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THE EFFECT OF THREE TRAINING METHODS (GIVING LECTURE, QUESTIONS AND ANSWERS, PAMPHLET) ON NUTRITIONAL STATUS AND PERMANENT NUTRITIONAL KNOWLEDGE FOR ELDERS IN BANDAR ABBAS

Najma Khatoon Kavari¹, Lalh Hasani², Sadigheh Abedini³, Mohsen Azad⁴

1. *MSc, Health Education and Health Promotion at Hormozgan University of Medical Science*
2. *Mother and Child Welfare Research Center, Hormozgan University of Medical Sciences Bandar Abbas, Iran*
3. *Associate Professor of Health Education, Health School, Social Determinants in Health Promotion Research Center, Hormozgan Health Institute, Hormozgan University of Medical Sciences, Bandar Abbas, Iran*
4. *Infectious and Tropical Diseases Research Center, Hormozgan University of Medical Sciences, Bandar Abbas, Iran*

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ABSTRACT

Purpose: it is aimed to compare the effect of three training methods (giving lecture, questions and answers, Pamphlet) on nutritional status and permanent nutritional knowledge for elders in Bandar Abbas. Materials and methods for this study are semi-experimental (with three experimental groups and a control one). Statistical population consists of all ver-60 year old elders (240 people). By purpose, 120 of them who had inclusion criterion were selected in this study. And randomly they were placed in control and experiment groups. Intervention was done with methods of Pamphlet, questions and answer and giving lecture and no intervention was taken for control group. Questionnaires about nutritional knowledge and permanent nutritional information were used to collect data. Finally variance analysis test with repeated measurements and two-factor variance analysis with Spss software were applied to analyze the data. Results: showed that giving lecture method was not significant to improve nutritional status and nutritional knowledge for elders. The method with questions and answers was significant to improve nutritional status and nutritional knowledge for elders ($p < 0/05$). The pamphlet method was significant to improve permanent nutritional knowledge but it wasn't significant for nutritional status among elders ($p > 0/05$). Conclusion: the intervention included significant effect to improve nutritional status and permanent nutritional knowledge among old people in Bandar Abbas.

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Introduction

One of the major demographic, social and economic issues is old age Phenomenon that is formed in the industrial world and gradually it's forming in the third world. Several definitions have been used for elderly age but there is no agreement with the age when people goes to old age. Applying chronological age to indicate threshold for ageing period assumed that chronological age equals to biological age while they are not necessarily the same at the same time. Generally elderly Age depends on the age entering the market, life quality, retirement age and essentially life expectancy. Literally, the word elderly means old and aged. The elderly usually is called t the last period of life cycle which includes all alive creatures and this phenomenon is increasing compared to the past. Of course we cannot determine borders or limitations for old age and call someone an old person at a certain time because physical and mental flow is different for aging. Also, aging is a relative

Corresponding Author: Najma Khatoon Kavari, Health Education and Health Promotion at Hormozgan University of Medical Science

subject and it is different in terms of time and place. However elderly is a time process that includes people who comes to 65 years old age or over. Sometimes a few differences can be observed in age criterion but it is considered that beginning of 65 years old age is suitable to indicate ageing period on the basis of the triple grouping. Mostly, population rate in 65 years-old age group represents the percentage of elder population. As it goes higher, represent higher rate of aging in population. But during the life time, nutrition as an improving factor for physical and mental health is more effective and valuable. The need for energy would be reduced during old age. Because of aging, physical activities decrease and low initial energies for body, it is potentially damage nutrition. Researches have shown increasing danger of malnutrition, lack of nutrients that is dependent on old age. Aging process is due to physiological, economical and mental factors affecting on physical and mental performance. On the other hand, low detection of taste and smell, dysfunction of teeth, due to their undesirable health and gastric acid reduction can lead to get low food, weight loss and nutrient reserving reduction. Malnutrition is an important danger for many clinical disorders, despite being common in elders, it is not usually diagnosed, therefore not treated. Chronic diseases dependent on nutrition pattern including obesity, Lipid pattern disorder, Glucose tolerance disorder, Miletus diabetes and high blood pressure and major issues related to the elderly nutrition which effect on human being health and lifetime. Also they lead to consequences such as performance reduction, disabilities, low life quality and high death rate and have their mental health. Chronic diseases dependent on nutrition pattern causes osteoarthritis, diabetes, heart diseases and high blood pressure, and possess huge costs on governments and make problems for economic, hygienic and social field which need accurate planning to avoid Them. Because old people are potentially vulnerable especially when it is because of nutritional issues. Therefore, it is expected to have remarkable problems in social, hygienic and treatment Systems if no attempts to be done for suitable prevention methods it is important to promote knowledge levels among old people about how to keep health with good nutrition. Training old people about many issues such as sport, nutrition, social activities can be helpful to improve future health status for elders' population. Training is called as activities with pre-planned purposes to make learning pervasive, today information technology progress brings prevention methods through electrical ways to provide tutorial curses related to good nutrition for the people. Saffari and et.al compared the effects of the nutritional method, giving lecture and presentation, on nutritional knowledge of old people and concluded that both had significant effect. Effectiveness costs, flexibility, high quality, job facility and availability must be focused due to select suitable methods of training. Although the most important option for training is quality, cost effectiveness of planning is important. And it must equal the quality between production and training cost. So, as it is mentioned, nutrient status is very important issue for elderly that is less remarkable in developing countries. Nutrition factor has much effect on death rate, disability and life quality for old people. So it is remarkable to select a good method and with effectiveness on nutritional status among old people. The main question is that what is the three tutorial methods (giving lecture, questions and answer, Pamphlet) on nutritional status and permanent nutritional knowledge among old people in Bandar Abbas? And which one includes more effective result.

Methods and material

It is a semi-experimental study with three experimental group and ne control group. The population consists of over 60-year old people that is 129/8. Cochran formula was used to select 240 people as a selected sample and then 120 people selected by purpose according to inclusion criteria (over 60 years old, covered by seniors in Bandar Abbas Health Center (of course they should not be under training), to be satisfied to cooperate with the study), and randomly they were placed in three experimental groups (giving lecture, Pamphlet, questions and answers) and ne control group. The tools to collect data is standard questionnaire about permanent nutritional knowledge in old people that is designed by health and treatment ministry and medical education-elderly health office. The questionnaire consists of 20 items with answers "yes, no and I don't knew" and grading for the answers is 1 for true one and zero for false answers r I don't know. Then the grades are summed and divided into three groups by percentage: first group: grades (0-0/50%) elders with weak permanent knowledge who need repeated training, the second group: consists of elders who achieve (50-70%) with average permanent knowledge who need tutorial interventions and the third group: consists of elders with grades (70-100%) who has good permanent knowledge and n need for training r tutorial interventions. Also, standards MNA (min nutritional assessment) was used to assess nutritional status in old people quickly. The questionnaire includes 18 questions. It is consists of two parts. First part is screening with 6 questions which is applied for all participants. If they achieve grades 12 or higher shows natural nutritional status and grades 11 or lower shows malnutrition possibility. Supplementary part of the questionnaire (questions 7-18) is completed only for old people who got grade 11 r lower "malnutrition possibility" in the first six questions. Finally, the answers are graded and the samples in MNA questionnaire are classified in three groups f well-fed (>24), at risk of malnutrition (17-23/5) and suffering from malnutrition (<17). Measurement process for permanent knowledge would be den in 3 steps for each fur groups: first group: before training (pre-test), second step (after the end of training sessions and third step: three months after the end of training to assess permanency f tutorial subjects and determine the effect of each tutorial methods. Experimental interventions for the three experimental groups are: lecture: subjects are explained orally, using this method is related to explanatory method. The steps for giving lecture are: preparation step (first step), introduction (second step), presentation (third step) and conclusion (fourth step). An effective lecture must be presented by educational tools, pre-provided drafts, and their teaching methods, as well. Questions and answers method: it is a way or technique which is mostly used to

participate learners in learning process during all teaching methods and tutorial activities. This technique is good and effective for presenting and teaching in the beginning to draw attention and make learners concentrated during teaching to have variety and avoid fatigue factors and for evaluating learning rate in the end. In order to apply this important method in teaching, the question must be mentioned or a questionable situation must be made deliberately. Pamphlet: is a small tutorial with paper cover and it is provided to explain a special subject to readers. In fact its subjects can be on one side or both sides of an A4-sized paper divided into one third or one fourth in the paper. Also, according to UNESCO definition, it can include 5 or at most 48 pages with no cover. In fact, Pamphlet as an applied strategy is used to give information with different levels of prevention Health problems for tutorial plans and health promotion. At last, the collected results were analyzed by repeated measurements and two-factor variance analysis test with spss software version 23.

Results

Descriptive status in physiological traits have been shown on the basis of tutorial groups for participants.

Table 1. Descriptive statistics of physiological traits for participants in terms of group

Group								variable
Control		lecture		Question and answer		Pamphlet		
SD	M	SD	M	SD	M	SD	M	
.233	64.18	.134	64.17	64.17	68.78	.134	62.87	Height
.201	64.12	.266	62.87	62.87	57.15	.233	63.87	weight
.791	62.20	.451	52.35	52.35	56.58	.600	59.87	waist
.661	65.75	.451	65.22	65.22	58.43	.331	65.78	hip
.356	47.38	.245	47.28	47.28	50.38	.132	46.95	arm
.387	81.87	.129	28.12	28.12	25.42	.651	23.43	Leg

According to the results, the difference (nutritional status and permanent nutritional knowledge) between pre-test and post-test are significant in Pamphlet method ($p < 0/01$) but they are not significant between post-test and prevention ($p > 0/05$). Also, the difference between pre-test and post-test was significant in questions and answers method ($p < 0/01$). And it wasn't significant between post-test and prevention ($p > 0/05$). Finally, the difference between pre-test and post-test was significant in question and answer method ($p < 0/05$). No significant difference was observed in control group. In the beginning, question and answer training method, the Pamphlet and finally giving lecture had improving effects on research variables.

Table 2. Descriptive statistics for nutritional status and permanent nutritional knowledge on the basis of groups and measurement.

Follow up						indexes	group
Post-test		Pre-test					
sd	M	sd	M	sd	M		
4.76	32.62	4.77	32.60	5.82	29.36	Nutrient status	pamphlet
3.19	17.13	4.24	17.98	3.63	15.46	Permanent knowledge	
3.17	34.66	4.82	34.40	4.87	27.70	Nutrient status	question and answer
3.17	18.71	3.61	18.90	2.06	14.96	Permanent knowledge	
2.54	30.20	3.47	29.66	3.70	24.76	Nutrient status	Lecture
2.53	16.90	3.54	16.71	2.18	14.15	Permanent knowledge	
2.75	23.96	3.71	24.46	2.66	24.26	Nutrient status	control
2.17	14.99	2.89	15.91	3.71	15.06	Permanent knowledge	

Demographic traits analysis (size, weight, age, sex, education) with ANVA test showed that none of variables had no significant difference between groups' participants ($p > 0/05$).

In table3. Multi-variable assessments showed that there was general significant effect for physiological factors (nutritional status and permanent knowledge)

$F(2,116) = 105/02, p < 0/01, \eta^2 p = 0/186$. Also as significant effect has been observed for the interaction between psychological factor * group

F (2/116) =56/6, p<0/05, η^2 p=0/118.

In addition, a significant effect was observed for time factor,

F (2,116) =16/59, p<0/0001, η^2 p=0/257.

Therefore, it can be concluded that there is significant difference among pre-test, post-test and prevention (p<0/05). Also, is that significant effect was observed for the prevention between factors psychology*time*group.

F (4/192) =56/14, p<0/0001, η^2 p=0/539.

It can be concluded that there is a significant difference among groups f (lecture, question and answer, Pamphlet). Therefore, the theory of the study is confirmed and training methods: giving lecture, question and answer, Pamphlet have significant effect on nutritional status and permanent knowledge.

Table 3. The effect of variance n repeated measurements on the basis of variables (nutritional status and permanent nutritional knowledge) and training groups (lecture, questions and answer, Pamphlet)

effect	F	Df	Sig	η^2 p	Power
Psychological factor	105.02	2	0.0001	0.186	0.989
Psychological factor \times group	6.56	2	0.002	0.118	0.895
time	16.59	2	0.0001	0.378	1
Time \times psychological group	75.64	4	0.0001	0.257	1
Group	41.18	3	0.0001	0.612	1
Time \times psychological \times group	56.14	3	0.0001	0.539	1

According to table 4. The study of intergroup effects shows significant effect of (lecture and control groups) on nutritional status scores

F (1/57) = 5/51, P=0/16, η^2 P=0/095. Also, the effect of permanent nutritional knowledge was not significant.

F (1/57) =2/74, P=0/10. So it can be said that giving lecture method was not significant on nutritional status improvement and nutritional knowledge in elders (P>0/05).

Table 4. The results of multi-variable variance analysis to study the effect of training based on giving lecture about nutritional status and permanent nutritional knowledge

Source	Dependent variable	Squares sum	Df	Squares average	F	P	η^2 p	Power
Corrected model	Nutrition status	538.156	2	269.07	5.51	0.006	.743	.841
	Permanent nutritional knowledge	16.20	2	8.10	1.37	.25	.035	.288
Stable	Nutrition status	6670.63	1	6670.63	136.78	.001	.782	1.000
	Permanent nutritional knowledge	12542.41	1	12542.41	2123.35	.001	.351	1.000
Group	Nutrition status	95.33	1	95.33	1.95	.16	.095	.282
	Permanent nutritional knowledge	16.20	1	16.20	2.74	.10	.741	.374
Error	Nutrition status	4242.83	57	48.76				
	Permanent nutritional knowledge	513.90	57	5.90				
Total	Nutrition status	76409.00	60					
	Permanent nutritional knowledge	88327.00	60					
Corrected total	Nutrition status	4780.98	59					
	Permanent nutritional knowledge	530.10	59					

The results of table 5 showed that the effects of the groups (control, question and answer) was significant on nutritional status scores

F (1/57) =4/39, p=0/03, η^2 p=0/393.

Also, the effect of intervention group on permanent nutritional knowledge was significant

F (1/57) = 10/10, p=0/02, η^2 p=0/431

So, it can be said that the question and answer method was significant on nutritional status improvement and permanent nutritional knowledge in elders ($p < 0/05$).

Table 5. The results of multi-variable variance analysis to study the effect of training based on question and answer on nutritional status and permanent nutritional knowledge

Source	Dependent variable	Squares sum	Df	Squares average	F	P	$\eta^2 p$	power
Corrected model	Nutrition status	468.28	2	234.14	10.46	.0001	.934	.9860
	Permanent nutritional knowledge	172.08	2	86.04	20.21	.0001	.424	1.000
Stable	Nutrition status	5120.02	1	5120.02	228.82	.0001	.882	1.000
	Permanent nutritional knowledge	2169.14	1	2169.14	509.53	.0001	.537	1.000
Group	Nutrition status	98.72	1	98.72	4.39	.03	.393	.545
	Permanent nutritional knowledge	43.02	1	43.02	10.10	.002	.431	.884
Error	Nutrition status	1946.16	57	22.37				
	Permanent nutritional knowledge	370.36	57	4.25				
Total	Nutrition status	58315.00	60					
	Permanent nutritional knowledge	23359.00	60					
Corrected total	Nutrition status	2414.45	59					
	Permanent nutritional knowledge	542.45	59					

The results in table 6 showed that the intergroup effects in group (Pamphlet, control) were not significant on nutritional status $F(1/57) = 0/287$, $P = 0/59$, $\eta^2 p = 0/05$

But the effect of intervention was significant on nutritional knowledge

$F(1/57) = 1/6460$, $P = 0/02$, $\eta^2 p = 0/245$

So it can be claimed that Pamphlet method was not significant on nutritional status improvement for old people ($P > 0/05$) but it was significant on nutritional knowledge for old people ($P < 0/05$).

Table6. Results of multi-variable variance analysis to study the effects of Pamphlet method on nutritional status and permanent nutritional knowledge.

Source	Dependent variable	Squares sum	Df	Squares average	F	P	$\eta^2 p$	power
Corrected model	Nutrition status	30.42	2	15.21	.574	.56	.307	.143
	Permanent nutritional knowledge	50.55	2	25.28	4.680	.01	.419	.773
Stable	Nutrition status	10779.74	1	406.80	19.03	.59	.261	1.000
	Permanent nutritional knowledge	196.86	1	196.86	1.99	.01	.036	1.000
Group	Nutrition status	7.60	1	7.60	.287	.59	.005	.083
	Permanent nutritional knowledge	8.88	1	8.88	1.646	.02	.167	.245
Error	Nutrition status	2305.36	57	2305.36				
	Permanent nutritional knowledge	469.90	57	469.90				
Total	Nutrition status	84359.00	60					
	Permanent nutritional knowledge	25089.00	60					
Corrected total	Nutrition status	2335.78	59					
	Permanent nutritional knowledge	520.45	59					

Discussion

The present study aimed to compare the effect of three methods (Lecture, Question and Answer, Pamphlet) on nutritional status and permanent nutritional knowledge for elders in Bandar Abbas. The results showed that the methods are significantly effective on nutritional status and permanent nutritional knowledge for elders in Bandar Abbas. This finding on the basis of Abedi researches showed that training old people with educational films is more effective to increase nutritional awareness and it was more satisfying to learn than traditional way of learning a healthy lifestyle. Ruzbeh and et.al observed that 82/5% of permanent nutritional knowledge have been turned to a stable behavior after six-month intervention. Perez Scamila in a national study for

France to improve Vitamin D and Calcium status and prevent malnutrition for elders, showed that intervention group had significant difference in terms of age, education with control group, also there was a significant difference for nutritional knowledge in both groups. They found that intervention sessions were effective for experimental group and it shows the positive effect of nutrition training. In order to explain this finding it can be declared that knowledge level promotion in elders to know how to have a suitable nutrition is very important. Due to prevent the disability in old people, training different subjects such as sport, nutrition, and social activities can be helpful for the future health status in old people. Training is a pre-planned activity to make learning in general. Today, the electrical prevention methods with information technology development provide training courses for elders to have appropriate nutrition. Also, previous research results showed that lifestyle and nutrition status is a very important issue that is less remarkable in developing countries, because nutrition is an effective factor for death rate, disability and life quality for old people. The results for two-factor variance analysis show that the significant effect of (lecture, and control group) was not significant on nutrition status and permanent nutritional knowledge. Therefore, it can be declared that the method of giving lecture was not significant on nutrition status and permanent nutritional knowledge for old people ($p > 0.05$). This result disagrees with the researches by Safari and et.al to compare the effects of giving lecture and presentation methods for nutritional attitudes in old people. They concluded that both methods are significantly effective. Hussain Aheq and Ivan Baqa believed that both of the methods (giving lecture and presentation) has positive tutorial intervention effect on students awareness and mostly giving lecture was effective with questions and answers method. Karimi and et.al showed that there is no significant difference for comparing awareness rate and also control group attitude before and after the intervention. Also, in the lecture group the attitude was more positive after intervention, which it shows significant differences ($p < 0.05$). Due to explain the difference between this result and previous results, it can be said that cultural differences, knowledge background and motivation which are considered in tutorial programs for elders were not useful and motivational for giving lecture method and make old people tired and bored. So, effectiveness cost, flexibility, comfort ability, quality and availability must be considered to choose an appropriate method. Although quality is the most important option for training, planning cost effectiveness is important, as well and interaction must be considered between production qualities and training cost.

Two-factor variance analysis results show that the effect of (control and question and answer) group was significant on nutrient status and permanent nutritional knowledge. Therefore, it can be claimed that training method of question and answer was significant on nutritional status improvement and permanent nutritional knowledge ($p < 0.05$). This finding is based on the research by Hussein Aheq and Ivan Baqa to study the positive tutorial intervention (of both methods) on students' knowledge level and the effect of giving lecture method with question and answer. Perez Scamila in a national study for France to improve Dand Calcium vitamins status and prevent malnutrition for elders, showed that intervention group had significant difference in terms of age, education with control group. Also there was a significant difference for nutritional knowledge in both groups. They found that intervention sessions were effective for experimental group and it shows the positive effect of nutrition training. In order to explain the finding, it can be declared that training methods of question and answer is very important to change participants' attitude, because it leads to have discussing groups and fixing ambiguities, and this method can improve elders' attitudes and increase their awareness about the aforementioned issues and lead to simplify information release among people.

The result of two-factor variance analysis showed that the effect of (Pamphlet and control group) was not significant in groups' scores about nutrition status ($p > 0.05$) but Pamphlet method was significant on nutritional knowledge improvement among old people ($p < 0.05$). This finding is based on Aein and et.al researches that is about the significant effect of tutorial intervention on knowledge rate in patients ($p < 0.05$) but no significant difference was observed in terms of effectiveness ($p < 0.05$). Hejazi and et.al in their study entitled by " the study of training effect of behaviors promoting health on elders' knowledge " the training was in groups, during two 45-minute sessions , day after day with questions and answer and giving lectures, using a tutorial small book with pictures of remarkable increasing average scores in knowledge generally after training than before training. Azizi and et.al showed that training with the three methods have been effective to promote knowledge for preventing HIV ($p < 0.001$). Because it was more effective the training by general practitioner and then the method with peers and also pamphlet method in the end ($p < 0.001$) Karimi and et.al showed that no significant difference was observed to compare knowledge rate and control group attitude after and before intervention. Knowledge rate increased in both training groups (pamphlet and giving lecture) after intervention. Also, attitude rate was more positive in the group with giving lecture method after intervention that these differences are significant ($p < 0.05$). To explain this finding, it can be said that Pamphlet method is effective on increasing knowledge rate and changing people attitude.

Conclusion

Although more effective intervention methods and comparisons are needed to study about bigger samples and long-lasting follow up, the research results showed that giving lecture training was not significant on nutritional status and nutritional knowledge in old people. Questioning and answer was significant on nutritional status and permanent nutritional knowledge in elders ($p < 0.05$). Pamphlet method was significant on permanent nutritional knowledge in elderly ($p < 0.05$), but it wasn't significant on nutritional status in old. People ($p > 0.05$). Conclusion: the interventions in the study has significant effect on nutritional status improvement and permanent nutritional knowledge for old people in Bandar Abbas.

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