from the questionnaire due to a problem of singularity and extracted variance 21.5% [Tables 1 and 2].

Table 2 displays the loadings of each item onto each factor, it represents the level of variance explained by the particular item for the corresponding factor, and the extraction is recommended to be at least 3%. This entails more evidence to exclude item “the hospital uses the lifespan approach in nutrition interventions” (with an extraction load of 0.215) in addition to its problem of singularity caused by this item. The rest of the items did not cause neither multicollinearity/singularity in the original correlation matrices nor of any of its extracted variance had its value <3%. As a result of that, all the items were included in the questionnaire under the corresponding factors.

After the exclusion of the item “the hospital uses the lifespan approach in nutrition interventions” from the questionnaire and factor analysis was running for the 43 items once regardless the categorization of items by factor, the test of Kaiser-Meyer-Olkin (KMO) and Bartlett’s test of sampling adequacy revealed that the original correlation matrix was significantly not identity matrix; the KMO value was 0.930 and Bartlett’s test with \( P < 0.001 \) in addition to its problem of singularity caused by this item. The rest of the items did not cause neither multicollinearity/singularity in the original correlation matrices nor of any of its extracted variance had its value <3%. As a result of that, all the items were included in the questionnaire under the corresponding factors.

Reliability
The internal consistency reliability was tested by Cronbach’s coefficient for each of the 11 factors in each of the four questions (except the second factor 3 question after exclusion of item “the hospital uses the lifespan approach in nutrition interventions”) with the participant as the unit of analysis. The observed coefficients ranged from 0.727 to 0.924, indicating exceptionally high reliability. By convention, a lenient cut-off of 0.60 is common in exploratory research; alpha should be at least 0.70 or higher to retain an item in an “adequate” scale. Many researchers require a cut-off value of 0.80 for a “good” scale.[16]

Discussion
The increase of NCD creates a great burden on healthcare systems; hence, it is essential to the UAE government to have a thorough nutritional-based strategic plan to counter this trend. This questionnaire aims to understand the assessment of what influences the implementation of a nutritional-based strategy. It is built upon a hypothesis that the participants are the best experts in this respect. Nevertheless, the participant’s opinion is based on many factors which include private or public sector, the degree to which they are involved in the strategy, and educational level.[17]

Table 3: A summary of results from factor analysis on the questionnaire per 11 factors for the agreement

| Factors                              | Sample size | Kaiser-Meyer-Olkin measure of sampling adequacy | Bartlett’s test of sphericity (\( P \)) | Cronbach \( \alpha \) | Percentage of amount of variance explained |
|--------------------------------------|-------------|-------------------------------------------------|----------------------------------------|------------------------|--------------------------------------------|
| Strategy development                 | 154         | 0.780                                           | <0.001                                 | 0.828                  | 67.517                                     |
| Resources and enablement             | 150         | 0.61                                            | <0.001                                 | 0.727                  | 65.980                                     |
| Process and activity                 | 148         | 0.707                                           | <0.001                                 | 0.792                  | 62.32                                      |
| Patient orientation                  | 152         | 0.769                                           | <0.001                                 | 0.879                  | 73.872                                     |
| Quality                              | 152         | 0.845                                           | <0.001                                 | 0.924                  | 81.987                                     |
| People and competencies              | 145         | 0.775                                           | <0.001                                 | 0.838                  | 67.743                                     |
| Values and care design               | 155         | 0.765                                           | <0.001                                 | 0.869                  | 71.961                                     |
| Measurement and impact               | 146         | 0.813                                           | <0.001                                 | 0.892                  | 75.988                                     |
| Innovation and best practice         | 152         | 0.806                                           | <0.001                                 | 0.879                  | 73.936                                     |
| Teamwork                             | 148         | 0.723                                           | <0.001                                 | 0.838                  | 67.513                                     |
| Culture diversity                    | 148         | 0.812                                           | <0.001                                 | 0.906                  | 78.158                                     |
Questionnaires seeking participants’ opinion should be not only reliable, valid, and consistent but also concise and adequate [Tables 2 and 3]. This is especially so if the area studied is conventionally regarded as sensitive such as participants provide their expertise for establishing a strategic plan that will be implemented nationwide. The exclusion of the first item from the second component “the hospital uses the lifespan approach in nutrition interventions” was informed by the logical and pragmatic approach. This demanded that all the key components in the original questionnaire be retained. Furthermore, the remaining 43 items which covered major aspects of factors of nutrition strategy were more simply and clearly phrased for the decision-makers. Hence, it was gratifying to note that the reduction of the items from 44 in the original instrument to 43 in the present version did not result in a significant reduction in reliability, validity, or consistency of the instrument. Another point to raise is that either the number of factors of a strategic plan of the specific domain such as nutrition to affect the burden of NCDs or the number of professionals needed to validate this instrument is a real dilemma. The question of an overall number of factors and sample size that needed to validate the instrument of a strategic plan as general is very fluctuated in the literature.\(^{18‑21}\) In this study, the existing number of factors (11) and their subitems (43) have robust, reliable, internal consistency and validity. Unfortunately, the method of validation and reliability of an instrument is able to exclude the inadequate factors and items involved, but without any ability to test the completeness of neither factors nor the items per component.

**Conclusion**

The study concluded that the questionnaire was valid and reliable on its form of 43 items divided into 11 factors to assess the agreement toward factors needed to implement a nutrition strategy in the UAE.

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

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Effectiveness of “percutaneous coronary intervention care program” on selected variables among patients undergoing percutaneous coronary intervention

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ABSTRACT
Objective: The study was conducted to assess the effectiveness of “percutaneous coronary intervention (PCI) care program” among patients undergoing PCI.

Subjects and Methods: A quasi-experimental design was adopted, and purposive sampling technique was used to enroll the patients in the experimental and control groups. Different tools were used to collect the data, which include numerical pain and comfort rating scale, Barthel Index for activities of daily living, assessment for the presence of vascular complications, modified CADEQ-SV questionnaire, State-Trait Anxiety Inventory scale, self-structured satisfaction scale, and PCI manual.

Results: There was a significant decrease observed in state anxiety (P < 0.001), pain level at 12 h (P = 0.03), discomfort within 12 h (P < 0.001) and 24 h (P = 0.002), improving knowledge regarding coronary artery disease (CAD) (P < 0.001), and activities of daily living as well as significant increase in satisfaction level (P < 0.001) among patients undergoing PCI in the experimental group than the control group.

Conclusion: The study concluded that this program was effective in reducing anxiety, pain, and discomfort and increased satisfaction level, knowledge regarding CAD, and independence in self-care activities for PCI patients.

Keywords: Coronary artery disease, educational and interventional package, percutaneous coronary intervention

Introduction

Globally, cardiovascular diseases are the topmost cause of mortality and morbidity. Among all cardiovascular diseases, coronary artery disease (CAD) occupies the number one position as the main cause of mortality.[1] According to the WHO’s Global Health Statistics 2008, CAD will become the number one killer disease in 2030, causing 14.2% of all deaths worldwide for 200 member countries.[2]

The options to treat patients with CAD are nonpharmacological, pharmacological, interventional cardiology procedures, and surgical treatment. Percutaneous coronary interventions (PCIs) are interventional cardiology procedures to improve survival and relieve symptoms by reducing the target stenosis and restoring the coronary blood flow.[3] Educational and interventional programs are considered to be vital strategies that can contribute to better health outcomes in patients with cardiac diseases. Therefore, preinformed education should be given by nurses to patients to reduce their physical and emotional discomfort. Post-PCI nursing care of patients undergoing PCIs includes close assessment, pain relief, sheath removal,
management of complications, patient positioning, ambulation, and health education.\textsuperscript{[3,4]} Therefore, the present study was conducted to develop, implement, and evaluate the effectiveness of “PCI care program” for patients undergoing PCI. The goal of this educational interventional program is to increase the patient’s interest and involvement in self-care by conveying knowledge and preparing them to manage their own condition.

Subjects and Methods

A quasi-experimental study to assess the effectiveness of “PCI care program” was conducted in one hundred patients undergoing PCI in cardiology units of Advance Cardiac Centre, PGIMER, Chandigarh, in the month of July–September 2017. The study participants were selected through purposive sampling, with 50 each in the experimental and control groups. The Institute’s Ethics Committee of PGIMER, Chandigarh, approved the study protocol; the study was also registered under the Clinical Trial Registry India with reference No. REF/2017/05/014405; and informed consent was obtained from the patients. The study duration was 10 weeks, July-September 2017.

The study participants were patients undergoing PCI in cardiology units of Advance Cardiac Centre, PGIMER, Chandigarh. All patients who were undergoing PCI were screened for eligibility criteria. All the patients who knew Hindi/Punjabi or English and who were willing to participate were the eligible criteria for the participants. Patients who met the inclusion criteria were enrolled and placed into the experimental or control group. There were no exclusion criteria in the study.

It was an interventional study, in which there were two groups – control group and experimental group. In this study, intervention was in the form of PCI care program. This program was developed after assessing the needs of the patient, review of literature, and suggestion of experts in the field of cardiology and nursing. PCI care program contained both interventional package and educational package which include care of the patient before, during, and after PCI; demonstrations and assistance in performing self-care activities; and teaching in appropriate language and via booklet regarding CAD, PCI, lifestyle changes, medication, and postdischarge to reduce anxiety and increase knowledge.

Patients in the control group received routine care. PCI care program was implemented in patients of experimental group 1 day before procedure; on the day of procedure; during procedure; and at the 0, 1\textsuperscript{st}, 2\textsuperscript{nd}, or till the day of discharge of patients from the hospital after PCI via informational booklet, demonstration, teaching in appropriate language with suitable audiovisual aids, and assisted in performing self-care activities. However, the majority of patients discharged on the 2\textsuperscript{nd} day after procedure. Follow-up was done on outpatient department basis at the 30\textsuperscript{th} day and telephonic approach at the 15\textsuperscript{th} and 30\textsuperscript{th} days after PCI.

Tools of the present study included different parts. They were patient pro forma, numerical pain and comfort rating scale, Barthel Index for activities of daily living, assessment for the presence of vascular complications, modified CADEQ-SV questionnaire, State-Trait Anxiety Inventory (STAI) scale, self-structured satisfaction scale with “PCI care program,” or routine care. Patient pro forma further included sociodemographic profile, clinical profile, and personal profile. Numerical rating scale adopted from McCaffery and Beebe \textit{et al.} (1989) indicates the intensity of current, best, and worst pain levels over the past 24 h on a scale of 0 (no pain) to 10 (worst pain imaginable). Numerical comfort rating scale indicates the intensity of current, best, and worst pain levels over the past 24 h on a scale of 0 (no comfort) to 10 (highest level of comfort). The Barthel Index for activities of daily living was used as a record of what a patient does and not as a record of what a patient could do. It includes ten components that are feeding, bathing, grooming, dressing, bowels, bladder, toilet use, transfer, mobility, and stairs. The modified CADE-QSV was used to assess the knowledge of patients related to CAD; the CADE-Q was developed which includes knowledge of five domains of CAD – medical condition, risk factors, exercise, nutrition, and psychosocial factors. Based on the CADE-Q (the first version), the CADE-QSV was developed. From the CADE-QSV, the modified CADE-Q SV was developed which includes knowledge related to PCI. The modified CADE-QSV has designed to be a true/false/I do not know questionnaire, with 23 items. Each correct answer is equal to 1 point; therefore, the maximum score possible is 23. STAI is a psychological inventory consisting of forty self-report items about anxiety affect. It measures anxiety at both extremes of the normal affect curve (state vs. trait). Self-structured satisfaction scale includes 25 items and each item has 5-point Likert scale. The score for each item ranged from 1 (very dissatisfied) to 5 (very satisfied). Hence, the overall minimum score is 25 and maximum score is 125.

Data analysis

The effectiveness of “PCI care program” was assessed by conducting statistical analysis of data by SPSS (IBM SPSS