Symptom management strategies of Jordanian patients following coronary artery bypass grafting surgery

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The aim of this study was to explore the symptom management strategies utilized by post coronary artery bypass graft (CABG) patients and its associations with demographic variables. A clear understanding of the use of symptom management strategies following CABG surgery may help nurses in developing educational program and interventions that help patients and their families during recovery period after discharge. A cross-sectional, descriptive design was utilized. A convenience sample of 100 Jordanian patients post CABG surgery selected from five hospitals was surveyed between November 2012 and June 2013 using the Cardiac Symptom Survey. Chi squared analyses were used to examine the associations between the symptoms management strategies and selected demographic variables. Frequency of symptom management strategies utilized by post CABG patients revealed that most frequently employed strategies were use of medications (79%), repositioning (54%) and the rest (45%). Symptom management strategies utilized for poor appetite, sleeping problem and fatigue had significant associations with demographic variables. By providing information about the symptoms expected after surgery and possible ways to manage them, will strengthen the patients psychologically and will make CABG experience within the realm of self-management and coping.

Key words: CABG, coronary artery bypass graft, Jordanain, symptom management strategies.

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All authors met the authorship criteria and are in agreement with the content of the manuscript.

INTRODUCTION
Coronary artery disease (CAD) mortality rate was estimated at 7.4 million and continues to hold its reign as the leading cause of death worldwide. The greater proportion of the burden is experienced in the high income countries, followed by upper middle countries. The morbidity states due to CAD were projected at 3616,000 for the Southeast Asian countries. In Jordan, the burden of CAD is representative of the world standards and has been reported by World Health Organization (WHO) to be the highest cause of death among Jordanian men and women.

Coronary artery bypass grafting (CABG) is a lifesaving surgical procedure of choice for most patients with advanced CAD. The physical and psychological discomforts experienced by patients after CABG have been comprehensively illuminated in literature. With the outset of the fast tracked protocols in health-care delivery system, most patients carry home with them their discomforts. The manner in which these symptoms are managed by post CABG patients has not been consistently or comprehensively explored internationally.

BACKGROUND
Literature has consistently recorded the continuum of symptoms experienced by the patients who undergo CABG. The symptom experience in the physical domain includes shortness of breath, fatigue, trouble sleeping, pain and swelling; the psychological domain is consisted of anxiety and depression. Empirical evidences on therapeutic strategies and self-managed techniques instituted to prevent and manage these symptoms have been reported by many studies. The rest has been reported by post CABG patients to overcome dyspnea, fatigue, sleep disturbances, anxiety and depression.

Many studies quote the use of medications as the first choice for reducing pain. Pain medication taken before bed time has also been reported to improve sleep. Activities like short walk or riding a stationary bicycle every day were practiced by post CABG patients to enhance sleep. Altering routines was a prevalent practice among post CABG patients. Balancing between activity and rest, sitting down when doing of housework and using of a grocery cart when shopping are techniques utilized by post CABG patients to alleviate stress. Sleep restriction therapy has been reported by post CABG patient to improve their sleep quality and quantity.

Behaviours used by post CABG patients to divert their attention from anxiety were music therapy, listening to prayer and presence of family caregivers. Repositioning techniques instituted by post CABG patients was mainly to reduce leg swelling by keeping legs elevated in a chair. Literature reports the prevalent use of adjunct therapies for many of the symptoms experienced by post CABG patients. Using pillows to support incision during movement and applying heat or ice have been evidenced in literature to reduce chest incisional pain. Slow deep breathing exercises and cough manoeuvres by placing the palm of hands firmly on the chest incision were found to decrease airway secretions. Wearing comfortable clothes and low heeled shoes has been cited for fatigue reduction.

Use of massage therapy to improve sleep and reduce anxiety and depression has been magnified in literature. Use of compressive stocking to alleviate leg swelling was also identified as an adjunct therapy among post CABG patients. Behaviours involving a change in eating patterns or foods consumed like limiting dietary restrictions, provision of smaller and more frequent meals, snacks and supplements and changing of diet had significantly improved the appetite of post CABG patients.

A clear understanding of the use of symptom management strategies following CABG surgery could help nurses in developing educational programme and new interventions that help patients and their families during recovery period after hospital discharge. No previous study has investigated these phenomena in Jordan or the region. Effective and efficient practice of these strategies can facilitate early recovery and reduce readmission to the hospital. Giving patients the control and confidence to deal with their symptoms will foster independence and contribute vastly to an improvement in their quality of life.

METHODS
Aims
The aim of this study was to explore the symptom management strategies utilized by post CABG patients. The study empirically evidenced the strategies that were effective in relieving post CABG discomforts and also directed healthcare providers to understand the tendency of specific demographic traits in utilizing these strategies.

Design
The design utilized for the study was descriptive, cross-sectional design to assess symptom management strategies utilized by patients after CABG surgery and there associations with selected demographic variables.
Sample and setting

Non-probability convenient sampling of 100 Jordanian patients post CABG surgery was selected from five hospitals in Jordan between November 2012 and June 2013. The sample size was estimated according to Cohen\textsuperscript{20} formula, with power = 0.80, \( \alpha = 0.05 \), medium effect size. The results of the power analysis for chi-squared (\( \chi^2 \)) test at \( df = 1 \) showed that the required sample size was 87 patients. However, more patients were included to acquire more significant and reliable findings and to allow for an acceptable dropout rate. Inclusion criteria were (i) 18 years or older, (ii) have undergone CABG surgery for first time, (iii) oriented and able to hear and speak, (iv) have a telephone service. On the other hand, patients were excluded if they had an active psychiatric diagnosis that might affect the ability of the patients to respond to the questionnaire.

The patients selected for the study had undergone CABG in one of the five hospitals located in the capital city of Amman and the second largest city Irbid. These hospitals included two teaching hospitals (Jordan University Hospital and King Abdullah University Hospital) and three private hospitals (Islamic Hospital, Amman Surgical Hospital and Jordan Hospital). In these hospitals, the general protocol is for post CABG patients to be nursed in the Intensive Care Units for 2 days and then transferred to step-down units for 4 days before discharge.

Instruments

The Demographic Data Sheet was designed by the researchers to collect background information from both patients and medical records (gender, age, educational level, income, working status, height and weight, smoking and chronic diseases). The body mass index (BMI) for the participants was computed from their weight and height measurements (BMI = weight (kg)/[height (m)]\(^2\)), and they were categorized based on World Health Organization\textsuperscript{21} standards as normal weight (18.5–24.9 kg/m\(^2\)), overweight (25–29.9 kg/m\(^2\)) or obese (\( \geq 30\) kg/m\(^2\)).

To assess the discomforts symptoms experienced by patients who undergo CABG, the Cardiac Symptom Survey (CSS) was utilized.\textsuperscript{22} Although this tool has three dimensions, the component, which measures the perception of symptom presence, was alone considered for this study. The Cronbach’s alphas for this instrument ranged from 0.85 to 0.98.\textsuperscript{23}

The CSS questionnaire was rigorously translated back and forth from English to Arabic language. The content validity of the tools was reviewed by three Doctorate experts. A pilot study with a sample of ten patients post CABG served as the medium to examine the reliability of the CSS instrument. The results of pilot study indicated that the Cronbach’s alphas for the instrument ranged from 0.83 to 0.99. In addition, questions required between 15–20 min to answer.

Symptom management strategies were measured using the categories of symptom management strategies developed by Schulz et al.\textsuperscript{19} The categories were empirically formulated and utilized in a study on symptom management strategies used by elderly patients after CABG surgery.\textsuperscript{19} The categories list nine strategies that include rest, medications, seek help, activity, alter routine, distraction, repositional, adjunct treatments and change diet. Content validity of the categories was maintained by a nurse specialized in cardiovascular nursing, and criterion validity was assessed by comparing the categories to the guidelines of American Heart Association and Society of Thoracic Surgeons.\textsuperscript{19} The definitions and the various ways by which these strategies are implemented were explained to participants.

Data collection

Formal consent was taken from the participants who consented for the study. With the Demographic Data Sheet, data related to the participants’ personal and medical background were collected before hospital discharge. After 2 weeks of their discharge, each participant received a phone call from the researcher who utilized the CSS to ascertain any symptom experienced by the participant. The categories of symptom management strategies were used as a framework to ascertain, if the patients who did experience discomforts during the 2 weeks utilize any strategy to relieve their symptoms.

A total of 106 patients were invited to participate in the study. Three patients refused to be contacted after hospital discharge; one patient was feeling tired and refused to recall later, and one contact number was out of service. One patient was excluded from the study because the patient underwent a re-opening surgery during first week after discharge. The remaining 100 respondents (response rate 94.3%) were included in the study.

Ethical considerations

This study was approved by the human subject research committee (reference no 14/2010/10) of Jordan University of Science and Technology. Institutional permission from the teaching and private hospitals was also obtained before the conduct of the study. The study purpose
was clarified to nursing administration, charge nurses and patients who met the inclusion criteria. In addition, the importance of the study in improving of the quality of health care was also explained. Patients’ names and telephone numbers were written in separate cards and coded into numbers for the Cardiac Symptom Survey. Written consent forms were obtained from all patients at the day of discharge after assuring that their participation will be voluntary. Patients were also assured that they can withdraw from the research at any time, information obtained will be treated confidentially and aggregated data will be communicated if requested.

Data analysis
Data were analysed using SPSS version 19 (SPSS, Chicago, IL, USA). A 0.05 criterion for statistical significance was employed for the analyses. Demographic variables of the participants and other study variables were analysed using descriptive statistics including mean, standard deviations, frequency and percentages. Chi-squared analysis ($\chi^2$) was used to examine the differences between symptom management strategies and demographic variables.

RESULTS
Sample characteristics
The majority of the participants were men (80%) ($n = 80$). The number of participants, who were < 60 years of age (55%) ($n = 55$), marginally dominated the group of participants. A more number of participants were educated (83%) ($n = 83$) and employed (66%) ($n = 66$). A glimpse at their previous health profile revealed that 78% ($n = 78$) of them were smokers, 62% ($n = 62$) were overweight or obese and nearly half (47%) ($n = 47$) of the participants had diabetes, hypertension or both (Table 1).

Symptom management strategies utilized by patients post coronary artery bypass grafting surgery
The major symptoms elicited from the interview conducted among post CABG patients during the 2 weeks following their surgery were chest incisional pain (65%), leg swelling (60%), poor appetite (56%), trouble sleeping (54%) and leg incisional pain (52%) ($n = 52$). Symptoms that were perceived by a minority of the respondents were fatigue (43%) ($n = 43$), anxiety (32%) ($n = 32$) and shortness of breath (29%) ($n = 29$). Symptoms like fluttering (15%) ($n = 15$), angina (8%) ($n = 8$) and depression (3%) ($n = 3$) were reported by a few participants.

Frequency of symptom management strategies utilized by post CABG patients revealed that most frequently employed strategies were use of medications (79%), repositioning (54%) and rest (45%). Seeking help (27%), distraction (22%), activity (21%) and adjunct therapy (21%) were used in moderation. Very few participants explored change in diet (9%) and altering routines (2%) to impede their symptoms experiences after CABG.

Table 1 Demographic characteristics of patients post coronary artery bypass grafting surgery ($n = 100$)

<table>
<thead>
<tr>
<th>Variable</th>
<th>% ($n$)</th>
<th>Mean (SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Male</td>
<td>80% (80)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Female</td>
<td>20% (20)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Age</td>
<td>—</td>
<td>57.67 (9.70)</td>
<td>40–75</td>
</tr>
<tr>
<td>&lt; 60 years old</td>
<td>55% (55)</td>
<td>50.29 (5.35)</td>
<td>40–59</td>
</tr>
<tr>
<td>60 or older</td>
<td>45% (45)</td>
<td>66.69 (5.06)</td>
<td>60–75</td>
</tr>
<tr>
<td>Educational status</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Illiterates</td>
<td>17% (17)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Educated</td>
<td>83% (83)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Working status</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Unemployed</td>
<td>34% (34)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Employed</td>
<td>66% (66)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Residency</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>City</td>
<td>66% (66)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Village</td>
<td>34% (34)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Monthly income</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>&lt; 300 JD</td>
<td>55% (55)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>300–500 JD</td>
<td>27% (27)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Smoking habits</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Not smoker</td>
<td>78% (78)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Smoker</td>
<td>22% (22)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Body mass index</td>
<td>—</td>
<td>26.72 (3.46)</td>
<td>19.5–39.1</td>
</tr>
<tr>
<td>Normal</td>
<td>38% (38)</td>
<td>23.42 (1.18)</td>
<td>25–29.8</td>
</tr>
<tr>
<td>Overweight</td>
<td>42% (42)</td>
<td>27.19 (1.15)</td>
<td>19.5–24.9</td>
</tr>
<tr>
<td>Obese</td>
<td>20% (20)</td>
<td>31.99 (2.05)</td>
<td>30–39</td>
</tr>
<tr>
<td>Chronic diseases$^1$</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>None</td>
<td>22% (22)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Hypertension</td>
<td>47% (47)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Diabetes</td>
<td>47% (47)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>30% (30)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Heart failure</td>
<td>2% (2)</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

$^1$Not mutually exclusive.
Symptom management strategies utilized by patients post coronary artery bypass grafting surgery

The most common symptom perceived by post CABG patients during the 2 weeks following their surgery was chest incisional pain, which was primarily managed with medications (37%) and repositioning (32%). Leg swelling was predominantly managed with repositioning (38%) and medications (25%). Seventy-five per cent of post CABG patients who had experienced poor appetite did not utilize any strategy to relieve this discomfort. Meanwhile, changing diet (16%) was principally used by those who initiated symptom management strategy. The rest (63%) outweighed all other strategies implemented by the study participants to overcome fatigue. Distraction (31%) was practiced more than activity (21%) by the post CABG patients who had experienced anxiety (Fig. 1).

Associations between demographic variables and symptom management strategies utilized by post coronary artery bypass grafting patients

The results indicated that symptom management strategies utilized by post CABG patients for poor appetite, sleeping problem and fatigue had significant associations with demographic variables (Table 2). Chi-squared results indicated that female ($\chi^2 = 9.37, df = 1, P < 0.01$), patients aged more than 60 ($\chi^2 = 5.42, df = 1, P < 0.05$) and patients with a history of chronic disease ($\chi^2 = 5.80, df = 1, P < 0.05$) had used more strategies to manage poor appetite.

In the current study, a significant difference was found between gender and strategies to manage sleeping disturbances ($\chi^2 = 24.710, df = 1, P < 0.001$), which implied that majority of the men did not utilize any strategy to manage sleep disturbances. Also, a significant difference was found between sources of health information and strategies to manage sleep disturbances ($\chi^2 = 5.46, df = 1, P < 0.05$). The percentage of participants who did not access any source of information but utilized strategies to manage sleep disturbances was higher than those who did not use any strategy (40 vs. 19).

The results of current study found that male participants used strategies to manage fatigue more than female ($\chi^2 = 8.32, df = 1, P < 0.01$). In addition, participants with fatigue who accessed health information used more strategies to manage sleep disturbances than who did not access any source of health information ($\chi^2 = 3.92, df = 1, P < 0.05$) (Table 2).
DISCUSSION

The purpose of this study was to explore the symptom management strategies of Jordanian post CABG patients and their associations with demographic variables. Chest incisional pain, which had been reported as the most frequent discomfort among post CABG patients, is also resonated in many similar studies. This discomfort is magnified by the respondents as it interferes with their sleep, activities and mood. Leg swelling after a CABG has been reported to limit the physical functioning of many patients.

The prevalence of sleep and appetite problems among post CABG patients has been prevalently reported in literature. Both of these symptoms have been attributed in literature to the medications taken by these patients during the recovery phase. The less frequently reported symptoms like fatigue and shortness of breath have also been documented in literature in similar frequency patterns. These less frequent symptoms have been reported in literature to diminish within the recovery period.

Table 2: Significant associations between post coronary artery bypass grafting symptoms management strategies and demographic variables (n = 100)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Poor appetite</th>
<th>Sleeping problem</th>
<th>Fatigue</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes % (n)</td>
<td>No % (n)</td>
<td>χ²</td>
</tr>
<tr>
<td>Gender†</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>53 (9)</td>
<td>86 (71)</td>
<td>9.37**</td>
</tr>
<tr>
<td>female</td>
<td>47 (8)</td>
<td>14 (12)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 60</td>
<td>29 (5)</td>
<td>60 (50)</td>
<td>5.42*</td>
</tr>
<tr>
<td>≥ 60</td>
<td>71 (12)</td>
<td>40 (33)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>35 (6)</td>
<td>13 (11)</td>
<td>3.16</td>
</tr>
<tr>
<td>Educated</td>
<td>65 (11)</td>
<td>87 (72)</td>
<td></td>
</tr>
<tr>
<td>Source of information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any source</td>
<td>59 (10)</td>
<td>76 (63)</td>
<td>2.10</td>
</tr>
<tr>
<td>No interest</td>
<td>41 (7)</td>
<td>24 (20)</td>
<td></td>
</tr>
<tr>
<td>Chronic disease†</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>5 (1)</td>
<td>26 (22)</td>
<td>5.80*</td>
</tr>
<tr>
<td>Yes</td>
<td>95 (16)</td>
<td>74 (61)</td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.05, **p < 0.01, ***p < 0.001. †Fisher’s Exact test (expected frequency < 5).

Symptom management strategies of Jordanian patients post coronary artery bypass grafting for frequently reported symptoms

In the present study, chest and leg incisional pain experienced by post CABG patients was predominantly relieved with medications. Literature showcases that opioids were liberally utilized in the initial weeks after surgery followed by the use of non-opioids in the weeks of recovery. The prominent and distressful side effects of these medications like constipation, drowsiness, nausea and vomiting could have persuaded the participants of the current study to rely on other non-pharmacological strategies like rest or repositioning. Most of the study participants had also resorted to seeking help to relieve their pain. Watt-Watson et al. reported that post CABG patients who were aware of the importance of pain relief methods and the impact pain had on recovery were prompt to report and request for pain medications. This is a classic example of ‘seeking help’ as a strategy to relieve pain symptoms.
Most of the post CABG patients who participated in the current study did not take any measures to relieve their loss of appetite. The strategy, which was deemed helpful by the few who practiced them, was changing their diet. Post CABG patients should be encouraged to utilize appetite improving strategies like eating small meals, including favourite foods, reducing seasoning and forcing themselves to eat.19

Measures implemented by the post CABG patients sampled for the current study with difficulty in sleeping were primarily with medications followed by distraction and altering routines. Redeker and Hedges26 reported that sleep is disrupted strongly in the immediate postoperative period because of the intense pain experienced by post CABG patients. During this phase, patients would have resorted to medications, but with the reduction in pain over the following weeks,10 other measures like sleeping in a recliner, changing positions, relaxation and listening to music would have been instituted. 17

Fatigue, which was prevalent among the current study participants, was most frequently tackled by rest and less frequently by activity and adjunct treatments. This prompts the researchers to exemplify the positive effects of increasing activities or scheduling rest between activities 31 to the current study participants. This emphasis will not only foster fatigue reduction, but will also prevent other postoperative complications of immobility like constipation, deep vein thrombosis and atelectasis.

Anxiety was experienced by only a handful of the post CABG patients interrogated for the current study. Although distracting oneself was the primary strategy employed by the current study participants, problem-focused coping has been cited in literature to strongly diminish anxiety among post CABG patients. This strategy directs patients to focus on strategies to resolve their physical problems, which reduces their perception of their emotional response. 32

**Associations between demographic variables and symptom management strategies utilized by post coronary artery bypass grafting patients**

In the current study, the symptom management strategies for poor appetite, sleep problems and fatigue were statistically tagged to certain demographic traits that were consistent with previous studies.19

Study participants who were females, elderly and those with chronic illness were prone to utilize strategies to overcome their poor appetite. In the Islamic culture, women’s health and competence is regarded most important by family members. 13 The significance placed on the health of women and the motivation from the family would have persuaded female patients to practice strategies to improve their appetite. Elderly patients tend to possess greater number of co-morbidities requiring them to take more medications, which inevitably would cause them more intensity of appetite problems, forcing them to intervene.14

The trio of participant characteristics more interested to overcome poor appetite conveys to health-care providers that dietary consultation in the early postoperative days will aid this population to make changes in their diet. Improvement in diet will accelerate energy levels and wound healing, which are vital for resumption to pre-morbid activity levels and improvement in quality of life.

Findings from the current study reflect that sleep problems were significantly intervened by female patients and those patients who did not seek any information about their proposed surgical experiences preoperatively. Authors of evidence-based literature postulate that women resume their role and household activities early within the recovery period and this increases their feelings of tiredness and decreases their day time sleep. 13 These factors enhance their sleep duration and quality. Sleep disturbances in post CABG patients without any previous knowledge on their symptom experiences could be largely attributed to their accelerated anxiety levels. This could have prompted the study participant to seek help to resolve this distressing symptom. Jalowiec, Grady and White-Williams 35 concluded that post CABG patients with increased anxiety levels had identified that seeking help as the most frequently utilized strategy to alleviate their concerns. Health-care providers are reminded to incorporate the need to resume activities of daily living within their energy levels, to improve their sleep quality and quantity. Furthermore, a need to teach proposed CABG patients about their forecasted experiences will alleviate their anxieties and prevent sleeping difficulties.

Fatigue, which was experienced by post CABG patients who participated in the current study, was statistically mediated by male patients and those who sort health information before surgery. Schulz, Zimmerman, Barnason and Nieveen 36 reported that men demonstrated higher mean scores for physical functioning by the sixth week after CABG compared with women. This justifies to the fact that men tend to involve themselves in fatigue-reducing strategies in the early postoperative period. Utriyaprasit, Moore and Chaiser37 reported that patients who had received
Implications for practice
This study aimed at exploring the symptom management strategies among post CABG patients in order to prevent re-admissions and also facilitated the improvement in quality of life post CABG surgery. The study findings provide benefits for the preoperative and postoperative CABG patients. By providing information on the symptoms expected after surgery and the possible ways to manage them, it psychologically strengthens patients that the CABG experience is within the realm of self-management and coping. During the postoperative period, the occurrence of symptoms prompts patients to seek help at the earliest or to recall and practice the strategies taught to them. In the home setting, the information provided guides them to initiate self-management strategies consistently. Health-care providers are prompted to equip themselves with these empirical facts and prepare evidence-based health education sessions to inculcate these facts to their patients. Researchers are called to explore best methods to disseminate these findings and are also urged to explore the effectiveness of these strategies in improving quality of life, recovery and resumption to pre-morbid physical and psychological standards taking into consideration demographic variables such as gender.

Study limitations
The authors wish to acknowledge that, although the study was conducted taking into consideration the principles that govern research, a few notable limitations were inevitable. Descriptive nature of this study impedes the ability to infer causal relationships between the study variables. Self-reported data could possess hidden biases related to recall. Convenience sampling and small sample size may not be truly representative of the Jordanian CABG patients.

CONCLUSION
The study has highlighted the symptoms experienced by post CABG patients and the strategies utilized to relieve them. With the advent of early discharge from the health-care settings, the evidences generated from this study direct health-care providers to strengthen the cognitive resources of their patients by providing them with information on effective strategies to reduce or relieve their post CABG patients. Furthermore, the demographic affiliation to utilize strategies for selected discomforts should be captured, and tailor-made information sachets are to be disseminated for effective prevention of postoperative complications.

REFERENCES


33 Naceni NG. Islamic women studies is important and necessary. Procedia-Social and Behavioral Sciences 2010; 9: 1238–1243.

34 Jin H, Tang C, Wei Q et al. Age-related differences in factors associated with the underuse of recommended medications in acute coronary syndrome patients at least one year after hospital discharge. BMC Cardiovascular Disorders 2014; 14: 127.

