

## Perceived needs of patients undergoing coronary artery bypass graft surgery during perioperative period

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**Introduction:** Perioperative care is nursing care provided by perioperative nurses to surgical patients during the perioperative period. Its role is important as patients especially those who had undergone coronary artery bypass graft (CABG) surgery encounter high levels of psychological and physical stress.

**Objective:** To determine the needs of CABG patients throughout the perioperative period and how well those needs were met.

**Methods:** This is a cross sectional descriptive survey. A total of 88 patients who had undergone coronary artery bypass graft were recruited through census sampling. The instrument which was adapted and used with permission for this study was "Survey of Patient Needs and Experiences during the Perioperative Period" questionnaire (Davis *et al.*, 2014).

**Results:** The patients perceived the perioperative needs in the post-anaesthesia care unit area to be the most important ( $M = 2.89$ ,  $SD = 0.06$ ). Perioperative needs which were rated the highest for each of the four time periods were "Having information about the surgical procedure itself", "Having your family member or significant other with you in the pre-surgical area complications", "Being treated with respect and with dignity by hospital personnel" and "Having your family member or significant other visit you in the recovery room". Overall, patients perceived their needs during perioperative period to be partly met ( $M = 2.73$ ,  $SD = 0.07$ ) with post-anaesthesia care unit area being rated the highest ( $M = 2.81$ ,  $SD = 0.06$ ).

**Conclusion:** The results of this study highlighted the perceived needs of patients undergoing coronary artery bypass graft surgery throughout their perioperative period. In order to improve the quality of perioperative care for patients, nurses need to take into consideration the important needs identified by the patients and address the items which were not meeting the needs of the patients.

**Keywords:** Coronary artery bypass graft, Intra-operative care, Operating theatre, Perioperative care, Pre-operative care, Post-anaesthesia care.

### Introduction

'Perioperative' refers to the total surgical experience and it comprises three phases of surgical experiences: pre-operative, intra operative and post-operative phases of the surgical journey (Phillips, 2009). The number of surgeries being conducted continues to rise globally, with 83% in Canada and North America, 75% in Australia, and 62% in England (Mattila & Hynynen, 2009). In Malaysia, the percentages of increment in the total number of elective surgeries and surgical patients from 2006-2008 were 6.2% and 6.97% (MOH, 2008). Surgery is a stressful experience for patients during the perioperative period especially for open heart surgery. They also experience different levels of anxiety (Shafipour *et al.*, 2013). Studies have shown that 32% of open heart surgery patients developed pre-operative anxiety and 19% of patients developed depression (Navarro-Garcia, 2011). Furthermore, anxiety can result in an increased level of post-operative pain, increased analgesic consumption, depression, nausea, fatigue, delayed healing and a much longer hospital stay (Pritchard, 2009; Sukantarath *et al.*, 2009; Mitchell, 2011). Hence, perioperative care is an important part of modern health care today.

Nurses have a responsibility to advocate for optimal comfort of the patient and to intervene based on the situation and setting (Czarnecki *et al.*, 2011). Previous studies had highlighted that a lack of communication or inadequate provision of information can result in dissatisfaction with the perioperative care. Jakobsson *et al.* (2008) emphasised the importance of adequate information to surgical patients in reducing anxiety, increasing patient contentment and decreasing post-operative complications. Furthermore, past studies had found that appropriate and effective nurse to patient communication is one of the most important aspects of

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surgical patients during perioperative period (Shafipour *et al.*, 2014; Razera *et al.*, 2010; Caljouw *et al.*, 2008). Successful surgery for the patient means not only recovering but regaining physical, mental, and spiritual health as a whole. According to Seliman & Andsoy, (2011), the perioperative nurse can help surgical patients experience fewer problems (e.g., surgical trauma, pain, anaesthetic complications), reach discharge more quickly, attain satisfaction with health care, and more easily resume normal activities through holistic nursing care. Holistic nursing may include the use of music, guided imagery, therapeutic massage, play therapy, touch therapy, and communication skills. Jhala *et al.* (2010) found that provision of preoperative information can alleviate patients' anxiety. According to Hanna *et al.* (2012), patient satisfaction was more strongly correlated with the perception that caregivers did everything they could to control pain than with pain actually being well controlled. The odds of a patient being satisfied were 4.86 times greater if pain was controlled and 9.92 times greater if the staff performance was appropriate. In India, coronary artery bypass graft (CABG) is a common and stressful procedure and every year 25,000 coronary artery bypass operations are being carried out. Vijayabanu *et al.* (2014) reported that 99% of CABG patients in Chennai, India experienced severe stress level prior to surgery.

A study done by Eng *et al.* (2006) in Malaysia found that the quality of post cardiac surgery care especially in the aspect of technical competence, information giving, assurance and empathy can determine the post cardiac patients' satisfaction level. In a cross sectional descriptive study conducted on eighty patients (age: 18-65 yr) who had undergone open abdominal surgery, 78.8% (n=63) stated that they experienced anxiety prior to surgery. Among these anxious respondents, 47.5% (n=38) experienced high state anxiety. Three of the top information that patients perceived as important to allay anxiety towards major surgery were: details of surgery, details of nursing care to surgery and information on anaesthesia (Ting *et al.*,

2013). Khatijah (2008) conducted a study to assess the importance of pre-operative visits carried out by perioperative nurse through patients' perception. The results indicated that majority of patients being admitted for scheduled surgeries in Sarawak General Hospital do receive pre-operative visits by the doctors and anaesthetists. However, only few were visited by the nursing staff who were trained to carry out perioperative care. It was recommended that efforts must be taken to educate the perioperative nurse of the importance of their role in perioperative care prior to surgery. This could enhance the professional image of perioperative nurse and thus improve patient confidence and quality of care provided.

At this private hospital, there is a critical pathway which is being used as a standard operating procedure (SOP) by nurses when providing perioperative nursing care to open heart surgery patients and it is being carried out through pre, intra and post-operative care period from pre-operative day, surgery day, and post-operative day one to post-operative day four. Although this SOP was carried out since 2007, till date no audit survey had been carried out to obtain patients feedback regarding the perioperative care which was provided by nurses to the CABG patients. The objective of this study was to determine the needs of CABG patients throughout the perioperative period and how well those needs were met. Hence, the research questions for this study are as follows:

- i. What were the needs of patients undergoing coronary artery bypass graft surgery throughout their perioperative period?
- ii. What is the extent to which these needs were met?

## Methods

### *Study design, setting and sample*

A cross sectional quantitative descriptive study design was used to establish the surgical patients' needs during the perioperative period. The target population

for this study was the CABG patients in a private hospital in Penang, Malaysia. The estimated number of CABG surgical inpatients in this hospital per month is 50 patients. Therefore, the estimated population size is 100 over a two months period. Based on Raosoft sample size calculator with a 5% margin error, 95% confidence level, the minimum sample size required is 80 subjects. An additional 10 % was added to the sample size for attrition thus making it a total of 88. A census sampling method was used to obtain the samples for the study.

The inclusion criteria were post CABG patients who had the surgery done in this hospital, age 18 years and above, mentally alert and competent, with no post-operative complications, level of pain score of less than 5 out of 10 and hospitalised for at least four days post-operatively in the ward. The exclusion criteria were non-CABG patients, post- CABG patients who are below 18 years; unable to neither read nor understand English or Malay language, had post-operative complications and pain score of more than 5 out of 10.

Perioperative period was conceptualised as the total surgical experience and it comprises three phases of surgical experiences: pre-operative, intra-operative and post-operative phases. Needs during perioperative period was operationalised across four time periods namely before coming to the hospital for surgery, day of surgery in preoperative surgical care area, day of surgery in operative room area and post-anaesthesia care unit area. Patients' needs and satisfaction were measured based on the information provided, discomfort and needs, fear and concern, staff-patient relationship and staff professional competence

### **Measurement and instrument**

The instrument used for this study is 'Survey of Patient Needs and Experiences during the Perioperative Period' which consists of 26 items with a four-point Likert scale ranging from 0 to 3 (Davis *et al.*, 2014). The instrument consists of two sections, section A: Demographic data and section B: 'Survey of Patient Needs and

Experiences during the Perioperative Period'. Section A consists of the patient's age, ethnicity, education level, marital status and employment status. Section B consists of 26 items comprising of four time periods which are 'Before coming to the hospital' (4 items), 'Day of surgery in preoperative surgical care area' (8 items), 'Day of surgery in operative room area' (6 items), and 'Post-anaesthesia care unit area' (8 items). Participants were required to indicate the degree of importance of the needs using a scale of 0 = not important at all, 1= not important, 2= important, 3=very important. As for the experience on how well their needs were met during perioperative period, participants were required to indicate their responses using a scale of 0= do not remember, 1= not met, 2= partly met, 3=met.

### **Validity and reliability testing**

The reliability of the instrument for this study was tested by a pilot study conducted on eight post CABG patients in the same hospital to rule out any ambiguity in the questionnaires. These patients were not included in the actual study. The content validity was ascertained by the expert panel comprising a nurse manager from the surgical unit and a staff nurse from the operating theatre department. Reliability of the items in the instrument was determined by Cronbach's Alpha Reliability Coefficient value which yielded the value of 0.947 for items on patient needs and 0.971 for items on satisfaction.

### **Ethical consideration**

Ethical approval was obtained from the International Medical University Joint-Committee for Research and Ethics and Clinical Research Centre of the hospital. Reassurance of confidentiality and informed consent were obtained from the participants prior to commencement of the study. Permission was obtained from the original author to use the instrument for this study. Data were collected from February to March 2016. Consent from, study information sheet and the questionnaire were distributed to all respondents who agreed to participate

in this study. The respondents were instructed to return their completed questionnaire to the nurse managers in a sealed envelope. All completed questionnaires were kept confidential and anonymous.

### Data analysis

Data collected were analysed Statistical Package for the Social Sciences (SPSS) software version 20 in mean scores, frequencies and percentages.

## Results

### Demographic characteristics

Majority of the participants were between 60-69 years of age (n = 36, 40.9%), male (n= 76, 86%) and Chinese (n = 53, 60.2%). A total of 36 participants (40.9%) attained secondary education, 86 were married (97.7%) and 54 employed (61.4%).

### What were the Perioperative Needs of the Coronary Artery Bypass Graft Patients?

Patients perceived having information about the surgical procedure itself e.g. including how the surgery is done, complications and expected hospitalisation time, as the most important needs before coming to the hospital for surgery (M = 2.85, SD = 0.36). This is followed by having information on how his/her pain will be managed during and after surgery. However, having information about what to do on the day of surgery e.g. time to arrive, where to park, where to go in the hospital, what to bring was considered to be the least important (M = 2.67, SD = 0.50). Overall mean score for perioperative needs before coming to the hospital was 2.75 (SD = 0.09) (Table II).

**Table I:** Demographic data of the participants (n = 88)

Demographic Data	Frequency	Percentage (%)
<b>Age in years</b>		
40 – 49	13	14.8
50 – 59	26	29.6
60 – 69	36	40.9
70 – 79	12	13.6
80 – 89	1	1.1
Age Mean $\pm$ SD = 60.08 $\pm$ 9.22		
<b>Gender</b>		
Male	76	86
Female	12	13.6
<b>Ethnicity</b>		
Malay	5	5.7
Chinese	53	60.2
Indian	1	1.1
Others	29	33

Demographic Data	Frequency	Percentage (%)
<b>Education level</b>		
None	1	1.1
Primary	19	21.6
Secondary	36	40.9
Tertiary	32	36.4
<b>Marital status</b>		
Single	1	1.1
Married	86	97.7
Divorced	0	0
Widowed	1	1.1
<b>Occupation</b>		
Employed	54	61.4
Unemployed	0	0
Students	0	0
Retired	34	38.6

On the day of surgery in pre-operative surgical care area, the three main needs highlighted were the need to have family member or significant other in the pre-surgical area ( $M = 2.91$ ,  $SD = 0.29$ ), to have opportunities to ask question and address concerns with hospital staff ( $M = 2.83$ ,  $SD = 0.41$ ) and to have hospital staff to

reassure the patient about any fears/anxieties related to his/her surgical experience ( $M = 2.82$ ,  $SD = 0.42$ ). Overall mean score for perioperative needs on day of surgery in pre-operative surgical care area was 2.81 ( $SD = 0.06$ ). (Refer Table II)

**Table II:** Patients' perioperative needs according to time period and importance

Time period		Importance
		$M \pm SD$
<b>I. Before coming to the hospital</b>		
B1	Having information about the surgical procedure itself e.g. how the surgery is done, complications, expected hospitalization time.	$2.85 \pm 0.36$
B3	Having information on how your pain will be managed during and after the surgery.	$2.80 \pm 0.41$
B4	Having someone answer your questions before you come to the hospital.	$2.68 \pm 0.55$
B2	Having information about what to do on the day of surgery (e.g. time to arrive, where to park, where to go in the hospital, what to bring).	$2.67 \pm 0.50$
<b>Overall</b>		<b><math>2.75 \pm 0.09</math></b>

Time period		Importance
		M±SD
<b>II. Day of surgery in pre-operative surgical care area</b>		
B12	Having your family member or significant other with you in the pre-surgical area.	2.91 ± 0.29
B11	Having opportunities to ask questions and address concerns with hospital staff.	2.83 ± 0.41
B10	Having hospital staff reassure you about any fears/ anxieties you might have related to your surgical experience.	2.82 ± 0.42
B7	Being treated with respect and with dignity by hospital personnel (e.g. personnel protected your privacy and modesty, addressed you in a courteous manner, took time to understand and answer your questions).	2.77 ± 0.45
B9	Being informed about delays in the operating room schedule.	2.77 ± 0.42
B5	Having information about the procedures for getting you ready for surgery (e.g. admission assessment, starting an IV infusion, getting medications before surgery, movement by cart to the operating room).	2.76 ± 0.50
B6	Being physically comfortable (bed, room temperature, noise and activity level in the room, management of your pain or other symptoms).	2.73 ± 0.47
B8	Having important information about you communicated to hospital personnel before your admission.	2.72 ± 0.48
<b>Overall</b>		<b>2.81 ± 0.06</b>

Score range according to importance were from 0 (not important at all) to 3 (very important)

Results of the study found that on the day of surgery in operative room area, patients perceived being treated with respect and with dignity by hospital personnel (M = 2.92, SD = 0.27) and being reassured by hospital staff about any fears/anxieties related to his/her surgical experience (M = 2.90, SD = 0.34) as the two most important needs. However, 'being physically comfortable (on bed, room temperature, noise and activity level around you)' was considered to be the least important (M = 2.76, SD = 0.43). Overall mean score for perioperative needs on day of surgery in operative room area was 2.84 (SD = 0.06) (Table III).

The highest mean score for perioperative needs at the post-anaesthesia care unit area was for item 'having your family member or significant other visit you in the recovery room' with a mean score of 3.00 (SD = 0.18). This implied that this is the most important need during this period. The lowest mean score was for item 'having opportunities to ask questions and address concerns with hospital staff' with a mean score of 2.82 (SD = 0.39). This means that this is the least important need during this period. Overall mean score for perioperative needs at the post-anaesthesia care unit area was 2.89 (SD = 0.06) (Table III).

**Table III:** Patients' perceived perioperative needs according to time period and importance

Time period		Importance
		M±SD
<b>III. Day of surgery in operative room area</b>		
B15	Being treated with respect and with dignity by hospital personnel (e.g. personnel protected your privacy and modesty, addressed you in a courteous manner, took time to understand and answer your questions).	2.92 ± 0.27
B17	Having hospital staff reassure you about any fears/ anxieties you might have related to your surgical experience.	2.90 ± 0.34
B18	Having opportunities to ask questions and address concerns with hospital staff	2.82 ± 0.39
B13	Having information about the role of operating room staff (nurse, technician, anaesthesiologist).	2.81 ± 0.40
B16	Having important information about you communicated to hospital personnel before your arrival in the operating room.	2.81 ± 0.40
B14	Being physically comfortable (on bed, room temperature, noise and activity level around you).	2.76 ± 0.43
<b>Overall</b>		<b>2.84 ± 0.06</b>
<b>IV. Post-anaesthesia care unit area</b>		
B26	Having your family member or significant other visit you in the recovery room.	3.00 ± 0.18
B24	Reassurance from hospital staff about fears/ anxieties related to the surgical experience.	2.92 ± 0.27
B21	Having your pain, nausea, and/ vomiting adequately managed by the recovery room staff.	2.91 ± 0.29
B22	Being treated with respect and with dignity by hospital personnel e.g. personnel protected your privacy and modesty, addressed you in a courteous manner, took time to understand and answer your questions).	2.89 ± 0.32
B19	Having information about your condition.	2.88 ± 0.42
B23	Having important information about you communicated to hospital personnel before your arrival in the recovery room.	2.85 ± 0.39
B20	Being physically comfortable (on bed, room temperature, noise and activity level in the room).	2.85 ± 0.36
B25	Having opportunities to ask questions and address concerns with hospital staff.	2.82 ± 0.39
<b>Overall</b>		<b>2.89 ± 0.06</b>

Score range according to importance were from 0 (not important at all) to 3 (very important)

#### **What is the extent to which these needs were met?**

Patients rated 'Having information about the surgical procedure itself (e.g. how the surgery is done, complications, and expected hospitalization time)' the highest (75%) in meeting their needs while 'having

someone answer your questions before you come to the hospital' was rated the lowest (56.8%). Overall mean scores for how well patient needs were met before coming to the hospital was 2.64 (SD = 0.12) (Table IV).



**Table IV:** Patients' perception on the extent that their needs were met according to time period

Time period		Needs met
		M±SD
<b>I. Before coming to the hospital</b>		
B1	Having information about the surgical procedure itself e.g. how the surgery is done, complications, expected hospitalization time.	2.75 ± 0.44
B3	Having information on how your pain will be managed during and after the surgery.	2.74 ± 0.44
B2	Having information about what to do on the day of surgery (e.g. time to arrive, where to park, where to go in the hospital, what to bring).	2.56 ± 0.58
B4	Having someone answer your questions before you come to the hospital.	2.52 ± 0.61
<b>Overall</b>		<b>2.64 ± 0.12</b>
<b>II. Day of surgery in pre-operative surgical care area</b>		
B12	Having your family member or significant other with you in the pre-surgical area	2.83 ± 0.38
B10	Having hospital staff reassure you about any fears/ anxieties you might have related to your surgical experience.	2.76 ± 0.45
B9	Being informed about delays in the operating room schedule.	2.76 ± 0.43
B11	Having opportunities to ask questions and address concerns with hospital staff.	2.76 ± 0.43
B5	Having information about the procedures for getting you ready for surgery (e.g. admission assessment, starting an IV infusion, getting medications before surgery, movement by cart to the operating room).	2.65 ± 0.53
B7	Being treated with respect and with dignity by hospital personnel (e.g. personnel protected your privacy and modesty, addressed you in a courteous manner, took time to understand and answer your questions).	2.64 ± 0.57
B8	Having important information about you communicated to hospital personnel before your admission.	2.64 ± 0.48
B6	Being physically comfortable (bed, room temperature, noise and activity level in the room, management of your pain or other symptoms).	2.63 ± 0.61
<b>Overall</b>		<b>2.70 ± 0.07</b>

Score range according to extent that needs were met were from 0 (do not remember) to 3 (met)



On the day of surgery in pre-operative surgical care area, patients rated “had their family member or significant other with them in the pre-surgical area” as the highest (83%). However, patients do not perceive “personal information was communicated to hospital personnel before his/her admission” as important as this was rated the lowest (63.6%). Overall mean score for how well patient needs were met on day of surgery in pre-operative surgical care area was 2.70 (SD = 0.07).

On the day of surgery in the operating room, patients gave a highest rating for the manner in which they were treated with respect and dignity by hospital personnel e.g. personnel ensured patients’ privacy and modesty, addressed patient courteously and took time to understand and answer questions (M = 2.81, SD = 0.48). They were also well informed about the role of operating room staff e.g. nurse, technician, anaesthesiologist (M = 2.81, SD = 0.48). Hospital staff provided reassurance to

the patients to allay any fear/ anxieties related to their surgical experiences (M = 2.80, SD = 0.51). However, on day of surgery in operative room, patients rated “that their needs related to being physical comfort such as on bed, room temperature, noise and activity level around the patient were met” as the lowest (M = 2.64, SD = 0.51). Overall, patient needs on day of surgery in the operating room area were partly met (M = 2.76, SD = 0.07).

Patients gave the highest score to the item on having family member or significant other visit them in the recovery room (M = 2.93, SD = 0.37). However, their physical comfort needs at the post-anaesthesia care unit area were rated the lowest (M = 2.73, SD = 0.62). Overall mean score for how well patient needs were met at post-anaesthesia care unit area was 2.81 (SD = 0.06) (Table V).

**Table V:** Patients’ perception on the extent that their needs were met according to time period

Time period		Needs met
		M±SD
<b>III. Day of surgery in operative room area</b>		
B15	Being treated with respect and with dignity by hospital personnel (e.g. personnel protected your privacy and modesty, addressed you in a courteous manner, took time to understand and answer your questions).	2.81 ± 0.48
B13	Having information about the role of operating room staff (nurse, technician, anaesthesiologist).	2.81 ± 0.48
B17	Having hospital staff reassure you about any fears/ anxieties you might have related to your surgical experience.	2.80 ± 0.51
B18	Having opportunities to ask questions and address concerns with hospital staff	2.76 ± 0.50
B16	Having important information about you communicated to hospital personnel before your arrival in the operating room.	2.74 ± 0.51
B14	Being physically comfortable (on bed, room temperature, noise and activity level around you).	2.64 ± 0.55
<b>Overall</b>		<b>2.76 ± 0.07</b>
<b>IV. Post-anaesthesia care unit area</b>		
B26	Having your family member or significant other visit you in the recovery room.	2.93 ± 0.37
B21	Having your pain, nausea, and/ vomiting adequately managed by the recovery room staff.	2.85 ± 0.44
B22	Being treated with respect and with dignity by hospital personnel (e.g. personnel protected your privacy and modesty, addressed you in a courteous manner, took time to understand and answer your questions).	2.82 ± 0.49

Time period		Needs met
		M±SD
B24	Reassurance from hospital staff about fears / anxieties related to the surgical experience.	2.81 ± 0.48
B19	Having information about your condition.	2.80 ± 0.55
B23	Having important information about you communicated to hospital personnel before your arrival in the recovery room.	2.78 ± 0.60
B25	Having opportunities to ask questions and address concerns with hospital staff.	2.74 ± 0.51
B20	Being physically comfortable (on bed, room temperature, noise and activity level in the room).	2.73 ± 0.62
<b>Overall</b>		<b>2.81 ± 0.06</b>

Score range according to extent that needs were met were from 0 (do not remember) to 3 (met)

As shown in Table VI, overall, the total mean score on importance of perioperative needs was 2.82 (SD = 0.06) with a total mean score of 2.73 (SD = 0.07) for

how well patients' needs were met which indicated that it was partially met.

**Table VI:** Comparison of mean scores for perioperative needs throughout perioperative period according to importance and the extent that the needs were met

Time period	Importance	Needs met
Before coming to the hospital	2.75 ± 0.09	2.64 ± 0.12
Day of surgery in pre-operative surgical care area	2.81 ± 0.06	2.70 ± 0.07
Day of surgery in operative room area	2.84 ± 0.06	2.76 ± 0.07
Post-anaesthesia care unit area	2.89 ± 0.06	2.81 ± 0.06
<b>Total perioperative needs</b>	<b>2.82 ± 0.06</b>	<b>2.73 ± 0.07</b>

Score range according to importance were from 0 (not important at all) to 3 (very important)

Score range according to extent that needs were met were from 0 (do not remember) to 3 (met)

## Discussion

In this current study, the most important item for perioperative needs before coming to the hospital was 'having information about the surgical procedure itself (e.g. how surgery is done, complications, expected hospitalization time)'. This result is supported by Chetty *et al.* (2009), who reported that pre-operative information is useful in the preparation for surgery, where it can effectively allay anxiety and to be better prepared psychologically for the surgery (Kelly *et al.*,

2013; Vijayabanu *et al.*, 2014; Prouty *et al.*, 2006). Subsequently, the most important item for perioperative needs on the day of surgery in pre-operative surgical care area was 'having your family member or significant other with you in the pre-surgical area'. This was supported by Davis *et al.* (2014) where both patients and family members rated highly the need to be present for each other during perioperative periods. The present study also found that for the perioperative needs, item 'being treated with respect and with dignity by hospital

personnel (e.g. personnel protected your privacy and modesty, addressed you in a courteous manner, took time to understand and answer your questions)' was rated as the most important need on the day of surgery in the operative room area. This showed that patients need highly competent and professional nurses to provide them the reassurance and comfort prior surgery. Other researchers have also reported similar findings where staff-patient relationship, level of professional competence and communications skills were perceived to be of importance to patients during perioperative periods (El- Nasser *et al.*, 2013; Jiaia *et al.*, 2010; Caljouw *et al.*, 2008). The current study also highlighted the most important perioperative need at post-anaesthesia care unit area to be 'having your family member or significant other visit you in the recovery room'. Similar findings were reported in a few studies where post-operative patients indicated the importance of addressing the need for mental support and encouragement from family member (Merkouris *et al.*, 2009; Shafipour *et al.*, 2013).

Based on the results of the findings, coronary artery bypass graft patients' needs were partly met with an overall total mean score of 2.73 (SD = 0.07) throughout the perioperative period. Interestingly, the study found that the patients' perioperative needs were partly met for all the four perioperative periods. Patients rated the lowest mean scores in meeting the patients' needs before coming to the hospital period (M = 2.64, SD = 0.12) followed by 2.70 (SD = 0.07) for day of surgery in pre-surgical care area period, 2.76 (SD = 0.07) for day of surgery in operative room area period, it was found 2.81 (SD = 0.06) for post-anaesthesia care unit area period. The item rated the lowest in meeting the patients' needs before coming to the hospital was for 'having someone answer your questions before you come to the hospital' (56.8%), 'having important information about you communicated to hospital personnel before your admission' for day of surgery in pre-operative surgical area (63.6%), 'being physically comfortable (on bed, room temperature, noise and activity level

around you)' (65.9%) on day of surgery in operative room area while 'having opportunities to ask questions and address concerns with hospital staff' (76.1%) for post-anaesthesia care unit area. These findings were consistent with prior studies in which the lowest score is for information provision and patients reported that they do not receive adequate pre-operative information based on their needs (Jiaia *et al.*, 2010; Mordiffi *et al.*, 2003). Similarly, Ting *et al.* (2013) noted 10.3% of patients reported that nurses did not provide enough information to them to meet their needs pre-operatively. Razera *et al.* (2011) found 56.25% of patients stated that nurses lack communication skills and concern for them postoperatively. However, the finding of the study was not consistent with the findings by Davis *et al.* (2014). The findings of this study found that patients' needs were partly met during the perioperative periods with a total mean score of 2.93. Findings by Leinonen *et al.* (2003) and Ascri *et al.* (2013) reported that the information given by nurses was considered sufficient to patients pre-operatively. Kelly *et al.* (2013) reported that 75.1% of patients noted that nurses were concerned with their patients' needs prior to surgery.

### **Limitations**

This study had several limitations. The study was conducted at only one hospital in Malaysia and the participants are mainly from one ethnic group. Therefore, it limits the generalisation of the findings.

### **Conclusion**

The results from this study highlighted the importance of perioperative nurses to be attentive to coronary artery bypass graft patients' needs not only in the aspect of improving their nursing competencies especially communication skills but their demonstration of concern for their patients' psychological needs. It is recommended that the standards operating procedure (CABG clinical pathway) be reviewed in order to improve the quality of perioperative nursing care for coronary artery bypass graft patients.

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