of life on this planet (Reddy *et al.,* 2009; Cunningham and Cunningham, 2007). In this context, minimal use of energy, conservation at user level is the only solution to contain this giant serpent. The energy crisis should be tackled from the household itself. To get rid of this exponential growth of energy consumption, people should be educated from the grass root level. For this proper informal education should be given to at least a person from a family.

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Intervention programme play a vital role in providing education at domestic level. An intervention programme is basically an educational programme which include certain strategies designed to produce behavioural changes from their routine way of doing or making them aware of the unnoticed changes of energy loss. Interventions can influence a person's knowledge, attitudes, beliefs and skills. Intervention programme are outcome based education with participant centered learning philosophy that focuses on measuring participant's performance which are called outcomes (Mathew and George, 2012).

Objectives of the Study

- To plan and conduct an educational intervention programme on energy management in the domestic sector for empowering the end users to conserve energy at household level
- To evaluate the impact of the educational intervention programme in raising the knowledge and practice levels of the learners in energy management at household level

METHODOLOGY

The basic treatise dwells upon the fundamental concept of family resource management viz., family uses resources to meet demands (Gross, *et al.,* 1981). The input to the family system is in the form of matter, energy and information. This can further be classified as resources and demands. The family uses the available resources to meet the demands and the met demands come out as outputs which has an impact on the environment. Any change or modification in inputs will have a significant change in the output.The throughput components have two sub systems within the resource management system of each individual.

The premise of this research is that alteration in individual's perception of energy management through educational inputs will bring about a shift in energy usage and conservation habits which will eventually bring down the energy consumption levels of the households. When several families make positive changes in their energy consumption behaviour, the impact, in the long run, will be reflected on the near and farther environment of the homes.The sample of the study consisted of 38 homemakers. The homemakers were selected as the learners as they were the administrators and the chief supervisors of handling and controlling the use and care of energy at household level. The sample selected comprised of homemakers in the middle and high income groups where energy wastage is comparatively high compared to that of lower income group families.

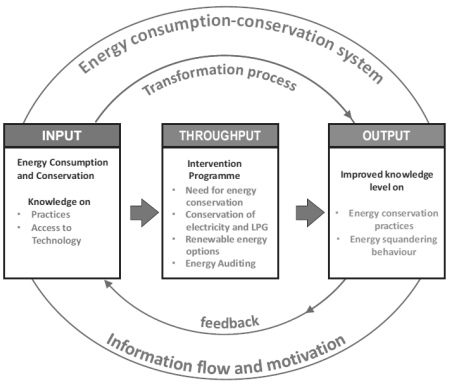

Figure 1 Conceptual Framework for the Intervention

RESULTS OF THE STUDY

The intervention programme was intended to educate, motivate and empower the target group towards inculcating an energy saving culture.The programme consisted of a lecture on energy conservation techniques aided by Information Communication Technologies (ICTs) which include an intervention module and an end user manual. The Educational Intervention Programme was conducted for a group of 38 homemakers in the middle and high income group families of the Residents association of South Kadavantrawho volunteered to attend the programmeat Club House hall, Skyline City Park Apartment,Kadavantra, Ernakulam. The lecture given in local language (Malayalam) was guided by the Intervention Module prepared by the researcher. An end user manual entitled '*Better Ways of Saving Energy at Home'* was given at the end to retain the knowledge gained. The programme was of 2 hours duration.

Change in Knowledge level of the Participants

The change in the knowledge level of the participants on energy conservation was statistically tested. The hypotheses formulated for the same are stated below:

H_0: There is no difference in the awareness level of the sample population before and after intervention. (i.e. the mean score of the awareness level is same before and after intervention).

H_1: There is a significant difference in the awareness level of the sample population before and after intervention. (i.e. the mean score of the awareness level after the intervention is greater than that of before).

Paired sample t-test is used in 'before-after' studies. Accordingly to find out the difference in mean scores of the pre and post-test, the paired t - test was conducted and the result is given in Table 1.

Table 1 Overall Comparison of Pre and Post test Knowledge of Homemakers

Variables	Test	N	Mean	SD	t-value	p - value
Awareness regarding conservationtechniques in home lighting	Pre	38	2.53	1.16	-12.810	<0.001
	Post	38	4.76	0.49		
Awareness regarding LPG conservation	Pre	38	2.58	1.39	-9.687	<0.001
	Post	38	4.66	0.48		
Awareness regarding conservationtechniques in the use of household equipment	Pre	38	3.89	2.14	-12.121	<0.001
	Post	38	7.37	0.88		
Awareness regarding use of renewable energy	Pre	38	1.50	0.92	-11.239	<0.001
	Post	38	2.87	0.34		
Willingness to adopt energy conservation techniques	Pre	38	1.89	0.65	-6.012	<0.001
	Post	38	2.58	0.50		
Total	Pre	38	12.39	3.71	-20.726	<0.001
	Post	38	22.24	1.32		

* Significant at 1% level

The results indicate that in all the topics dealt with, the difference was significant as the p value was less than 0.01. So the null hypothesis (H_0) is rejected and it may be concluded that there is a significant difference in the awareness levels of the sample population before and after the intervention. (i.e. the mean score of the awareness level after the intervention is greater than scores before the intervention).

Change in Practice level of the Participants

To find out the impact of the intervention at practice level, the electricity consumption of the selected 38 households was collected for the period preceding the awareness programme (July, 2017) and the period succeeding the programme (January, 2018). Though the data is affected by seasonal variations, the two periods are comparable since the consumption pattern is similar during these seasons. The two readings were compared using paired t- test (one- tailed) and presented in table 2.

The Hypotheses Formulated for the same are Stated below

H_0: There is no difference in the practice level of the sample population before and after intervention. (i.e. the mean score of the practice level is same before and after intervention).

H_1: There is a significant difference in the practice level of the sample population before and after intervention. (i.e. the mean score of the practice level after the intervention is greater than that of before).

Table 2 Comparison of the Practice level of the respondents before and after the Intervention Programme

Month	N	Mean	SD	t value	p- value
June - July , 2017	*38*	599.18	304.6	2.11	0.021*
Dec -January , 2018	*38*	564.03	290.81		

* Significant at 5% level

The results of the paired t - test indicate that there is a significant decrease in the consumption as the p value is less than 0.05. Hence it is concluded that there is a positive change in the practice level of the participants which can reduce the residential energy consumption to great extent

CONCLUSION

The study reveals that education can increase the awareness and practice level of people on energy conservation and motivate them to initiate changes in their consumption practices. The education programme can bring about significant difference in the awareness level of people on energy saving practices, there by contributing a considerable solution to the global problem of energy crisis. The values nurtured at home by an informed energy manager in the family will also leave a ripple effect on all other sectors of energy consumption.

Bibliography

Bharucha, E (2005), Text book of environmental studies, University peers India Pvt.Ltd., Hyderabad.

Cunningham, W. P and Cunningham, M.A (2007) Principles of Environmental Science, Inquiry and Applications, Tata McGraw-Hill Publishing Company Limited, New Delhi.

Dzioubinski, O and Chipman, R(1999), "Trends in consumption and production; Household energy consumption", DESA discussion paper no.6, United Nations.

Goyal, K.K (2009), Renewable Energy, Mahaveer& Sons, New Delhi.

Gross, I., Crandall, E., & Knoll, M. (1981). Management for modern families (4thed.). Englewood Cliffs, NJ: Prentice-Hall.

Jackson, A.R.W and Jackson, J.M (1998) Environmental Science, Longman Group Ltd, New Delhi.

Mathew, T.K. and George P.T (2012) Modern Trends in Educational Practices, Rainbow Book Publishers, Chengannur.

Reddy, B.S, Assenza, G.B, Assenza, D and Hasselmann, F (2009) Energy Efficiency and Climate Change, SAGE PublicationsIndia Pvt. Ltd., New Delhi.

Sahu, S (2008) Trends and Patterns of Energy Consumption in India, retrieved from http://mpra.ub.uni-muenchen.de/16774/.

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