



## Effects of spiritual care based on Ghalb Salim nursing model in reducing anxiety of patients undergoing CABG surgery

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### ABSTRACT

**Aims:** Anxious is very common among patients undergoing Coronary Artery Bypass Graft (CABG) surgery and it has significant effect on recovery process and following up treatment. The most important factor regarding treatment of anxiety is faith and religious affiliations. This study is conducted to assess the impact of spiritual care based on a Ghalb-e Salim (good heart) model in reducing anxiety of patient's candidate for CABG.

**Methods:** In this clinical trial study, 60 patients candidate for CABG were selected in Baqiyatallah (AJ) hospital in Tehran in 2013. These patients had moderate and sever anxiety score and they were divided into two experimental and control groups. Spiritual care based on Ghalb-e Salim model was done through educational booklet and direct education during hospitalization in experimental group. Beck Anxiety questionnaire was completed by the patients in three stages; during hospitalization, before surgery and before discharge; information was analyzed by using SPSS20 software and descriptive and inferential statistical tests.

**Results:** The preoperative anxiety in the experimental group was significantly reduced ( $9.8 \pm 3.5$ ); it is while preoperative anxiety of patients had a significant increase in the control group ( $37.7 \pm 11.71$ ). totally, based on independent t statistical test, anxiety was reduced after intervention ( $p=0.000$ ) The Mann-Whitney test showed that there was no significant difference between the two groups in terms of anxiety levels on admission, but preoperative anxiety levels in the experimental group and the control group were respectively in the moderate (40 %) and severe (80 %) level ( $p=0/001$ )

**Conclusions:** Spiritual care based on Ghalb-e Salim model was taken from Islamic statements and they are effective for organizing spiritual cares in nursing and reducing anxiety of the patient's candidates for cardiac surgery.

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## 1. Introduction

Cardiovascular diseases are among the most common cause of humans' death [1]. According to the world health report in 2008, Ischemic heart diseases are the cause of 12.8% of world deaths [2], and annually it causes death for about 3.8 million men and 3.4 million women [3]. Many complications of Ischemic heart diseases are due to reduction in coronary blood flow. The initial aim of treatment is good blood flow into the myocardium; CABG is a common method for the vascular treatment and it includes more complications and death in compare with Medical therapy and percutaneous interventions and it is a lifesaving technique in some cases [4] and its amount is increasing every year [5].

Surgery is along with several psychological complications [6]; since it's a threat to life, it endangers health and can cause some psychological reactions such as anxiety [8]. patients undergoing heart surgery experience a large crisis in their life and since there is a direct relationship between heart and death and life, patients have extensive psychological and emotional reactions towards surgery and waiting for heart surgery is the cause of a big tension which leads to patients' anxiety and stress [9]. In the conducted studies, level of anxiety before surgery is 34% and after surgery is 24.7% [10] and it has been reported 40% in some reports [11].

In Iran, in the study of Ebadi et al. level of anxiety in CABG patients is more than drug therapy and angioplasty treatments [12]. Anxiety is a man's emotional reaction to risk and it is not related to the reality of present situation, but it is related to what the person thinks of it [13]. Anxiety symptoms is different from one person to another [14]. Anxiety is started since a patient's awareness about surgery and it reaches its pick at the time of hospitalization [15]. Patients' reactions are different based on the kind of surgery, effects and results of the surgery and her/his personality, they may be afraid of death, pain,

disability, dependence on others and losing social status or unknowns [16].

Anxiety causes increased heart rate, increased peripheral vascular resistance and increase in circulating fatty acids by influencing autonomous system of the heart through pituitary hypothalamus axis, impaired vagal control, increased blood pressure and increased epinephrine and norepinephrine [17]. Anxiety also has negative effect on healing and tissue repair and it leads to fatigue, increased protein breakdown, increased risk of infection, fluid and electrolyte imbalance and changes in sleep patterns [18].

Anxiety and fear influence the amount and the type of used anesthetic drugs during surgery [19]. The main outcome of anxiety which can be unbearable for a person is inability. A human being can be active and brave against big dangers, but regarding anxiety a person feels that he/she is helpless and defenseless and it is because of enlarging risks by that person's psychological risk factors [20]. These issues cause longer stay in the hospital and delay in patients' discharge [21]. Considering the importance of anxiety and close relationship of nurses and patients, using different methods for reducing anxiety are recognized as the nursing independent interventions which don't need medical interventions and advice [22]. Anxiety is a multi-faceted phenomenon which includes physical, mental, emotional and spiritual aspects of health. Many common programs for managing anxiety are based on mechanical pattern and they exclusively consider physical health and different methods to achieve peace specifically techniques to reduce muscle tension are used. These methods only consider symptoms and are not helpful in removing stress causes, so that symptoms appear again [23].

Because of patients' dissatisfaction with the care process and considering physical care and disregarding their psychological and social needs [24], the researcher was trying to find a comprehensive program to encounter a person with anxiety roots effectively and consider the

four aspects of health [23]. Considering the role of spirituality and spiritual care against diseases and decreasing anxiety and facilitating treatment [25] and considering the role of culture and religion in spiritual care (26-51) and reviewing studies in this regard, such as the role of praying, religious beliefs, Quran recitation, supporting religious rituals and using religious remembrances, we found out that although these interventions have had positive effects on reducing anxiety, they have been performed in its one-dimension and individuals' mental capacity, talents and tendencies, compatibility level, each individual's coping methods and also the role of the family regarding the care issue are not considered. It was necessary to conduct a research that can perform theoretical concepts of Islam about human at the bedside and provides a special model according to the society culture and genuine Islamic culture for explaining professional relationships; it was done to enable the nurses to cause psychological adjustment for patients at any levels of non-health that they are in. for this purpose we used Ghalb-e Salim spiritual care model to reduce patients' anxiety, this model is based on spiritual care and its main care core is patient and family which set care pattern based on nursing process procedures in human's spiritual quartet relationships (that is relationship with God, himself/herself, others, nature and environment) [27].

For choosing an appropriate care model, holistic view of care should be along with community orientation [28]. Ghalb-e Salim model considers the human influencing by environment (but not stick to force of events and passive), an existing one who has the power of free will and authority who can react against environment, its changes and harshness and considers health as having a Ghalb-e Salim that makes feeling of safety, hopefulness, love and happiness so that achieve peace and satisfaction with the destiny through living at the moment (not fear of future and grief of past), considers disease due to wrong lifestyle and suffering from ethical problems (such as

fear, grief, jealousy and grudge) as disease too and tries to change his/her intentions and lifestyle through correcting quadripartite relationships. It is necessary for nurses that in addition to reforming performance (behavior), help in reforming thoughts and intentions to provide the background for achieving Ghalb-e Salim and in addition to setting and reforming physical environment through setting patient's psychological, social and mental environment to lead the patient to Makarem-ol-akhlagh (the best ethics; patience, thankfulness and satisfaction) through using Divine color for the human spiritual connections. Ghalb-e Salim care model was used for doing this project [25].

## 2. Method

This was a clinical trial study which was recorded in clinical trial center with 2013101515025N1 number: it was done in 2013 for assessing the effect of spiritual care model of Ghalb-e Salim on anxiety of the patients undergoing CABG in Baqiatallah (AJ) hospital of Tehran. Population of the study were patients who were hospitalized in men and women's medical heart wards and CCU and they were candidates for CABG or they were in the list of CABG after coronary angiography. Firstly, patients with the inclusion criteria were divided into two thirty-people case and control groups. They were divided through random allocation. Inclusion criteria include:

1. Patients ready for coronary bypass graft
2. Older than 18 years old
3. Being under coronary bypass graft surgery for the first time
4. Lack of history of mental illness and psychiatric drugs and complete awareness about time, place and people
5. Lack of drug consumption
6. Informed consent for participating in the study

## Data collection tools included:

1. Demographic questionnaire including; information about age, gender, marital

status, education, occupation, income, history of underlying diseases.

2. Beck anxiety standard questionnaire which shows the amount of patients' current anxiety and includes 21 phrases and each phrase is the reflection of one of the anxiety symptoms.

Every four-choice phrase of the amount of anxiety includes: never, little, moderate and severe. These four options take zero, one, two and three scores respectively. Totally; 0 to 21, 22 to 35 and higher than 35 are respectively low, moderate and severe anxiety. We considered 21 as the cut off score in our study. This scale achieved high internal stability and the correlation of its substances include a range from 0.30 to 0.71 (mean: 0.60) [29]. Validity and reliability of the questionnaire were assessed in the study of Kaviani and Mousavi (2008) and the results indicated that it is in appropriate situation in terms of validity through convergent validity ( $r=0.72$ ), reliability through re-test method ( $r=0.83$ ) and internal stability ( $\alpha=0.92$ ) [30]. The researcher started sampling after university introduction and explaining about the aims of the study to the center officials and achieving their consent and cooperation.

The researcher was present at each sample's bedside in the first day of hospitalization and explained the inclusion criteria to the patients. The aims, duration and the measures that were going to be done were explained. The patient was sure that his/her information will remain confidential and participating in the study is optional and they can be out of the study at any time. Demographic information form and informed consent form for participating in the study were achieved and then demographic information form and Beck anxiety questionnaire were completed in the both groups. In the stage before surgery (at least one hour before surgery) and also at the time of discharge, the questionnaire was completed again.

Spiritual intervention in the experimental group was done based on the Ghalb-e Salim model

through using educational booklet which was designed by the researcher and colleagues by the help of religious books and experts; it was done along with direct education. Spiritual care was set based on religious spirituality and quartet human relationships (relationship with God, himself/herself, others and environment) in the booklet. The kind of information was done according to patient's choice and tendency by considering individuals' different spirituality levels, tendency and capacity. Regarding relationship with God, worshipping (Doa), praying (Salat), reading Quran and specific incovations that are specially stated for fear and anxiety such as "For us Allah sufficient and He is the best Guardian, the Best to protect and the Best to help" . Regarding relationship with others, forgiveness, loving others, charity and being optimistic were recommended. Regarding relationship with environment: looking at brunette and grass, also listening to birds' singing, water, Quran, religious lectures and sound of nature were facilitated for the patients by using headphone. Regarding relationship with himself/herself, in addition to patients' awareness regarding disease and treatment process, each patient's coping mechanisms at the time of problems was recognized and we tried to improve coping method through recommended methods in Islam such as meditation (Moraghebeh) by providing checklist and using recommended Hadiths and reading prophets' stories. The researcher took care of the patients in experimental group in all the days of hospitalization from 8 a.m. to 2 p.m. Firstly nurses started therapeutic communication and relationship based on humanization and avoiding any kind of judgment about patient and family and it was done based on empathy and collaboration. Cooperation and participation of the patient and his/her family and performing cares and admission and choosing the method of care by them was one of the basic elements of care in Ghalb-e Salim model. The aim of nursing in this model is taking care of the patient's reactions against actual and potential problems

of health according to the method of solving problem, long-term aim, changing emotions due to fear and grief to emotions full of peace and happiness and certainty with security, trust and love (Ghalb-e Salim ),it means that grief of the lost health or fear of future do not bother the patient and the patience against illness suffering is something sacred for the patient [25].SPSS20 software and descriptive statistics (mean, standard deviation and frequency) and inferential statistics such as Chi-square, independent and paired t, Mann-Whitney and Variance analysis, repetitive measurements and Fridman test by the observation of the statistic professor were used for analyzing collected information. The mean of anxiety scores was achieved in every step of experimental and control group, also the process of changes was compared and the levels of anxiety and the process of changing in the levels were observed and the two groups were compared.

### 3. Results

Table 2 shows that according to the independent t statistical test, the mean of anxiety score in experimental and control group ( $32.5 \pm 9.5$ ) and the mean of anxiety score of the two groups are not statistically different at the beginning of hospitalization ( $p=0.78$ ). but in the stages before surgery, the mean of scores in the experimental group ( $9.8 \pm 3.5$ ) and in control group ( $37.7 \pm 11.71$ ) were significantly different and also at the time of discharge, the mean of scores in experimental group ( $1.2 \pm 1.4$ ) and in control group ( $4.9 \pm 2.3$ ) were significantly different in both groups and the mean of anxiety was decreased after intervention ( $p=0.000$ ). Comparing the process of changes in the two groups, Variance analysis test of the repetitive measures showed that the two groups are significantly different ( $p=0.000$ ).

Table 3 shows that according to Mann-Whitney test, the two groups are not significantly different in terms of level of anxiety during hospitalization ( $p=0.59$ ),but there is significant difference before surgery in the two groups and the level of anxiety in experimental group is

little and in control group, it's in moderate (40%) and severe (80%) level ( $p=0.001$ ) and there is no significant difference in the two groups at the time of discharge ( $p=0.99$ ). According to the Fridmand test, the two groups are significantly different in the above stages and intervention has influenced changes of anxiety level ( $p=0.001$ ).

### 4. Discussion

In the present study, the level of anxiety at the beginning of hospitalization in the experimental and control groups were respectively;  $32.5 \pm 9.8$  and  $33.5 \pm 10.2$ , before surgery and after intervention anxiety level in experimental and control group were respectively  $9.8 \pm 3.5$  and  $37.7 \pm 11.7$  and during discharge, anxiety level in experimental and control were respectively  $1.2 \pm 1.4$  and  $4.9 \pm 2.3$ . These findings are in consistent with the findings of the study of Rymaszewska in which 55% of the patients before surgery and 34% after surgery were suffering from anxiety and 32% of the patients had some levels of anxiety after one month [31]; it was also in consistent with the study of Merry in which 50% of the patients had low and moderate anxiety and 5% had severe anxiety [32]; also this study is in consistent with the study of Hallas [32], Krannich [11], Holger [33], Dehdari [34] and Ebadi [12].

One of the important factors influencing stress and anxiety is religion and religious beliefs [35]; it is because of that religion influences an individual's attitude, recognition and behavior [36] and it influences thinking and evaluation process of everyday life events of an individual as a mediator. Many researchers believe that coping with excitement and difficult conditions is easier by the help of faith [35]. The effect of spiritual care on anxiety reduction can be seen in this study clearly and its' in consistent with the results of the study regarding the effect of Quran recitation on anxiety of the patients prepared for CABG which caused reduction of anxiety before surgery ( $p<0.05$ ) [37].

Results of this study were also in consistent with the studies of Nasr-Abadi and the effect of

religious incovations on reducing anxiety before surgery ( $p=0.006$ ) [38], Atari and the effect of Quran recitation on reducing anxiety

before surgery ( $p=0.002$ ) [39], Tajvidi ( $p<0.05$ ) [40], Khatouni ( $p<0.05$ ) [41], Aghajani [42], Majidi [43], Momeni [44] and Jahani [45], also

Table 1: Compared the distribution of demographic groups

| Variable                       |                  | Group | Experimental number<br>(percent) | Control number<br>(percent) | Statistical test                   |
|--------------------------------|------------------|-------|----------------------------------|-----------------------------|------------------------------------|
| Age                            |                  |       | 58.8±8.8                         | 62.8±9.1                    | t=1.7                              |
| Gender                         | Female           |       | 15(50)                           | 15(50)                      | Fisher Exact<br>tes=000<br>p=0.99  |
|                                | Male             |       | 15(50)                           | 15 (50)                     |                                    |
| Married                        | Marital status   |       | (26) 86.7                        | 26 (66.7)                   | $\chi^2=3.35$<br>p=0.12            |
|                                | Widow/widower    |       | 4 (13.3)                         | 10 (33.3)                   |                                    |
| Education                      | Low literacy     |       | 16 (53.3)                        | 24 (80)                     | Fisher Exact<br>tes=0.054          |
|                                | Literate         |       | 14 (46.7)                        | 6(20)                       |                                    |
| Occupation                     | Employed         |       | 6 (20)                           | 7(23.3)                     | $\chi^2=0.93$<br>p=0.13            |
|                                | Unemployed       |       | 10(33.3)                         | 9(30)                       |                                    |
|                                | Housewife        |       | 14 (46.7)                        | 14(46.7)                    |                                    |
| The level of salary            | High             |       | 10 (33.3)                        | 16 (53.30)                  | $\chi^2=3.96$<br>p=0.26            |
|                                | Moderate         |       | 19 (63.3)                        | 12 (40)                     |                                    |
|                                | low              |       | 1 (3.3)                          | 2(6.70)                     |                                    |
| Underlying Illness             | Have             |       | 27 (90)                          | 24 (80)                     | Fisher Exact<br>tes=0.23<br>p=0.27 |
|                                | Don't have       |       | 3 (10)                           | 6 (20)                      |                                    |
| The beginning of heart illness | Below six months |       | 23 (76.7)                        | 18 (60)                     | Fisher Exact<br>tes=0.13<br>P=0.16 |
|                                | Above six months |       | 7 (23.3)                         | 12 (40)                     |                                    |
| History of surgery             | Have             |       | 7 (23.3)                         | 4 (13.3)                    | Fisher Exact<br>tes=0.25           |
|                                | Don't have       |       | 23 (76.7)                        | 26 (86.7)                   |                                    |

Table 2: The mean anxiety score of patients, depending on the measure

| Anxiety           |          | During hospitalization | During surgery   | Discharge        | Fridman test            |                         |
|-------------------|----------|------------------------|------------------|------------------|-------------------------|-------------------------|
| Group             | Severity | Number (percent)       | Number (percent) | Number (percent) | Significant level       |                         |
| Intervention      | Little   | 0 (0)                  | 30 (100)         | 30 (100)         | $\chi^2=56$<br>p=0.001  | $\chi^2=7.32$<br>p=0.01 |
|                   | Moderate | 20 (60)                | 0 (0)            | 0 (0)            |                         |                         |
|                   | Severe   | 10 (33.3)              | 0 (0)            | 0 (0)            |                         |                         |
| Control           | Little   | 0 (0)                  | 0 (0)            | 30 (100)         | $\chi^2=53.3$<br>p=0.01 |                         |
|                   | Moderate | 17 (46.7)              | 12 (40)          | 0 (0)            |                         |                         |
|                   | Severe   | 13 (43.3)              | 18 (80)          | 0 (0)            |                         |                         |
| Mann-Whitney test |          | Z=-0.53                | Z=-7.2           | Z=0              |                         |                         |

with foreigner studies such as Hefty which assessed the effect of faith and pray ( $p=0.005$ ) [46], Park and changing lifestyle through religious method and teaching stress management and doing some exercises before surgery and calling the trainer every fifteen days during three months after surgery which caused higher life expectancy [47], study of Emi Kouing in which divine love was stated as the emotional and religious growth index in CABG patients; it was stated that sense of spiritual support is a strong factor in reducing stress and depression after surgery [48], David who stated that religious thought before surgery causes peace and sense of spiritual support after surgery [49], Back Handson and the role of faith and believe in God as a strong emotional factor in patients [50] and Naji and spiritual supportive role in cardiac patients [51].

Comparing with other methods of reducing anxiety such as reflexology which was done by Rezayee, the mean of anxiety before intervention and after intervention was respectively 63.36 and 43.04 [52]. In the study of Basampour regarding the effect of education before surgery, the level of anxiety from  $24.3 \pm 12.3$  was reached to 15.3 on the day of surgery and 7.9 after surgery [53]. In the study of Mousavi regarding face-to-face education, the anxiety was 11.63 and it was reached to

6.68 [54], spiritual care based on Salim heart model caused more decrease of level of anxiety. Spiritual experiences during care is among the unique features of this study which is not mentioned in any other studies is.

These spiritual events which are called lack of mediator or presence by Karl Rajerz were experienced in this study. Karl Rajerz stated that there was a relationship between my internal soul and the client's internal soul for some moments and a healing energy was created; he considered unconditional acceptance, empathic understanding, and purity as the three basic conditions of treatment. Touren calls these experiences as compassion which covers the whole existence of a person. Wiliam called it a kind of sense of relief, satisfaction, giant peace and love or a level of intensifying energy or the grace of God or power of healing. Martin Boubert, a Jewish philosopher found out that a relationship between you and me and creating an ergogenic dealing between two people is a dealing that God can be seen in that [55]. These spiritual experiences were specifically observed in patients with severe anxiety; so that they decreased patients' anxiety significantly and patients were ready for surgery with peace of mind and they thanked and appreciated the provided spiritual cares.

Table3: Compare the level of anxiety in two groups and every time step

| Group \ Stage | Stage                                      |                                    |                                      | Variance analysis of repetitive measures |                    |
|---------------|--|------------------------------------|--------------------------------------|--|--------------------|
|               | During hospitalization<br>Mean ( $\pm$ SD) | Before surgery<br>Mean ( $\pm$ SD) | During discharge<br>Mean ( $\pm$ SD) | Significance level                       |                    |
| Intervention  | 32.5 $\pm$ 9.5                             | 9.8 $\pm$ 3.5                      | 1.2 $\pm$ 1.4                        | F=270.45<br>p=0.001                      | F=104.1<br>p=0.001 |
| Control       | 33.2 $\pm$ 10.2                            | 37.7 $\pm$ 11.71                   | 4.9 $\pm$ 2.3                        | F=268.3<br>p=0.001                       |                    |
| Independent T | T=-0.27<br>df=58<br>p=0.78                 | T=-12.5<br>df=58<br>p=0.001        | T=-7.36<br>df=58<br>p=0.001          |  |                    |

SD=Standard Deviation

## 5. Conclusions

Results achieved from this study indicate high level of anxiety in patients' candidate for CABG and also positive relationship between spirituality and religiosity and comfort and health. So it's time to perform spiritual cares in the form of nursing process, since it's a scientific method for solving the problems by observing regularity and standards and by emphasizing on culture and religion based on religious care models in the hospitals to enable the nurses to maximize compatibility in the patients with any level of failure of health. We are hopeful that this research is a big step for performing Islamic care pattern in nursing.

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