



International Journal of Medicine and Health Profession Research

Journal home page: www.ijmhpr.com



TO STUDY THE EFFICACY OF MODIFIED HEARTH APPROACH FOR ADOLESCENTS

M. Meera*¹, R. K. Anuradha², V. Sreedevi³

¹*Department of Food and Nutritional Sciences, Sri Sathya Sai Institute of Higher Learning, Anantapur, Andhra Pradesh, India.

^{2,3}Department of Home Science, Sri Venkateshwara University, Tirupati, Andhra Pradesh, India.

ABSTRACT

Introduction: Positive deviance/ hearth is an effective tool in involving individuals or communities to work together to solve a problem and to discover the solution from within by utilizing the existing resources. **Aim and Objective:** The aim of the study is to assess the efficacy of modified hearth approach for adolescents. **Methodology:** A study was carried out among 240 high school students of 8th and 9th class in Anantapur. **Results:** At base line, significant difference was observed in nutrition knowledge levels of high school students and their mothers among the control and experimental group exposed to modified hearth approach ($p < 0.05$), indicating heterogeneity of the groups and the groups are independent. Post intervention revealed a significant improvement in the knowledge levels of experimental group of adolescents and their mothers ($p < 0.01$) indicating the efficacy of modified hearth approach. However significant difference was not observed in the mean scores of post intervention-1 and post intervention-2 indicating the retention of knowledge gained during intervention in high schoolers and their mothers. **Conclusion:** Modified hearth approach was found effective in educating high schoolers and their mothers.

KEYWORDS

Hearth approach, Heterogeneity, High schooler and Intervention.

Author for Correspondence:

Meera M,
Department of Food and Nutritional Sciences,
Sri Sathya Sai Institute of Higher Learning,
Anantapur, Andhra Pradesh, India.

Email: meeramanik@yahoo.com

INTRODUCTION

Positive deviance is an asset based approach used for promoting health and wellbeing by using individuals or groups whose behavioural practices differ from others to achieve solutions to problems than the other members in the community with similar barriers¹ by identifying the solution within the community itself²⁻⁴. Hearth approach involved the parents of malnourished children to rehabilitate them

by using low cost, locally available resources based on local knowledge and affordability^{5,6}. Positive deviance/ hearth programs educate the mothers and target the behavioural changes in them to achieve improved nutritional status in their children and to obtain a permanent rehabilitation by enabling women to learn from each other in the community and by respecting their culture and makes the program more accepted in the community^{7,8}. The Vietnam hearth program revealed the reduction in the prevalence of severe child malnutrition by 82% after two years of exposure to the program⁹⁻¹¹. Similar findings were also observed by researchers¹²⁻¹⁴.

By reviewing its strength, an attempt was made by the investigator to use the modified hearth approach to create awareness in high school students and their mothers.

MATERIAL AND METHODS

Study design

Cross sectional study.

Study subjects

8th and 9th class students.

Study area

Four schools located in Anantapur district, Andhra Pradesh, India.

Sample size

All 8th and 9th class students who consented to participate in the study were selected. The sample size consisted of 240 students and their mothers. Two schools were randomly assigned as control group and remaining two schools were assigned as experimental group.

Data collection

A pre tested questionnaire was used for data collection from the subjects and consent was obtained from the principals/ correspondents of schools and from the study subjects before data collection. Data was analysed using SPSS v 20.0 with appropriate statistical tests. Post hoc analysis was conducted using RM Anova (repeated measure anova) to compute the effect of size of actual difference in nutrition knowledge between and within control and intervention group at base line,

intervention -1 (post-test) and intervention-2 (re-test) levels.

RESULTS AND DISCUSSION

Out of 240 high school students selected for the study, 120 belongs to experimental group exposed to modified hearth approach and 120 consists of control group not exposed to any experimental treatment. Comparison of mean scores of adolescents' nutrition knowledge based on group was done using repeated measure anova. Sound understanding of nutrition and healthy life style helps people to make better food choice and selection and to overcome malnutrition. Therefore nutrition intervention was given to school going adolescents of 8th and 9th class in Anantapur and for their mothers for a period of two and a half months.

At base line significant difference ($p < 0.05$) was observed in nutrition knowledge levels of school children between control and experimental group indicating heterogeneity of the groups and the groups are independent (Table No.1).

Maximum score: 54.

Post intervention results indicated a significant improvement in the knowledge levels in the experimental group. However significant improvement was not observed in the knowledge levels of control group not exposed to any treatment (Table No.2).

When comparisons were made between the mean improvement in the knowledge levels of control (0.08 ± 0.251 SE) and experimental (29.83 ± 0.419 SE), a significant increment in the experimental group compared to control group indicated the efficacy of intervention ($p < 0.01$), (Figure No.1).

Regarding the retention of knowledge gained through intervention (Table No.3) no significant difference was observed between mean scores of school children in experimental group of post intervention -1 and post intervention-2 indicating the retention of knowledge gained through intervention ($p > 0.05$).

Nutrition knowledge is one of the factors that affects the nutritional status of individual and community at large. Child targeted nutrition education programs with food and snack experiences helps the children

to learn better through hands on experiences¹⁵. Healthy choices intervention increased the knowledge of healthy food choices and behaviours of children¹⁶ and Howland et al expressed the need for repeatedly educating school-age children on healthy eating habits¹⁷. Participant centered nutrition education programs is a promising approach to help individuals adopt positive nutrition and health related behaviours.

Comparison of mean scores of knowledge among adolescents' mothers among the group and within subjects was done by using repeated measure anova. The results indicated a significant difference at base ($p < 0.05$) in the knowledge of mothers indicating heterogeneity in the study groups. However significant improvement in the knowledge level was observed in experimental group indicating the efficacy of intervention ($p < 0.01$), (Table No.4). Maximum score: 20.

The gain in knowledge level of control group was 0.07 ± 0.229 (SE) found not significant and experimental group significantly improved by 9.07 ± 0.339 (SE). Shaaban *et al* observed the similar findings¹⁸.

As regards to retention of knowledge gained through intervention, no significant difference was observed indicating the retention of knowledge gained through intervention. Family plays an important role in developing healthy eating habits¹⁹. Improving nutrition knowledge could act as one of the strategies for overcoming unhealthy eating behaviours in adolescents.

Table No.1: Mean scores of nutrition knowledge of adolescents based on groups at base line

S.No	Group	N	Pre-test score Mean \pm SD
1	Control	120	13.12 \pm 3.29
2	Experimental	120	15.07 \pm 3.320

Values are expressed as mean \pm SD

Table No.2: Mean scores of nutrition knowledge of adolescent after intervention-1

S.No	Group	N	Pre-test score Mean \pm SD	Post test score or intervention-1 Mean \pm SD
1	Control	120	13.12 \pm 3.29	13.19 \pm 3.19
2	Experimental	120	15.07 \pm 3.320	44.90 \pm 3.19

Values are expressed as mean \pm SD

Table No.3: Retention of knowledge level among experimental groups

S.No	Group	N	Post test score/ intervention-1 Mean \pm SD	Retest score/ intervention-2 Mean \pm SD	Significance
1	Control	120	13.19 \pm 3.19	13.64 \pm 3.60	$p > 0.05$
2	Experimental	120	44.90 \pm 3.19	45.25 \pm 2.51	$p > 0.05$

Values are expressed as mean \pm SD

Table No.4: Mean scores of nutrition knowledge of mothers of adolescents

S.No	Group	N	Pre-test score Mean \pm SD	Post test score Mean \pm SD	Retest score Mean \pm SD
1	Control	120	5.60 \pm 2.780	5.67 \pm 2.632	5.66 \pm 2.994
2	Experimental-1	120	6.93 \pm 3.146	16.00 \pm 2.208	15.02 \pm 2.179

Values are expressed as mean \pm SD

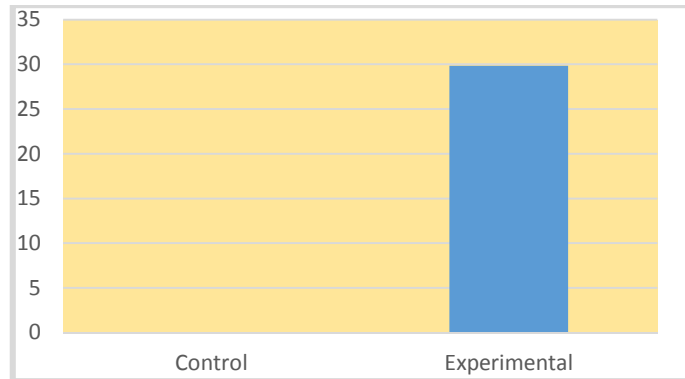


Figure No.1: Gain in knowledge among experimental groups

CONCLUSION

The study highlights the need of nutrition intervention with regard to educating high school students and their mothers about healthy food choices. Knowledge regarding sound eating habits and balanced diet may help to minimise malnutrition and an attempt should be made to create awareness among adolescents and their mothers at large.

ACKNOWLEDGEMENT

The authors acknowledge the support given by the principals/ correspondents of schools to carry out the research activity. The help rendered by the class teachers is appreciated. Special thanks are extended to students and their mothers who participated in the study.

CONFLICT OF INTEREST

None.

BIBLIOGRAPHY

1. Pascale R, Sternin J, Sternin M. "The power of positive deviance: How unlikely innovations solve the world's toughest problems", *Harvard business school publishing*, 60, Harvard way, Boston, US, 2010.
2. The Positive Deviance Initiative. *Basic Field Guide to the Positive Deviance Approach*. Tufts University, Retrieved from http://www.positivedeviance.org/resources/manuals_basicguide.html, 2010, 1-17.
3. Gary J C. Exploring the concept and use of positive deviance in nursing, *American Journal of Nursing*, 113(8), 2013, 26-34.
4. Marra A R, Pavao Dos Santos O F, Cendoroglo Neto M and Edmond M B. Positive deviance: A new tool for infection prevention and patient safety, *Current Infectious Disease Reports*, 15(6), 2013, 544-548.
5. Berggren W and Burkhalter B R. Chapter 1: Introduction, In O. Wollinka, E. Keeley, B. R. Burkhalter and N. Bashir, *Hearth nutrition model: applications in Haiti, Vietnam, and Bangladesh*, World Relief Corporation, Retrieved from http://pdf.usaid.gov/pdf_docs/Pnaca868.pdf, 1997, 1-145.
6. Berggren, W and Wray J. Positive deviant behaviour and nutrition education, *Food and Nutrition Bulletin*, 23(4), 2002, 7-8.
7. Berggren G. Nutritional education and rehabilitation program: A save the children project in Vietnam, *Save the Children*, 1995.
8. Levinson J and Ahrari M. Quantitative and qualitative Assessment of positive deviance - based nutrition interventions in minia Govamate, *Egypt, Save the children*, 2000.
9. Sternin M, Sternin J, March D R. Field guide: designing a community nutrition education and rehabilitation program using the 'positive deviance' approach, *Westport, conn, USA: Save the Children and BASICS*, 1998.
10. Sternin, M., Sternin J and Marsh D R. Scaling up a poverty alleviation and nutrition

- program in Vietnam, In T. J. Marchione, *Scaling up, scaling down: capacities for overcoming malnutrition in developing countries*, 1999, 97-117.
11. Mackintosh U, Marsh D R and Schroeder D G. Sustained positive deviant child care practices and their effects on child growth in Viet Nam, *Food and Nutrition Bulletin*, 23(4), 2002, 16-25.
 12. Olga Wollinka, Erin Keeley, Barton R, Burkhalter and Naheed Bashir. Health nutrition model: Application in Haiti, Vietnam and Bangladesh, Published for the U.S. Agency for International Development and World Relief Corporation by the Basic Support for Institutionalizing Child Survival (BASICS) Project, Arlington, VA, 1997.
 13. Lapping K, Schroeder D, Marsh D R, Albalak R and Jabarkhil M Z. Comparison of a positive deviance inquiry with a case-control study to identify factors associated with nutritional status among Afghan refugee children in Pakistan, *Food and Nutrition Bulletin*, 23(4), 2002, 28-35.
 14. Nishat N and Batool I. Effect of “Positive Hearth Deviance” on feeding practices and underweight prevalence among children aged 6-24 months in Quetta district, Pakistan: A comparative cross sectional study, *Sri Lanka Journal of Child Health*, 40(2), 2011, 57-62.
 15. Conteno I R. Children’s thinking about food and eating a Piagetian-based study, *J Nutr Educ*, 13(1), 1981, S86-S90.
 16. Jacobson D and Melnyk B M. A primary care healthy choices intervention program for overweight and obese school-age children and their parents, *Journal of Paediatric Health Care*, 26(2), 2010, 126-138.
 17. Howland J, Ozonoff A, Tao W, Wright S and Quatromoni P A. Effect of a school-based healthy eating intervention on overall food and nutrient intake in minority, low socioeconomic status middle school children, *Journal of the American Dietetic Association*, 110(9), 2010, A97.
 18. Shaaban S Y, Nassar M F, Shatla R H, Deifallah S M, Marzouk D and Abogabal W I. Nutritional Knowledge, Attitude and Practice of Predominantly Female Preschool Teachers: Effect of Educational Intervention, *British Journal of Medicine and Medical Research*, 4(8), 2014, 1739-1749.
 19. World health Organization. Development of a WHO growth reference for school-aged children and adolescents, *Bulletin of the world health organization*, 85(9), 2007, 660-667.

Please cite this article in press as: Meera M et al. To study the efficacy of modified hearth approach for adolescents, *International Journal of Medicine and Health Profession Research*, 4(1), 2017, 35-39.