

Post-CABG Patients' Views of Education Needs in Jordan: Implications for Discharge Education Program

Mohannad J. Alkuwaisi, Zainab M. Shafie

Faculty of Medicine, Nursing Department, UNISZA, Terengganu, Malaysia

Corresponding Author Email: zainab69@unisza.edu.my

To Link this Article: <http://dx.doi.org/10.6007/IJARPED/v11-i3/15030>

DOI:10.6007/IJARPED/v11-i3/15030

Published Online: 19 September 2022

Abstract

Aims. To investigate, before to hospital discharge, the educational needs of Jordanian patients who have had coronary artery bypass graft surgery. **Design:** A quantitative, correlational design. **Methods:** Before leaving the Jordanian Hospital, 120 CABG patients had their data gathered using a modified version of the Cardiac Patients Learning Needs Inventory (CPLNI) instrument. **Results:** Prior to discharge, CABG patients were found to appreciate information on chest and leg wound care, medication information, other important information, and complications the most. **Conclusion.** According to this study, CABG patients have significant information needs in the 24-48 hours before being released from the hospital. Additionally, this study's findings revealed that the education needs of patients varied statistically significantly depending on their demographic factors.

Keywords: Jordanian Patients, CABG Surgery, Perceived Education Needs, Learning Needs

Introduction

One of the major challenges facing patients who undergo Coronary artery bypass graft (CABG) surgery is the decreased Length of Stay (LOS), which has decreased over time from 1 week to 4.3 days in 2016 (Rushton et al., 2017). Nurses and other healthcare professionals have also considered this shortened LOS to be challenging because it decreased the time allotted for patient education (Lefevre et al., 2019). Consequently, patients have reported higher levels of stress at the time of discharge because they felt they were overloaded with too much information that they cannot comprehend during a very short period of time (Parizad et al., 2015). Consequently, health care professionals tend to either condense their education process to finish on time or skip part of the information that they may feel is not a priority or unnecessary (Cate et al., 2011). An effective education process requires that healthcare professionals must first evaluate the patient's Education needs and preferred Education modes before the teaching can begin. Healthcare professionals usually choose what information will be provided during patient education, and they determine the organization and the importance of the material from their point of view (Subeh et al., 2014). This may affect the effectiveness of education and, ultimately, patient satisfaction negatively,

since each patient has a different Education needs and different Education style (Mangold et al., 2018).

The information provided during the teaching process should be accurate, pertinent and at the patient's own level of education. Customized education that is tailored to meet patients' Education needs has several advantages over standardized education including: facilitating patient's understanding and retaining of information, better physical and psychological outcomes, lower complications, faster recovery, higher compliance with treatment, lower readmission rates, and higher patient satisfaction and quality of life (Alkubati et al., 2012).

Jordan is the Middle Eastern nation; Jordan's healthcare system and comprises of three sectors, namely private, military and public. Healthcare professionals have provided a standardized education program for CABG patients, such as a convalescent period at home after open-heart surgery in KSSH and PSCCQ; this educational program is performed in cardiothoracic wards 48 hours after surgery, without taking into account the Education needs of patients. Studies indicate that standardized education can provide beneficial outcomes for post-CABG patients, but the problem with this kind of education is that it does not reflect the person's exact Education needs (Fredericks & Yau, 2017). On the other hand, there are certain methods that can help in the education process, such as the development of individualized intervention, which focuses on identifying the patients' Education needs and give them the information they need. Therefore, this study examined the patients' view of education needs following CABG surgery prior to hospital discharge in Jordan in sequence to help healthcare professionals in the design of an educational program to aid these patients recover at home.

Method

Research Design

This study was used a quantitative descriptive, correlational design.

Study Setting

The study was conducted at the King Abdullah University Hospital (KAUH) and University Hospital (UH) in Jordan.

Sample Description

The study sample was comprised of adult patients (18 years of age or older) who had undergone CABG surgery at a CCU in the chosen specialist hospital in Jordan. A convenience sampling method was used to achieve the necessary sample size.

Sample Size

In order to conduct a power analysis for the current study, the G*power software was used to calculate the sample size. Assuming 0.95 power with an alpha error of 0.05 and a medium effect size of (0.5 and 0.25), the total sample size will require 120 subjects to have confidence in the findings. G*Power is a statistical power analysis program designed with graphics options to analyze different power types and calculate sample size. It covers many different F, t, chi-squared, and z test families and some precise tests (Faul et al., 2007).

Research Instruments

The survey package included one instrument and a demographic sheet. The demographic sheet was created by the researcher and driven by the literature reviewed for this study

included age, gender, employment status, education and whether the patient has chronic conditions or not. For the purpose of this study the Arabic edition of the MCPLNI by Alkubati et al (2012) will be used, consisting of 44 items. The permission was gained from Alkubati et al (2012) to use the Arabic edition of the MCPLNI.

The original CPLNI created by Gerard and Peterson (1984) includes 43 items scored on a Likert scale of five-point, based on the extent of importance from 1 (not important) to 5 (very important), with high scores indicating high Education needs. Items of the CPLNI were classified into eight groups comprising "Introduction to the CCU", "Anatomy and Physiology", "Diet Information" (6 items for each one), "Psychological Factors", "Physical Activity" (5 items for each one), "Risk Factors", "Medication Information" (4 items for each one) and "Other Pertinent Information" (7 items). According to Gerard and Peterson (1984), four PhD-prepared nurses and two cardiac nurse practitioners confirmed the instrument content validity. Internal consistency reliability was 0.91 for the total original CPLNI. The Cronbach's alpha ranged from 0.68 to 0.96 for the instrument subscales.

Alkubati et al (2012) revised the original CPLNI by removing and adding specific elements to the original CPLNI that would be relevant for use in post-CABG patients. In addition, Alkubati et al (2012), have added to the CPLNI two categories specific to post-CABG patients, focusing on "Complications" (3-items) and "Chest and Leg Wound Care" (3-items), so there were 10 categories with 44 items in the final MCPLNI. The three Ph.D.-prepared nurses and two cardiovascular clinical nurse specialists (CNSs) affirmed the content validity of the Arabic edition of the MCPLNI. In Alkubati et al (2012) study, the internal consistency reliability of the total MCPLNI was 0.95, and the internal consistency reliability for each subscale ranged from 0.73 to 0.98. In addition, the internal consistency reliability of the total MCPLNI was 0.91 in the Omari et al (2013) study and the internal consistency reliability ranged from 0.54 to 0.8 for each subscale.

Data Collection Procedure

The researcher identified patients who met the inclusion criteria for this study and who were scheduled to be discharged within the next two days by reviewing patient records, which was facilitated by the physician in each cardiovascular unit. The researcher then contacted patients who met the inclusion criteria to illustrate the purpose of the study and ask them to participate in it. Participants were informed that their participation was optional and that they were able to withdraw from the study at any time without punishment. In addition, they were guaranteed that their responses would remain anonymous. The consent form was then provided to patients who had agreed to participate in the study. A copy of the questionnaire was provided to the literate participants, along with the patient demographic data form and the MCPLNI, and they were asked to complete the questionnaire, which lasted about 20 minutes, and then return it to the researcher along with a copy of the informed consent form prior to their discharge.

Ethical Consideration

The Institutional Review Board (IRB) of the participating hospital approved this study. Before participating in this study, participants first read and signed the consent form, as the consent form is intended to safeguard the participants' interests. A consent form was used to notify the participants that their information would be kept confidential and secure and that they were free to leave the study at any time without consequences. Patients were informed that they may not benefit directly from their participation in the study, but that the findings of the

study may be used to develop individualized education interventions for CABG patients. The risks associated with participating in this study are considered minimal. Inconvenience to study participants will include the time and energy spent during data collection.

Data Analysis

The Windows Statistical Package for Social Science (SPSS) (SPSS®-PC version 28) was used to analyze data. For all statistical analysis, the significant level is set at 0.05. The author used descriptive statistics to describe the sample characteristics and their demographic features and Education needs after CABG surgery. The inferential analysis, independent sample t-test, one-way ANOVA, and Pearson's correlation were all used by the author. The Independent sample t-test (unpaired samples t-test) will also be used to examine the difference in mean MCPLNI scores between male and female patients and between work and non-work patients prior to discharge from the hospital. A one-way ANOVA test was used to examine differences in the mean MCPLNI scores based on age, chronic disease, and level of education. Pearson's correlation analysis was used to examine the relationship between the Education needs of patients and their ages (in years).

Results

Demographic Characteristics of the Patients

The majority of the subjects were middle-aged males (75%), with a mean age of 50.26 years and a standard deviation of 11.85. Nearly half of participants (50.8%) were unemployed and the majority (63.3%) lacked any formal education (Table 1).

Table 1

Socio-demographic characteristics of the patients (n = 120)

Variable	Frequency	%
Gender		
Male	90	75.0
Female	30	25.0
Age		
Younger	22	18.3
Middle age	64	53.3
Older	34	28.3
Level of education		
School education	107	89.2
Highly educated	13	10.8
Working		
Employed	59	49.2
Unemployed	61	50.8

Description of the Education needs of CABG Patients

All participants gave the necessity for all kinds of knowledge excellent marks. According to Table 2, the average number of Education needs as reported by the patients was 4.26. (SD 0.55). Patients rated the following categories in order of importance: complications (mean =

4.53, SD 0.72), other pertinent information (mean = 4.56, SD 0.60), medication information, and chest and leg wound care (mean = 4.73, SD 0.50).

Table 2

Description of CABG patients' educational needs (n = 120)

Category	Mean*	SD
Chest and leg wound care	4.73	0.50
Medication information	4.71	0.53
Other pertinent information	4.56	0.60
Complications	4.53	0.72
Introduction to the CU	4.40	0.55
Risk factors	4.32	0.80
Anatomy and physiology	4.28	0.67
Diet information	4.20	0.75
Psychological factors	3.79	0.98
Physical activity	3.30	1.76
Total	4.26	0.55

Relationship between Demographic Variables and Learning Needs

The findings revealed statistically significant differences in men's and women's perceptions of overall education needs ($p = 0.004$), with males reporting a larger number of education needs (mean = 4.34, SD 0.51) than women (mean = 4.01, SD 0.61). There was a statistically significant connection between total education needs and age in years ($r = 0.189$, $p = 0.03$). The findings demonstrated a statistically significant difference ($p = 0.008$) between total learning needs and patient age groups, with younger and middle-aged patients requiring more knowledge than older patients ($p = 0.021$, 0.032 , respectively). Furthermore, there was a statistically significant difference between total education needs and education level ($p = 0.000$), with highly educated ($p = 0.000$) and school-level ($p = 0.002$) patients requiring more knowledge than the uneducated group. There was also a statistically significant difference in education needs based on patients' employment conditions ($p = 0.000$), with patients who were working requiring more knowledge than patients who were not working.

Discussion

Comprehension of patients' View of education needs is a key aspect of any educational program (Friesen-Storms et al., 2015). Improper health education or inability to meet the Education needs of patients prior to hospital discharge may have many adverse consequences (Kubota et al., 2013). The study illustrated the most important education needs of patients undergoing CABG surgery in Jordan; consequently, the results of this study may serve as a heart for the development of an appropriate program of cardiac education.

The study showed that patients with CABG surgery have high education needs prior to discharge from the hospital in Jordan. They may consider their education needs to be important and very important. As stated by Lazarus and Folkman (1984), an individual who has revealed a new condition needs information in order to deal efficiently with this condition. CABG surgery is considered as a new condition for Jordanian patients, so they may need more information to face the challenges that may occur after the discharge. CABG surgery is seen as a new condition for Jordanian patients, thus they may want further

information to resolve the problems that may arise after hospital discharge. The results of the study were consistent with existing literature on the education needs of patients who had experienced CABG surgery prior to hospital discharge (Mosleh et al., 2016a; Mosleh et al., 2016b; Omari et al., 2013; Almaskari et al., 2019; Alkubati et al., 2013; Gokcen and Cigdem, 2018; Subeh et al., 2014).

Healthcare professionals need to teach patients competently about the disease state. It is important to be aware of the education needs of patients so that information is directed to these areas. Nursing, as a member of the healthcare team working in hospital, may be able to build educational programs starting with an appropriate assessment of CABG surgery patients to verify that they satisfy their education needs. The absence of the role of nurses in critical settings in Jordan would have a negative effect on the identification of education needs of patients prior to hospital discharge, which would lead to poor outcomes.

A comparison of total CPLNI ratings by gender indicated substantial disparities in the perceived overall relevance of education information requirements. Men said that they needed more schooling than women. This supports the findings of Fredericks (2014), who discovered that men require more information than women, but contradicts the findings of other studies (Omari et al., 2013; Subeh et al., 2014) that discovered that women require more information than men. Furthermore, this research contradicts another study, which showed no statistically significant differences between gender and educational needs (Henderson & Chien, 2004).

The results of this study indicated that there was a significant relationship between age groups and the total scores of the learning needs. Younger and middle-aged patients ranked more information needs than older patients. This result supports the result of recent study conducted by Fredericks (2009) who found that younger CABG patients needed more information than older ones, but is inconsistent with the results of other studies (Omari et al., 2013; Su et al., 2015) that reported that older patients need more information than younger patients. This result is also inconsistent with other studies that did not demonstrate any relationship between patients' age and their educational needs (Fredericks & Yau, 2017; Subeh et al., 2014).

The results of this study indicated that there was a significant difference in the total scores of learning needs according to the level of education. Highly educated and school-level patients ranked more learning needs than uneducated patients. This result is inconsistent with the results of previous studies that reported that patients with low level of education need more information than patients with high level of education (Kattainen et al., 2004).

Result of the current study indicated that there was a significant relationship between the total scores of the learning needs and working status of the patients. Patients who were working ranked more information than patients who were not working. This result is consistent with the result by Kattainen et al (2004) who found that, after CABG surgery, patients who work needed more information about psychological functioning than patients who do not work.

Implication for Nursing Practice

The fact that patients undergoing CABG surgery are seeking post-discharge information on self-care activities should notify future studies prior to hospital discharge in order to address these issues. In order to provide the most required information to patients' preferences, this study delivered important elements for future studies to lay down regulations to consider health education as a necessary part of preparing patients for discharge.

Conclusion

This study indicates a need to communicate with patients who are post-CABG and identify if their education needs are being met or if there is a need to design and provide a comprehensive health education program targeting all topics related to a cardiac patient's recovery. The results of this study were consistent with the results of earlier studies. The findings of this study revealed that the patients' education needs should be recognized and reflected upon when working with these patients and in the planning of educational programs.

Limitations of the Study

The use of convenience sampling, which leads to selection bias, limits the generalizability of the study's results. Another issue is the sample's diverse features. Because educational needs are considered subjective, one possible drawback is self-report bias. A structured interview was done to prevent participant bias and misinterpretation.

Acknowledgement

The researchers would like to thank all of the patients who helped with and supported data collecting.

References

- Alkubati, S., Al-Zaru, I., Khater, W., & Ammouri, A. (2012). Perceived learning needs of Yemeni patients after coronary artery bypass graft surgery. *Journal of clinical nursing*, 22(7-8), 930-938. <https://doi.org/https://doi.org/10.1111/j.1365-2702.2012.04177.x>
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior research methods*, 39(2), 175-191. <https://doi.org/https://doi.org/10.3758/BF03193146>
- Fredericks, S. (2009). The relationship between CABG patient characteristics and perceived learning needs: a secondary analysis. *Canadian Journal of Cardiovascular Nursing*, 19(1).
- Fredericks, S., & Yau, T. (2017). Clinical effectiveness of individual patient education in heart surgery patients: A systematic review and meta-analysis. *Int J Nurs Stud*, 65(6), 44-53. <https://doi.org/10.1016/j.ijnurstu.2016.11.001>
- Friesen-Storms, J., Moser, A., Van der Loo, S., Beurskens, A., & Bours, G. (2015). Systematic implementation of evidence-based practice in a clinical nursing setting: a participatory action research project. *Journal of clinical nursing*, 24(1-2), 57-68. <https://doi.org/https://doi.org/10.1111/jocn.12697>
- Gerard, P., & Peterson, L. (1984). Learning needs of cardiac patients. *Cardio-vascular nursing*, 20(2), 7.
- Henderson, A., & Chien, W. T. (2004). Information needs of Hong Kong Chinese patients undergoing surgery. *Journal of clinical nursing*, 13(8), 960-966.
- Kattainen, E., Merilainen, P., & Jokela, V. (2004). CABG and PTCA patients' expectations of informational support in health-related quality of life themes and adequacy of information in 1-year follow-up. *European Journal of Cardiovascular Nursing*, 3(2), 149-163.
- Kubota, H., Miyata, H., Motomura, N., Ono, M., Takamoto, S., Harii, K., Oura, N., Hirabayashi, S., & Kyo, S. (2013). Deep sternal wound infection after cardiac surgery. *Journal of*

- cardiothoracic surgery*, 8(1), 132. <https://doi.org/https://doi.org/10.1186/1749-8090-8-132>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer publishing company.
- Lefèvre, M., Van den Heede, K., Camberlin, C., Bouckaert, N., Beguin, C., Devos, C., & Van de Voorde, C. (2019). Impact of shortened length of stay for delivery on the required bed capacity in maternity services: results from forecast analysis on administrative data. *BMC health services research*, 19(1), 1-9. <https://doi.org/https://doi.org/10.1186/s12913-019-4500-8>
- Mangold, K., Kunze, K. L., Quinonez, M., Taylor, L., & Tenison, A. (2018). Learning Style Preferences of Practicing Nurses. *Journal for nurses in professional development*, 34(4), 212-218. <https://doi.org/https://doi.org/10.1097/NND.0000000000000462>.
- Omari, F., Al-Zaru, I., & AL-Yousef, R. (2013). Perceived learning needs of Syrian patients postcoronary artery bypass graft surgery. *Journal of clinical nursing*, 23(11-12), 1708-1717. <https://doi.org/https://doi.org/10.1111/jocn.12319>
- Parizad, R., Shabestari, M. M., Movasegi, A., Porshahbaz, E., & Shafayi, K. (2015). Educational needs of patients undergoing coronary artery bypass graft. *Medical Science and Discovery*, 2(5), 297-300. <https://doi.org/https://doi.org/10.17546/msd.61610>
- Rushton, M., Howarth, M., Grant, M. J., & Astin, F. (2017). Person-centred discharge education following coronary artery bypass graft: A critical review. *Journal of clinical nursing*, 26(23-24), 5206-5215.
- Su, P., Hong, L., Zhao, Y., Sun, H., & Li, L. (2015). Relationship between hyperuricemia and cardiovascular disease risk factors in a Chinese population: a cross-sectional study. *Medical science monitor: international medical journal of experimental and clinical research*, 21, 2707.
- Subeh, M., Salami, I., & Saleh, M. (2014). Most frequent and severe symptoms and learning needs among CABG patients. *Int J Nurs*, 1(2), 167-182. <https://doi.org/http://dx.doi.org/10.15640/ijn.v1n2a13>
- Cate, T. O., Kusurkar, R., & Williams, G. (2011). How self-determination theory can assist our understanding of the teaching and learning processes in medical education. AMEE guide No. 59. *Medical teacher*, 33(12), 961-973. <https://doi.org/https://doi.org/10.3109/0142159X.2011.595435>