The effect of positive thinking training on the level of spiritual well-being among the patients with coronary artery diseases referred to Imam Reza specialty and subspecialty clinic in Shiraz, Iran:

A randomized controlled clinical trial

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# Original Article

#### **Abstract**

BACKGROUND: Positive thinking which is derived from an optimistic view toward the universe and plays an important role in the incidence of better and a more targeted behavior among human beings. It can improve spiritual health in the individuals through increased communication with God and thanksgiving and accelerate the healing process. Accordingly, we aimed to evaluate the effect of positive thinking on the level of spiritual health in the patients with coronary artery disease (CAD) referred to Imam Reza specialty and subspecialty clinic in Shiraz, Iran.

METHODS: In this study randomized controlled clinical trial, we enrolled 90 patients with confirmed CAD referred to Imam Reza clinic, Shiraz, during April to July 2013, A blocking randomization method was used to randomize the final 90 participants into intervention (n = 45) and control groups (n = 45). After obtaining written informed consent, the participants were asked to complete two questionnaires. Data were collected using Ellison and Paloutzian's spiritual well-being scale (SWBS) and a demographic questionnaire. The patients in the intervention group participated in 7 training sessions on positive thinking in which several topics were discussed. The SWBS questionnaire was completed two more times by the participants; once immediately after, and once 1 month after the intervention. 16 patients were excluded from the study due to different reasons, and finally the analysis was performed on 74 patients.

**RESULTS:** The mean ± standard deviation (SD) of spiritual well-being (SWB) increased from  $88.71 \pm 12.5$  to  $96.63 \pm 12.58$  in the intervention group; while, it decreased from  $93.19 \pm 17.55$  to  $94.45 \pm 16.01$  in the control group in the interval of before and 1 month after the intervention. We observed a statistically significant difference between the two groups regarding both variables of time and group (P < 0.001).

**CONCLUSION**: SWB is an important factor which should be considered in the treatment process, and nurses could maintain and improve such dimension of health in the patients through their intervention including drawing the patients' attention to optimism and positive thinking.

**Keywords:** Spiritual, Coronary Artery Disease, Thinking, Training

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## Introduction

Coronary artery disease (CAD) is one of the most important diseases which involve one of the most vital organs in the body. CAD is considered as a leading cause of mortality worldwide which accounts for 20.0% of global deaths and 28.5% of deaths in developing countries. Likewise, it causes

30-35% of deaths in Iran as 150000 Iranian people die annually from such disease.<sup>1,2</sup>

The methods of treatment include diagnosis, treatment of underlying diseases, reducing the risk factors of the disease, pharmaceutical and non-pharmaceutical methods and coronary artery bypass grafting as a final solution.<sup>3</sup> The incidence of

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the disease not only can lead to severe crisis in the individual's health,<sup>4</sup> but it also can cause depression, anxiety and arrhythmia in patients.<sup>1,5</sup> Currently, various pharmaceutical and non-pharmaceutical methods such as exercise, suitable diet and nutrition, rest, relaxation techniques and music are applied to reduce sympathetic reactions.<sup>6</sup>

Usually, these patients are suffering from anxiety, depression, hopelessness and feeling of emptiness because of the complication of their treatment especially aggressive treatment, which can reduce the speed of recovery process and even reverse it. 1,4,5

Previous studies have found that depression and spiritual health or hope and positive thinking are associated with each other. For example if positive thinking improves, the level of spiritual health enhances and enhancing the level of spiritual health can reduce the level of depression.<sup>7-10</sup>

Therefore in addition to current therapy a complementary treatment such as cognitive therapy can be useful and improve spiritual health.

Cognitive therapy is another technique which can also help to treat psychiatric disorders. It is basically a scientific method based on a simple theory indicating that they are people's thought and attitudes toward their environment which shape their mood.<sup>11</sup> Positive thinking is a branch of cognitive therapy which can be defined as the use of all promising, joyous and positive mental capacities in life for not giving up to mind-made negative factors and despairing feelings resulted from difficulty of communication with people and confrontation with nature.12 It is derived from an optimistic view toward the universe and plays an important role in the incidence of better and more targeted behaviors among human beings and provides them with success.<sup>13</sup> Moreover, it can improve spiritual health in the individuals through increased communication with thanksgiving and accelerate healing process. 14,15

Spiritual well-being (SWB) is a feeling or power which can make coordination between physical, psychological and social dimensions. The concept of SWB can be described in two vertical dimensions (including a relationship with a divine source) and a horizontal dimension (including communication with other people and nature). It is also characterized by stability in life, peace, balance and harmony, and a sense of close relationship with self, God, society, and environment. Moreover, it can specify the integrity of individuals and makes them seek the meaning and goal of their life at the time of disease. If such dimension of health is seriously

compromised, the individual may be afflicted by psychological disorders and feelings such as loneliness, depression loss of meaning in life.<sup>17</sup> It can also improve quality of life.

Asaroudi et al.<sup>18</sup> conducted a study to investigate the relationship between SWB and quality of life in nurses and observed a positive and significant correlation between the higher levels of SWB and various dimensions of quality of life. However, no one can ever deny the importance of spiritual needs, present health care system only concerns about people' physical health care.<sup>19</sup>

Nevertheless, in recent years, researchers has investigated and trained the methods of taking correct attitudes toward life, positive thinking and its good effects on human spirit as well as achieving success in life. They concluded that there is a significant correlation between optimism, hope and health.8 Investigating the effect of positive thinking on the level of SWB in the patients with CAD could be helpful in the treatment of spiritual and psychological disorders in such patients since no study has addressed such issue yet. It is worth mentioning that the area of spiritual care is the one that has been frequently ignored or delegated to a religious leader in some countries; however, addressing spiritual needs is an essential part of holistic care in nursing. Therefore, nurses should recognize the importance of considering social, emotional, psychological, physical and moral aspects of the patients.<sup>19</sup>

Since the nurses could play an important role in the prevention and controlling CAD, they should effort to improve the level of expectancy and SWB among the patients. Therefore, they should initially learn positive thinking and apply it in their own interventions and second or third level of prevention depending on the patient's condition.

Accordingly, we aimed to evaluate the effect of positive thinking on the level of spiritual health in the patients with CAD referred to Imam Reza specialty and subspecialty clinic in Shiraz.

#### Materials and Methods

This study was a randomized controlled clinical trial with before, after and 1 month follow-up. Our study was approved by the Ethics Committee of Shiraz University of Medical Sciences (Ethics Committee Approval Number: 92-6607). We enrolled 90 patients aged 42-79 with confirmed CAD referred to Imam Reza specialty and subspecialty clinic, Shiraz, during April to July 2013.

To carry out the study, the researcher was

introduced to the authorities of Imam Reza clinic (cardiac clinic) in coordination with the authorities of Fatima Faculty of Nursing and Midwifery. After obtaining permission from the authorities of the clinic, the researcher selected the samples in collaboration with a research assistant and a cardiovascular specialist in a period of 2 months, 3 days a week. The patients were selected using a simple sampling method.

Inclusion criteria included confirmed diagnosis of CAD, lack of blindness and deafness, ability to read, write, understand and communicate in Persian language, residence in the city in which the study was done. However, exclusion criteria included being absent of more than two sessions, participating in similar training courses and unwillingness to continue participation in the study.

The sample size was calculated as 45 in each group (by considering loss rate of 20%) based on the data of similar studies using following formula and MedCalc software byba (Acacialaan 22 8400 Ostend Belgium) [power: 80%, a: 0.05, mean difference: 3.01 and standard deviation (SD): 4.75 (intervention group) and 4.43 (control group)]. A blocking randomization (block size = 4) method was used to randomize the participants, who had inclusion criteria, into intervention (n = 45) and control groups (n = 45).

After obtaining written informed consent, the researcher explains the aims and method of the research to the patients and then the participants were asked to complete two questionnaires. Data were collected using Ellison and Paloutzian's spiritual well-being scale (SWBS) and demographic questionnaire enquired about age, sex, educational level, employment status, and marital status, monthly income.

The patients in the intervention group participated in training sessions on positive thinking consisted of one 75-minute session per week for 7 consecutive weeks. The topics included the importance of anthropology and self-analysis, cognitive errors, definition and the role of positive thinking in life, overcoming the disease, the importance of prayers, communication with God and thanksgiving, training relaxation techniques, visualization and positive imagery and considering relaxation factors (prayer, patience, forgiveness, and trust in God) as well as the causes of fear of death.

16 patients were excluded from the study due to different reasons (In the intervention group, 7 patients were excluded due to the absence of more than two sessions and 9 of them in the control group refused to continue participating in the study) and finally the analysis was performed on 74 patients.

The SWBS questionnaire was completed immediately after and 1 month after the intervention by the participants, again (Figure 1).

SWBS is a 20-item questionnaire consists of two 10-item sections. It measures two dimensions of SWB including religious well-being (RWB) and well-being **Participants** existential (EWB). responded to the items using a 6-point Likert scale ranging from 1 "Strongly disagree" to 6 "Strongly agree". The total score ranged from 20 to 120. But, inverse scoring was used for 9 questions. Finally, SWB score was classified into three levels of low (20-40), moderate (41-99) and high (100-120). Its reliability and validity were assessed in some studies and were also estimated and confirmed in Iran by Baljani et al.,8 after being translated into Persian. Cronbach's alpha was calculated as 0.88.

The collected data were analyzed using SPSS software (version 16, SPSS Inc., Chicago, IL, USA). To analyze qualitative data (Sex, education, marital status, income and job), chi-square method was used and to analyze quantitative data independent t-test (for age and spiritual health) and analysis of variance of repeated measures (just for spiritual health) were used. The significance level was set at < 0.05. Kolmogorov-Smirnov test was used to examine the normality of quantitative variables and the results confirmed that the variables had a normal distribution.

### Results

We finally enrolled 74 patients with CAD of which 38 were in the intervention, and 36 were in the control group. The age range of the patients was 42-79 years. The mean  $\pm$  SD age of the patients were (60.24  $\pm$  6.88) and (58.08  $\pm$  9.05) in the intervention and control groups respectively. There was not any significant difference between the intervention and control groups with respect to their age (P = 0.251).

The results showed that the two groups had no statistically significant difference in terms of marital status (P = 0.463), educational level (P = 0.535), employment status (P = 0.298) and sex (P = 0.363) (Table 1).

According to the results of independent t-test, no significant difference was observed between the two groups regarding the total scores of SWB (P = 0.089), EWB (P = 0.205) and RWB (P = 0.086) before the intervention.

The mean ± SD total score of EWB was

 $38.34 \pm 7.15$  and  $40.97 \pm 10.31$  and the mean  $\pm$  SD total score of RWB was  $50.36 \pm 7.49$  and  $53.47 \pm 7.85$  in the intervention and control groups, respectively, before the intervention.

According to table 2, the mean  $\pm$  SD total scores of SWB in the intervention group were 88.71  $\pm$  12.50, 95.28  $\pm$  11.02 and 96.63  $\pm$  12.58 before, immediately after and 1 month after the intervention respectively indicating that SWB scores enhanced over the time in this group. However, in the control group, the mean  $\pm$  SD total scores of SWB were 94.45  $\pm$  16.01, 92.70  $\pm$  16.26, and 93.19  $\pm$  17.55 before, immediately after and 1 month after the intervention, respectively, reflecting a reduce in SWB scores after the intervention.

The analysis of variance of repeated measures was used to compare the intervention and control groups at 3-time points without considering the variable of group. The results reported a significant difference between the groups in this regards (P = 0.014) indicating that time was an important factor and due to the effects of two variables of time and group, the changes were significant (P < 0.001).

76.31% of the patients in the intervention and 58.33% of those in the control group reported an intermediate level of SWB. 23.68% of the participants in the intervention and 41.66% of those in the control groups reported a high level of SWB. However, no patient maintained a low level of SWB (Figure 2).

Table 1. Frequency distribution of participants' demographic characteristics

Variable	Intervention group (n = 38)	Control group (n = 36)	*P
Sex [n (%)]			
Female	23 (60.5)	18 (50.0)	0.262
Male	15 (39.5)	18 (50.0)	0.363
Marital status [n (%)]			
Married	33 (86.6)	29 (80.6)	0.462
Widow	5 (13.2)	7 (19.4)	0.463
Educational status [n (%)]			
Under graduate	27 (71.1)	26 (72.2)	0.525
Graduate	11 (28.9)	10 (27.8)	0.535
Occupational status [n (%)]			
Clerk	5 (13.2)	5 (13.9)	
Retired	14 (36.8)	10 (27.8)	0.200
Self-employed [n (%)]	2 (5.3)	7 (19.4)	0.298
Housewife [n (%)]	17 (44.7)	14 (38.9)	
Monthly income (Rials) [n (%)]			
< 6 million	12 (34.2)	10 (27.8)	
6-10 million	18 (47.4)	18 (50.0)	0.754
> 10 million	7 (18.4)	8 (22.2)	

chi-square test

**Table 2.** Comparison of spiritual well-being total score and its dimensions before and after intervention as well as 1 month after the intervention in the intervention and control groups

		Time					
SWB mean score	Group	Before intervention	After intervention	1 month follow-up	*P (time)	*P	*P (group/ time)
		(mean ± SD)	(mean ± SD)	(mean ± SD)	(ume)	(group)	ume)
EWB	Intervention	$38.34 \pm 7.15$	$42.47 \pm 7.10$	$43.47 \pm 7.31$	< 0.001	0.863	0.002
	Control	$40.97 \pm 10.31$	$40.72 \pm 10.50$	$41.58 \pm 10.96$			
RWB	Intervention	$50.36 \pm 7.49$	$52.81 \pm 5.72$	$53.15 \pm 7.06$	0.706	0.890	0.001
	Control	$53.47 \pm 7.58$	$51.97 \pm 7.58$	$51.52 \pm 7.81$			
Total SWB	Intervention	$88.71 \pm 12.50$	$95.28 \pm 11.02$	$96.63 \pm 12.58$	0.014	0.975	< 0.001
score	Control	$94.45 \pm 16.01$	$92.70 \pm 16.26$	$93.19 \pm 17.55$			

\*Analysis of variance of repeated measures test.

SWB: Spiritual well-being; EWB: Existential well-being; RWB: Religious well-being; SD: Standard deviation

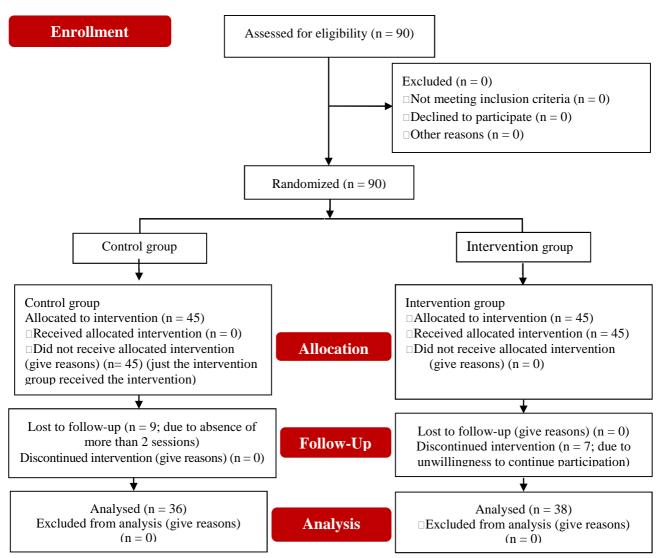


Figure 1. The process of study on spiritual well-being in patients with coronary artery disease (CAD)

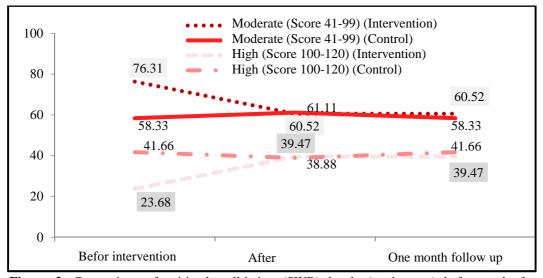


Figure 2. Comparison of spiritual well-being (SWB) levels (total score) before and after intervention and 1 month follow-up in the intervention and control groups \*No patients reported a low level of SWB

#### Discussion

In general, we found that positive thinking training to the patients with CAD could improve their SWB effectively as its effect also could last for at least 1 month. Despite the limited number of the studies which address the effect of positive thinking on SWB, the results of similar studies such as those of Bekelman et al.<sup>10</sup> Asgari et al.<sup>20</sup> and Smith et al.<sup>21</sup> were consistent with ours. Nevertheless, more studies are required to assess the effect of such intervention in longer time intervals.

We found that majority of our participants reported moderate levels of SWB. Such finding was consistent with those of Asaroudi et al.<sup>18</sup> and Allahbakhshian et al.<sup>22</sup> While, we observed no difference between the two groups with respect to the total score of SWB; Jadidi et al.,<sup>16</sup> in a recent study, investigated the relationship between SWB and quality of life among elderly people and found that majority of the participants maintained a high level of SWB which can be attributed to their age. The correlation between age and SWB has also been confirmed in the studies by Rezaei et al.<sup>4</sup> and Seyed Fatemi et al.<sup>17</sup>

It should also be mentioned that after the intervention, 60.52% of patients in the intervention and 61.11% of those in the control group reported an intermediate level of SWB; while, 39.47 and 38.88% of the patients reported a high level of SWB in the intervention and control group respectively. While the mean score of SWB did not change significantly in the control group with high level of SWB in the after intervention phase compared with before-intervention; it reached from 23.68 (before-intervention phase) to 39.47 (after intervention phase) in the intervention group and did not changed after 1 month.

This study indicates that the positive thinking training can improve existential dimension (EWB) and religious dimension (RWB) of SWB in such a patient. Our results demonstrated that the mean score of RWB was higher than EWB in both groups. It was consistent with the findings of Rezaei et al.,<sup>4</sup> Asaroudi et al.<sup>18</sup> and Jadidi et al.<sup>16</sup> and in contrast with that of Allahbakhshian et al.<sup>22</sup> The fact that the mean score of EWB and RWB were higher in most of the mentioned studies may be due to the religious beliefs of Iranian people. Secondly, it may also be derived from the fact that RWB measures the level of communication with God. Besides, EWB seems a little more difficult to be achieved since it evaluates the feelings of

individuals about their life's goal and satisfaction and it is associated with human's existential philosophy. Moreover, another reason could be the difference which exists between the aforementioned studies regarding the type of recruited participants. The studies were done on the patients with cancer, nurses, elderly people and the patients suffering from multiple sclerosis respectively.

In our study, analysis of chi-square and independent t-test showed no significant difference between the intervention and control groups with respect to demographic variables (including sex, age, marital status, educational level and occupational status) and it was also similar to the findings of Allahbakhshian et al.,<sup>22</sup> Jadidi et al.,<sup>16</sup> and Büssing et al.<sup>23</sup>

Rezaei et al.<sup>4</sup> conducted a cross-sectional study on 360 patients with cancer to examine the relationship between praying and SWB. However, there was no significant correlation between SWB and sex; they found that it was correlated with the three factors of age, marital status and educational level as older, widowed and divorced people maintained higher levels of SWB. We found no correlation between SWB and demographic variables due to our small sample size. Therefore, studies with larger sample size are required to examine such correlation.

Optimism is an effective factor in human's well-being especially SWB. Despite, the advances in the skills and knowledge of physician and medical staff, non-material needs of human being still calls for attention. The importance of considering SWB in the treatment of patients is emphasized in the studies by Abolghasemi Mahani,<sup>19</sup> Jadidi et al.,<sup>16</sup> Allahbakhshian et al.,<sup>22</sup> Mazaheri et al.,<sup>24</sup> and Lin and Bauer-Wu.<sup>25</sup> However, more studies in this filed are still required.

#### Conclusion

We can conclude that positive thinking training could improve SWB in the patients with CAD. Positive thinking could increase the patients' SWB through reminding them of their positive aspects of their life, improving their communication with God as a divine source and teaching those strategies such as thanksgiving.

In general, optimism and positive thinking training are important measures in the treatment of the patients suffering from CAD and should be considered in nursing interventions and educations.

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#### **Conflict of Interests**

Authors have no conflict of interests.

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