



Research Article

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***Investigating the Effect of Support Program oriented to the Family's Psycho-Social Needs on the Care Burden (Physical, Emotional Areas) of the Family Carers of Ischemic Heart Patients in the Test and Control Groups before and after the Intervention***

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**ABSTRACT**

*Among the heart diseases, the ischemic heart disease is the most common chronic and life-threatening disease; so this research aims to investigate the impact of the overall score of the care burden and the (physical, emotional) areas of familial carers of ischemic heart patients in the test and control group before the intervention.*

*This research is a clinical trial. Sampling of this study was done by the easy method; 64 ischemic heart patients referring to the internal heart departments of Chamran hospital in Isfahan were selected randomly (32 individuals as the test group and 32 individuals as the control group). Data collection tools were two questionnaires of the psycho-social needs assessment and the questionnaire of care burden; it was done in the interval before the intervention. To analyze the data, the independent t-test, analysis of variance with repeated observations, Manwhitney and Chi-square were used by the help of SPSS software version 18. The results of this study showed that in the test group, the scores of care burden in the (physical, emotional) areas had a significant difference in the time period before the intervention ( $P < 0.05$ ). In the control group also the average score of care burden had a significant difference ( $p < 0.05$ ), but there was not observed any significant difference in the control group. The findings revealed that the care burden in the familial carers who have received a nursing support based on needs assessment, had a considerable reduction compared with the control group, so that the nursing support is recommended for familial carers of ischemic heart patients based on the psycho-social needs assessment.*

**Keywords:** *support program, family's psycho-social needs, care burden, family carers, ischemic heart disease*

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**INTRODUCTION**

Among the heart diseases, the ischemic heart disease is the most common chronic and life-threatening one. The ischemic heart diseases outbreak in Iran and the resulting mortality is increasing, so that this disease causes 46 percent of the mortality and the incidence rate in 1000 individuals is 181.4%. According to the conducted investigations, the ischemic heart diseases outbreak in Isfahan is 19.4% (Momeni et al., 2012).

Prior to 1900, the infectious diseases and malnutrition were the most common causes of death in the world; with improving nutrition and general health, the prevalence of this disease was reduced and the cardiovascular diseases

became the most important health problem of societies (Sazavar et al., 2010). Now the cardiovascular diseases are considered as the most important factor of mortality in developed countries (Fredricks, 2009). With the passage of time and the control of infectious diseases, in developing countries as well the cardiovascular diseases have found a growing importance, so that the statistics show that more than half of the deaths caused by the cardiovascular diseases that occur in the world is related to developing countries. The mortality rate caused by cardiovascular diseases in developing countries is 15-30% and in industrial countries 50% (Sadeghzadeh, 2010). According to the report of the Center for Health Statistics in the United States, based on the prevalence of cardiovascular diseases it is estimated that, by eliminating all forms of cardiovascular diseases, life expectancy can increase approximately to roughly seven years (Green et al, 2010., Sabzmakan et al., 2013).

Hospitalization in many cases for families leads to the occurrence of affective disturbance, anxiety, doubt and justifiable and understandable fear in relation to losing a person of interest. All of these states can have a bad influence on the individual and social relations, as well as decision-making on essential items, especially in relation to the hospitalized patient. In such a situation the familial carers are in need of nurses' physical and emotional support; on the other hand, the nurses can't feel themselves to be not responsible for the support of the members of the family during the bitter experience of hospitalization of relatives. Providing family support can be of impact on mortality, disability and social-psychosocial adjustment and acceptance of the treatment. Hence giving importance to the issue of the family and taking care of the family is a significant issue, because the family members are in fact hidden health providers and can provide a major source of instrumental, practical, emotional, informational and analogical support.

In a study of Moeini et al., entitled as "investigating the effect of family-focused nursing interventions on the amount of care burden of family members of patients undergoing coronary artery bypass transplantation surgery", that was done in Isfahan in 2012 with the aim of determining the impact of family-focused nursing interventions on care burden of family of patients undergoing open heart surgery, the results showed that by interventions, the care burden of carers has been reduced. In this study, the interventions were done in three 45-minute sessions within three days during the patient's residence for patients' family members. In the test group for each family the interventions were done during three individual sessions. The first session 24 hours before the operation, the second session during the surgery and third session 48 to 72 hours later where the patient entered in the surgery department.

### **Research method**

This research is a clinical trial that was conducted by investigating 64 ischemic heart patients (32 individuals as control group and 32 individuals as test group) referring to the internal heart departments of Chamran hospital. Sampling was done by an easy method and by selecting from among patients having the conditions of entering into study; then the samples were divided into two test (32 individuals) and control (32 individuals) groups by a random allocation. Initially using the questionnaire of psycho-social needs assessment, the needs of familial carers were determined and prioritized and then the surveillance program was set up based on needs. Gathering information was done by familial carers and using a two-part tool including the questionnaire of demographic data and disease information and the care burden questionnaire. To analyze data statistically, the independent t-test, analysis of variance with repeated observations, Manwhitney and Chi-square were used by the help of SPSS software version 18.

### **Research findings**

Table 1: comparison of average overall score and the areas of care burden of the familial carers of ischemic heart (physical, emotional) patients in the test and control groups before the intervention.

Sub-scale group	control		Test		P	Independent t-test
Total score of care burden	5.51	42.78	4.14	41	0.149	-1.46
Physical care burden	0/87	12/34	1/1	11/97	0/114	-1/604
Emotional care burden	1/17	6/85	0/98	6/53	0/251	-1/16

The above independent t-test results show that before the intervention, the average overall score and the areas of care burden of the familial carers of ischemic heart patients had no significant difference between the test group and control group ( $p > 0.05$ ).

Table (2): determining and comparing the average overall score and the areas of care burden of the familial carers of ischemic heart (physical, emotional) patients in the test group before the intervention

Variable	Stage	Significance level (P)	Test statistic (F)	Mean
Total score of care burden	Before intervention	<0/001	451/592	41
Physical care burden	Before intervention	<0/001	133/149	6/88
Emotional care burden	Before intervention	<0/001	111/041	5/03

### Test results

variance analysis showed repeatedly that in the test group, the overall average score of care burden and the (physical, emotional) areas had a significant difference ( $P < 0.01$ ).

Table (3): determining and comparing the average overall score and the areas of care burden of the familial carers of ischemic heart patients in the test and control groups after the intervention

Time group	Independent t-test		Control	Test		
	p-value	T	Standard deviation	Mean	Standard deviation	mean
After intervention	0/001 <	-54/9	1/93	51/25	2/04	23/97

The independent t-test results showed that the average overall score of care burden had a significant difference between the test group and control one immediately after the intervention ( $p < 0.05$ ) and one month after the intervention ( $p < 0.05$ ).

Table (4): determining and comparing the average score of the (physical, emotional) areas of the familial carers of ischemic heart patients in the test and control groups after the intervention

Sub-scales group		Independent t-test	control	Test			
Physical care burden	After intervention	<0/001	-33/31	0/56	12/1	1/5	2/66
Emotional care burden	After intervention	<0/001	-20/1	1/1	7/1	0/9	2/1

In the above table, the independent t-test results showed that the average score of the areas of care burden had a significant difference between the test group and control one after intervention ( $p < 0.05$ ).

Table (5): determining and comparing the average overall changes of care burden and the (physical, emotional, social, developmental and temporal) areas of the familial carers of ischemic heart patients in the test and control groups after the intervention in relation to before-intervention

group Care burden And sub-scales		Independent t-test		control		test	
		P	T	Standard deviation	mean	Standard deviation	mean
Total score of care burden	After intervention in relation to before intervention	<0/001	25/812	1/93	-8/47	2/04	17/21
Physical care burden	After intervention in relation to before intervention	<0/001	25/03	0/564	0/27	1/49	4/22
Emotional care burden	After intervention in relation to before intervention	0/003	9/33	1/089	0/25	0/893	2/93

Observing the results of above table: using the test for the variance analysis of the repeated measures, it became clear that the effect of the time factor was significant for the overall score and all the sub-scales ( $P < 0.05$ ). In other words, we can say the average of the dependent variable (the individuals' care burden) has a significant difference in two research stages. Also the interaction between the factor of (time) and the group was significant for the overall score and all sub-scales ( $P < 0.05$ ); this shows that both the variables of group and time together have an effect on the average score of individuals' care burden and the average of care burden is different in 2 groups and in two time stages and there is a significant difference in the (incremental or reductive) process of individuals' care burden in two groups during the study.

### Discussion and conclusion

The findings of this study determined that before the intervention in the average overall score of care burden and the (physical, emotional) areas of familial carers of ischemic heart patients, there was no significant difference between the two test and control groups ( $p=0.149$ ). This was expected due to the random assignment of samples and lack of intervention. For confirming the findings of present study, the results of the study of Lopez-Hartman et al. determined that before the intervention, there was no significant difference in the care burden between the two test and control groups. Also in line with the present study, the study of Etemadifar et al. conducted in Esfahan in 2012, showed that before the intervention, there was not any significant difference between the two groups ( $P \geq 0.05$ ).

By the same token, the results of the study of Etemadifar et al. entitled as "the effectiveness of group educational supportive intervention in the family of patients with heart failure" that was performed in Isfahan, showed that the care burden of familial carers of patients immediately and 3 months after intervention was significant between the two groups ( $P = 0.003$ ), so that in the control group, the average care burden was more than test group (average care burden immediately and after 3 months later in the test Group was 36.15 and 41.27 respectively, and in the control group, the average care burden immediately and 3 months after the study was 59.79 and 60.94 respectively). Also the results of the study of Sigen Andren et al. in 2009 in Sweden entitled as "the impact of social psychological interventions on the care burden of the carers in people with dementia" showed that the average care burden 3 months after the intervention

( $p = 0.05$ ) and 12 months after the intervention ( $p = 0/03$ ) in the control group was more than the test group. In this regard, a study entitled as "the effect of an educational intervention for family members over the care burden and the psychological symptoms in patients with schizophrenia", conducted in Shiraz by Sharif et al, showed that the care burden immediately and 1 month after intervention was significant in test group more than the control group ( $p < 0/001$ ).

The results of this study showed that in the control group, the average score of care burden had a significant difference ( $p < 0.05$ ); except for the physical area that between the two times there was not observed a significant difference in the control group ( $p < 0.05$ ). In line with the present study, the results of the study of Etemadifar et al. entitled as "the impact of the group educational supportive intervention on care burden in family of patients with heart failure", performed in Isfahan, showed that the care burden has increased in the control group at three temporal areas before, immediately after and 3 months after the intervention ( $p = 0/000$ ). In study of Moeini et al. entitled as "the effect of family-focused nursing interventions on the amount of care burden of family members of patients undergoing coronary artery bypass transplantation surgery", carried out in Isfahan in 2012, the results showed that in the control group before and after the intervention, the amount of care burden of family members was significant ( $p = 0/01$ ); contrary to test group, this significance has been an increase in average care burden, so that the average care burden in control group before and after the intervention has been 30.16 and 35.44 respectively, and the average care burden in test group before and after the intervention has been 19.2 and 30.8 respectively. In a study entitled as "the impact of training of cognitive-behavioral interventions on the care burden of familial carers of the aged with Alzheimer" that was done in 2015 by Bagherbeyg et al. in Tehran on 70 individuals of familial carers showed that in the control group, the care burden in the six weeks after the intervention has been significantly increased ( $p < 0/001$ ), so that the average care burden in the control group before and after the intervention was 42.57 and 44.86 respectively. Also in the present study in the physical subscale of care burden, this difference has not been significant in the control group. For researcher, since the routine trainings that are given to patients in hospital by nurses are with emphasis on physical dimension and physical problems and according to the information that patients' families achieve from different visual and aural sources in conjunction with the disease and necessary cares during illness, they usually have basic information about the physical issues, this can cause that, despite an increase in average subscales of care burden in the control group with the passage of time, the physical subscale has not had a significant increase.

To achieve the goal of "determining and comparing the average overall score of care burden and the (physical, emotional) areas of the familial carers of ischemic heart patients in the test and control groups after the intervention", the results of the study showed that after the intervention ( $p < 0.001$ ) in the test group, the average overall score of care burden and (physical, emotional) areas in the control were significantly more than the test group and there was a significant difference between the two groups.

By the same token, the results of the study of Etemadifar et al. entitled as "the effectiveness of group educational-supportive intervention of the care burden in the family of patients with heart failure" performed in Isfahan showed that the care burden of familial carers of patients was statistically significant immediately and 3 months after intervention between the two groups ( $P = 0.003$ ), so that in the control group, the average care burden was more than the test group; so the average care burden 3 months after intervention in test group was 5.12% more than average care burden immediately after the intervention and in the control group the average care burden 3 months after study was by 1.15% more than immediately after the study. Also the results of the study of Sigen Andren et al. in 2009 in Sweden entitled as "impact of social psychological interventions on the care burden of the carers in people with dementia" showed that the average care burden 3 months after the intervention ( $p=0.05$ ) and 12 months after the intervention ( $p = 0.03$ ) in the control group was more compared to the test group. The results of the present study are in line with these studies.

Contrary to the results of the present study, the results of the study of Pahlavanzadeh et al. in Isfahan entitled as "investigating the impact of family education program on the burden of carers of the aged suffering from dementia" showed that the average score of the care burden immediately and 1 month after the intervention in the test group was 35.44 and 33.56 respectively and in the control group was also 46.8 and 50.64. So it was concluded that immediately after the intervention the difference of care burden in the two test and control groups was statistically significant, but after one month the care burden between the two groups was not significant (Pahlavanzadeh et al., 2012). For the

researcher, the reason of difference of the findings of the present study and the results of the study of Pahlavanzadeh et al. can be associated with difference in samples of two studies; while the present study has dealt with examining the familial carers of patients with ischemic heart disease, the aged patients suffering from dementia have been the study sample of Pahlavanzadeh et al. In mental patients, the carer may become compatible with the disease and so bear the care burden less than earlier and compared with physical diseases. In addition, the way of intervention in the present study is different with the study of Pahlavanzadeh et al., in the present study the intervention is based on the socio-psychological needs assessment that has come into force based on the results of needs assessment of a supportive program for 32 familial carers in the test group and for the control group samples two sessions were held about the ischemic disease health care, disease process, physical problems created for the patient and how dealing with them and a month after the study, the appraisal questionnaire of care burden was completed by the selected member of the family; however, in the study of Pahlavanzadeh et al. the needs assessment has been not done and the intervention has been implemented on the basis of the booklet formulated by a researcher on 50 familial carers in 5 group sessions of 10 to 15 individuals for 90 minutes. The other difference between the two studies can be found in the used tool so that in the present study the care burden questionnaire of Novak and Guest has been used for measuring the care burden of the familial carers of patients with ischemic heart disease, while in the study of Pahlavanzadeh et al. the Zarit questionnaire has been used for investigating the care burden of the familial carers of the aged with dementia.

To achieve the goal of "determining and comparing the average overall changes of care burden and the (physical, emotional) areas of the familial carers of ischemic heart patients in the test and control groups after the intervention in relation to before-intervention", the results of the study determined that the average changes of care burden score of the familial carers of ischemic heart patients after intervention ( $p < 0.05$ ), in the control group was significantly more than test one. With the passage of time and resolving the questions and the needs created for familial carers during care, the care burden in the test group is reduced compared to control group; for researcher this can be associated with responding to questions and meeting the needs of the test group (Bartolo et al., 2010; Signe Andern et al., 2009). In line with the present study, the study of Etemadifar et al. entitled as "the impact of group educational supportive intervention on the care burden of patients' family with heart failure", carried out in Isfahan, also indicated that the care burden of carers in test and control groups immediately and 3 months after the intervention was significant ( $p=0.000$ ).

Since the results of a study should be evaluated by its limits, it is recommended that the limits of the present study are considered in the next researches. The most important limitation of the present study was the short follow-up time after the intervention; in fact, a limited time to do such an intervention caused to allocate a brief period of time for following up the patients after the intervention. For this purpose, it is recommended that in the future, for generalizing data, the researches with longer follow-up period are done in this area.

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