Effect of Computer-Assisted Teaching (Cat) Regarding the Prevention of Malnutrition Among The Health Workers Working In Selected Community Health Centers

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Abstract: Background: Malnutrition is due to an unbalanced or inadequate diet. Mostly Preschoolers are more prone to affected by malnutrition. 7 out of 10 children in the community are malnourished. The lack of proper education and training in the field of nutrition among health care professionals has been a longstanding issue that has been highlighted in various publications. Health workers play an important role in promoting growth and development of children and to prevent malnutrition. Objectives: To find out the effect of computer-assisted teaching among the health workers of selected community health centers regarding the prevention of malnutrition. Methods: pre-experimental (one group pre-test post-test) design was used. Convenient type of sampling technique was used to select fifty no. of health workers of selected CHC of Bhubaneswar, Odisha as study sample and Self-structure questionnaire was used to collection of information. Result: Analysis is revealed that computer-assisted teaching improved the knowledge of health workers regarding the prevention of malnutrition (before intervention 39.93±11.86 & after intervention 77.66±7.76) significantly as calculated "t" value is 32.19 & calculated p-value was <0.0001 which is less than 0.05 level of significance. A statistically significant association was there in between the knowledge level with sociodemographic variables such as educational qualification & exposure to nutritional program. Conclusion: On the finding of the study, it was found that computer-assisted teaching is more practical in upgrading the knowledge of health workers on prevention of malnutrition which ultimately can improve the health status of children and prevent malnutrition.

Keywords: Computer-assisted teaching program, Malnutrition, Health workers.

INTRODUCTION

The present wholesome status mirrors the future's sound and beneficial age. Particularly for children appropriate nourishment is required for ideal growth & development and it should neither be over the top nor deficient. The learning capacity of children relies upon improved sustenance and health.[1] Ill-advised nourishment can expand the hazard for child mortality and grown-up sick health.[2] An all-around sustained children populace is required for a nation, to have a sound and profitable age in future. So, good & appropriate nourishment is fundamental for healthy flourishing individuals, families and a nation.[1]

Malnutrition is a quiet crisis in everywhere throughout the world. It incorporates both under-nourishment and over-sustenance that is extending from serious supplement deficiencies i.e. according to height low weight, according to age low height and low weight for age to outrageous obesity i.e.

overweight. Nutrition assumes a significant role in physical, psychological and enthusiastic advancement of children and thus, more importance has been provided to give good nourishment to developing populaces particularly in their early stages of life.[3] As indicated by the WHO report 2018, globally there were 149 million children aged below five were according to age low height, 49 million were according to height low weight and 40 million became overweight.[4] According to the UNICEF report of 2019, 69 % of children's deaths aged underneath five in India caused because of malnutrition. Every second child of the same age groups are affected by some type of malnutrition, includes 35% hindering, 17% squandering and 2% overweight. Just 42% of children, aged between six to 23 months takes the food at proper & adequate frequency whereas 21 percentage get adequately diverse diet.[5]

One of the significant hazard factors at the beginning of numerous communicable and non-communicable diseases in children is malnutrition.[6] It is not an immediate reason for death however contributes towards mortality & morbidity by decreasing the protection from infections.[7] Therefore, satisfactory nourishment or nutrition during earliest stages of life that is in childhood period is required for the proper growth & development and good health of children to their maximum capacity.[2]

An investigation was directed by the United Nations Special Reporter on the Right to Food i.e. from 2000 to 2008, death because of malnutrition represented 58% of the absolute death occurred in 2006: "In the world, approximately 62 million people, all causes of death combined, die each year. One in twelve people worldwide is malnourished. In 2006, more than 36 million died of hunger or diseases due to deficiencies in micronutrients".[12] Role of health workers, those are working under community health center, directly and indirectly, responsible for providing supplementary nutrition services, immunization services, periodic health checkups, referral services, preschooler education, and health education for children under five years, pregnant women and breastfeeding mother. Based on the consequences of different studies, WHO started in total six nations including India has grown a new worldwide norm to survey the physiological development, motor development & dietary requirement of children from births to 5 years of age. For checking the development of children through ICDS, the ministry of health adopted the new development benchmarks on fifteenth of August 2008 in India.[17]

Inadequate knowledge is more hazardous than ignorance, because an ignorant person may seek help but not a person with inadequate knowledge as he/she is unable to identify the deficiencies. Thus it may lead to poor services resulting in serious consequences. Similarly health workers with deficient knowledge may provide poor service. Further education brings desirable changes and that education should be student-centered and based their felt need.[18]

METHODS AND MATERIAL

In this study, a quantitative type of research approach and pre-experimental (one group pretest- and post-test) research design was used. Setting: It was done at Community Health Centre, Mendhasala, Bhubaneswar. Population: it comprised of all the Health workers of selected CHC. Sample: Health workers working under Mendhasala CHC, Bhubaneswar were selected as samples. Sampling technique: Convenient type of sampling method was used. Sample size: Total 50 nos. of Health workers were taken.

Data Collection tool: In the present study, a self-structured questionnaire for assessing the knowledge regarding malnutrition prevention was taken to collect data.

Self-structured Questionnaire for knowledge assessment on prevention of malnutrition: This tool consists of 30 no. of items dealing with the general concepts of nutrition, malnutrition and prevention of malnutrition. Each item has 3 options with one correct answer. For each correct answer the score was 1 point & for incorrect answer the score was 0. **Scoring**: Inadequate: $\leq 50\%$, Moderate: 50%-75%, Adequate: above 75%. The reliability value of the tool was 0.74.

Data collection procedure:
A formal prior written permission was obtained from the MO Incharge of Mendhasal, Khorda after getting ethical permission from SOA University's ethical committee. Based on inclusion & exclusion

criteria, the investigator identified the eligible samples and data was collected from the samples of Mendhasala CHC, Khordha by using a convenient sampling method. The investigator introduced themself to the subjects and explained the study's purpose. Then after giving information, written consent was obtained from each sample. Then socio-demographic information was collected from all 50 samples by giving questionnaires. Then self- structured knowledge questionnaire regarding the prevention of malnutrition was used to find out the pre-knowledge of samples. Then CAT was administered for 40-45minutes. The CAT consists of a definition of nutrition and types of nutrients, definition of malnutrition, causes of malnutrition, severe acute malnutrition, prevention of malnutrition, management of malnutrition, national nutritional program. Then Post-test was conducted on the seventh day. Finally, the participants were thanked for their cooperation & active participation throughout the study.

STUDY RESULTS
Data Analysis

For analyze of data, inferential statistics & descriptive statistics were used. Demographic data, pre & post-test knowledge scores on prevention of malnutrition were expressed as frequency and percentage. A paired t-test was done to assess the effectiveness of the CAT Program & for finding the association between pre and post-test knowledge scores with selected demographic variables chi-square test was done.

Sociodemographic characteristics of study participants

Out of 50 samples, maximum respondents (48%) were within 31-40 years of age. Majority (86%) were females. According to religion, the maximum (74%) were Hindu. According to Educational status, the maximum (58%) completed the ANM course. According to years of experience, the maximum (52%) were having within 11-20 years of experience. According to exposure to nutritional programs, most of the respondents (66%) attended the program. According to a source of information, the maximum (48%) got the information about malnutrition from the newspaper.

Pre & post-test knowledge score of health workers regarding the prevention of malnutrition
Figure 1, Bar diagram showing the percentage distribution of pre & post-test knowledge score of respondents regarding the prevention of malnutrition.

Figure 1 reveals that in a pre-test, the score showed that out of 50 samples, majority 72% had inadequate knowledge, 28% had moderate knowledge and no one had adequate knowledge whereas posttest knowledge score shows maximum 66% had adequate knowledge, 34% had moderate knowledge & no one had inadequate knowledge on prevention of malnutrition.

Effect of CAT on the level of knowledge regarding prevention on malnutrition among health workers
H_1- At $p \leq 0.05$ level of significance, there will be a significant difference between pre & posttest knowledge scores among the health workers on the prevention of malnutrition.

Table-1 reveals that pretest & post-test knowledge score on nutrition, malnutrition & prevention of malnutrition as calculated paired "t" value was 18.656, 28.17 & 16.905 respectively & calculated "p" value was <0.0001. The overall pretest & posttest knowledge score as "t" value was 32.195 & calculated "p" value was <0.0001. As the calculated "p" value was <0.05 level of significance, which meant we accepted the research hypothesis & rejected the null hypothesis. Thus, the CAT program was effective in enhancing the knowledge levels of Health workers on malnutrition prevention.

Table-1: Comparison of pretest & posttest knowledge score regarding malnutrition prevention by using the paired t-test

N=50

Sl. no	Knowledge Aspect	Respondent knowledge			Calculated value of Paired 't' test	Df	"P" value
		Pretest	Posttest	Enhancement			
		Mean± SD	Mean± SD	Mean± Standard Deviation			
1	Nutrition	34.5 ± 13.25	68.5 ± 11.87	34 ± 12.88	18.656	49	<0.0001**
2	Malnutrition	40.12±15.57	82 ± 8.85	42.14 ± 10.02	28.17	49	<0.0001**
3	Prevention of malnutrition	46 ± 16.62	79.75 ± 11	33.75 ± 14.11	16.905	49	<0.0001**
	Combined	39.93±11.86	77.66 ± 7.76	37.66 ± 8.36	32.195	49	<0.0001**

Findings related to Chi-square analysis of knowledge level on malnutrition prevention with selected sociodemographic variables.

It was revealed that the association between post-test knowledge level & the socio-demographic variables such as educational qualification, exposure to nutrition program was statistically significant as calculated chi-square value is 0.005, 0.04 respectively, the calculated p-value was less than 0.05 level of significance.

DISCUSSION

The study reveals that the mean & standard deviation value of overall pretest knowledge was 39.93 ± 11.86 whereas post-test knowledge was 77.66 ± 7.76. The overall pretest & posttest knowledge score as paired t value & p-value was 32.19 & <0.0001 respectively. So, accepting the research hypothesis & rejecting the null hypothesis was there, because the calculated p-value was less than 0.05 level of significance. Thus, the CAT program was practical in enhancing the knowledge level of Health workers on malnutrition prevention. This present study was contributed by the study directed by Ayesha Saeed, et al. (2017), as the result showed that after CAT, mean pretest score was 5.080 (+ 3.148) which increased to 11.360 (+ 1.800) in the posttest (t= - 9.908, p=0.001*, CI= -7.588 - -4.972). It was concluded that nutritional education significantly increases the nutritional knowledge of preschool children.[8] Similar Mr.Vinod, V.Bagilkar et al. (2015) studied the knowledge and attitude on malnutrition among parents of under-five. The finding of the study revealed that is a strong positive correlation between knowledge and attitude (r=0.097) regarding malnutrition among under-five children's parents. .it shows if knowledge of parents increase then attitude also increases regarding prevention of malnutrition.[9]

Another study Zalalem Tafese (2015) identify that Enhancing the knowledge and skill level of Health care Workers are important to improve nutritional care and treatment regime. It is recommended that nutritional trainings and continuing education for all staff will effective.[10]Another study Swapna Kumar Roy (Dec. 2007), the result found that after intervention the weight gain is higher in the experimental group than the control group (in expt. Group= 0.86 whereas in control group=0.77 kg & the p-value = 0.053) and after the end of the intervention period (in expt. Group= 1.81 whereas in control group=. 1.39 kg, the p-value < 0.001). The percentage of normal children and mild malnourished children

was more in the experimental group than that of the control group. The study concluded that nutritional education was required for successful elimination of malnutrition in all the areas.[11]

CONCLUSION

Computer-assisted teaching had a significant effect on upgrading the knowledge level of health workers regarding malnutrition prevention. So, this teaching program can be used effectively for improving the health status, decreasing the death rates and preventing malnutrition among under-five children.

REFERENCE:

1. Deepak BV. et al. Protein-energy malnutrition and its prevention among mothers of toddlers. Int J Ped Nurs 2016; 3(1): 23-25.
2. Huynh G. et al. Malnutrition among 6–59-Month-Old Children at District 2 Hospital, Ho Chi Minh City, Vietnam: Prevalence and Associated Factors. BioMed Research International. 2019; Article ID 6921312,
3. Yadav SS, Yadav ST, Mishra P, et al. An Epidemiological Study of Malnutrition among under-five Children of Rural and Urban Haryana. Journal of Clinical & Diagnostic Research. 2016 Feb; 10(2): LC07–LC10.
4. UNICEF: The State of the World's Children 2019
5. WHO Guidelines. Transforming and scaling up Health Professionals 'Education and Training; 2013.
6. Ayesha Saeed et.al, A comparative analysis of Nutrition Education Intervention food choices of public and private preschool children in Lahore, Pakistan. 2016;30(1); 49-53.
7. Vinod V. Bagilkar, Bharatesh B. Savadatti. A descriptive study on Malnutrition. Asian J. Nur. Edu. and Research 2015; 5(1): 72-77.
8. Tafese T, Shele A. Knowledge, attitude and practice towards malnutrition among healthcare workers in Hawassa city, Southern Ethiopia. Global Acad Res J 2015;1(1): 1-8.
9. Roy SK, Jolly SP, Shafique S, et al. Prevention of malnutrition among young children in rural Bangladesh by a food-health-care educational intervention: a randomized, controlled trial. Food Nutr Bull. 2007;28(4):375–383..
10. United Nations Special Reporter on the Right to Food from 2000 to 2008 Available from https://en.wikipedia.org/wiki/Malnutrition.
11. Who report. Life in the 21st century-A vision for all "WHO geneva,1988; 87-93.
12. Choudry M, Sharma P. Use of nutritional anthropometry and clinical examination in the assessment of nutritional status. Indian J Pediatrics 1999; 8 (2): 124-126.
13. Truswell AS et al, Textbook for ABC of nutrition, book.goole.co.in, 2007;page - 45,.
14. Population India, Karnataka, integrated child Development services Funding pattern: ICDS is a centrally sponsored scheme implemented through the State Govt./ UT administration, 2011.

15. WHO. Geneva: Guidelines for training Community Health Workers in nutrition. Second Edition; 1986.
16. Bhandari D, Choudhary SK. Health and nutritional status of children. India J Public Health 2006; 50 (4): 213-9.
17. Sunguya BF, Poudel KC, Mlunde LB, Urassa DP, Yasuoka J, Jimba M. Nutrition training improves health workers' nutrition knowledge and competence to manage child undernutrition: a systematic review. Front Public Health 2013;1:37.
18. Nziokia C et al. Audit of care for children aged 6 to 59 months admitted with severe malnutrition at Kenyatta National Hospital, Kenya. International Health, 2009, 1:91–96.