

Patient expectation on angiography procedure at cardiac center of tikur anbessa specialized hospital, addis ababa Ethiopia: Qualitative study

Abstract

Aim/Objective: This study aimed to explore patient expectations on angiography procedures at Cardiac Center of Tikur Anbessa Specialized Hospital.

Background: Cardiovascular diseases are currently the major cause of mortality and morbidity around the world and are currently worsening in developing countries including Ethiopia.

Design: A Health care institution-based qualitative study was conducted using a phenomenological approach from January to March 2021.

Methods: The study participant was selected by using a purposive sampling technique. Ten patients who went through angiography procedures were included. The number of study participants was determined based on the level of saturation of ideas. The collected data was analyzed using a conventional qualitative content analysis and tape-recorded for an in-depth interview.

Results: More than half of the participants didn't know what angiography means and whether was it a diagnostic or therapeutic procedure. Half of the participants responded that they were getting treatment rather than a diagnostic test.

Conclusion: The finding of this study showed a huge information gap and insight in the expectation of patients undergoing angiography. Therefore, to fill the aforementioned gap health care workers should focus on the patients teaching for those who are going to have coronary angiography procedures.

Keywords: expectation, patients, coronary, angiography, procedure

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Abbreviations: CABG, coronary angiography bypass grafting; CAD, coronary artery disease; CAG, coronary angiography; CHF, congestive heart failure; CCU, cardiac care unit; CVD, cardiovascular disease; FMOH, federal ministry of health; MOE, ministry of education; PCR, percutaneous coronary revascularizations

Introduction

Background information

Cardiovascular diseases (CVDs) are currently the major cause of mortality and morbidity around the world. Among the CVDs, coronary artery disease (CAD) is the most common cause of death for both men and women. According to the world health organization (WHO) in 2016, an estimated 17.9 million people died from CAD globally, which accounts for 31% of all deaths. This number is incredibly expanding from time to time and individuals have to have the access in getting the service.^{1,2}

American heart association (AHA) expressed that; cardiovascular disease is the leading cause of mortality in the United States. It is evaluated that nearly 1.4 million deaths happen in every major ethnic group.³ British Heart Foundation uncovered that CAD accounted for more than 2 million deaths in the UK. Every 7 minutes a Canadian individual dies because of CAD. WHO insights state that nearly 91 individual die each hour in the world due to heart attacks with more incidence in the younger group less than 40years.^{1,4}

CVDs, which are one of the most public health issues in Africa including Ethiopia are getting a high priority from time to time.

Cardiology has many diagnostic and therapeutic procedures, such as CT scan, MRI, X-rays which are often invasive and require advanced medical equipment and highly trained medical experts. A medical branch of cardiology, many of these diagnostic and therapeutic procedures are invasive. Nearly all methods are to be prepared by advanced technologic devices and software. As a result of medical training, physician may think that the application of these procedures is too simple to be explained or he/she has no time to explain them because of work overload. Although, the patients are entitled to receive healthcare detailed information about the diagnostic procedures and their purposes, the complexity of the procedure and lack of simplified data makes it challenging.⁵

Coronary angiography (CAG) is the gold standard diagnostic procedure for the evaluation of coronary artery disease (CAD). It is an intrusive strategy, which is routinely utilized for the appraisal and conclusion of coronary artery disease (CADs). CAG is done by the inclusion of a catheter to the heart by puncturing the groin location which is called femoral and the catheter goes utilizing the femoral artery. In this procedure, color is infused and the degree and seriousness of stenosis and coronary artery disease are evaluated.⁶

The world health organization (WHO) report shows 174 million angiogram diagnostic procedures are performed each year, which are 1 out of 60 individuals in the world. A larger part of the patients gets well without any complications. The complication rate shifts from 3% to 16% and the permanent disability rate range from 0.4% to 0.8%.⁴

In Ethiopia, the first cardiac hospital in Addis Ababa was founded in May 2007, with 20 bed capacity and a cardiac catheterization

laboratory. Selection of patients for PCI requires a careful consideration of the extent of symptoms of ischemic myocardium, the reaction to medical therapy, a likelihood of fatal or serious morbid outcome in the event of abrupt vessel closure, and expected incidence of restenosis and suitability of the patient for coronary bypass grafting (CABG). With regards to UA/NSTEMI, an introductory invasive strategy is followed for those with hemodynamic instability, electrical instability, headstrong angina or, those first stabilized with medical treatment but remaining at elevated risk for clinical events.⁷

Statement of the problem

According to the WHO, cardiovascular disease remains the leading worldwide cause of morbidity and mortality in 2020. Developing countries are affected in higher proportion than developed countries. Hence, low-income countries are facing a “double burden” of disease that is stretching the already limited resources. In developing countries there are a higher proportion of citizens younger than 65, given the onset of CVD occurring among younger people, it is posing a threat to economic and social development. The rates of death and disability attributable to CVD in the labor force will be much greater than in western nations.^{8,9}

In Africa, accessibility of adequate diagnostic procedures is a major constraint. Hospital-based studies have serious limitations to show the true picture of a disease. Besides, the number of patients who can undergo coronary angiography/PCI is further limited by logistical issues. Except for few nongovernmental institutions, there isn't a wide coverage.⁹

Approximately 9 % of all deaths in Ethiopia, in 2012 were caused by CVD (WHO). Be that as it may, some hospital-based studies and a few communities based researches have appeared CVD as one of the causes of morbidity and mortality. In a report released in 2001, in an autopsy study done on bodies brought by police to the Medico-legal Division of Menilik II Memorial Hospital, after sudden death, CAD accounted for 70% of those who died due to cardiac and related problems.^{10,11}

In Ethiopia, there is limited research studies conducted on coronary angiography procedure in relation to patient's expectations among angiography patient. Therefore, this study was aimed to explore patient expectation on coronary Angiography procedures who undergone for Angiography test. Then to make a continuous follow up and an evidence-based decision is required.

Research questions/hypothesis

- How are patients' expectation about the Coronary Angiography procedures?
- What is patient level of awareness about angiographic procedure

Purpose of the study

This study designed to explore patient expectations about angiography procedures among angiography patients in Cardiac Center of Tikur Anbesa Specialized Hospital.

Patients and methods

Study setting and time frame

This study was conducted at cardiac center of tikur anbesa specialized hospital, located in Addis Ababa, the capital city of Ethiopia. Cardiac center ethiopia (CCE) conceived in Dr Belay Abegaz's and established in 1989. Tikur anbesa specialized hospital (TASH) is a central tertiary generalized referral and teaching hospital

with a total of 800 beds and from this 50 beds are found in the cardiac center. The center is providing heart surgery, interventional and undertake diagnostic procedures.¹² There are currently ten cardiac specialist, more than five medial doctors, 50 nurses working in the cardiac center. Ethiopia aspires to become a center of excellence in the diagnostic procedure, treatment and care of patients with cardiac problems. To explore patients expectation about angiographic procedure. This study was conducted from January to March 2021.

Study design

A qualitative study design was employed for this study. The rationale behind using a qualitative research study design was well suited to explore patients' level of understanding phenomena of their context, feeling, opinion, suggestions, concepts, and behaviors. Therefore, a qualitative approach is appropriate. Evidence from more than one case is often considered to be stronger than evidence from a single case.¹³

Study participants and sampling technique

Data were collected from patients who had angiography procedure in cardiac center of Tikur Anbesa Specialized Hospital of cardiac center of patient admitted to ward, ICU during the data collection period. A purposive sampling technique were used as it is essential to explore information in related to patients' expectation towards angiographic procedure.

Research approach

Qualitative study research design was employed for this study. The rationale behind using qualitative research method was that qualitative research is well suited for understanding phenomena within their context, discovering links among concepts and behaviors. A qualitative research method is appropriate for this study because the aim is to realize and describe human experiences, namely what it is like patient's perception in related to angiography procedure and research provide an insight into how patients perceives and their experience. Human experiences are not easy to quantify or assign numerically therefore a qualitative approach is appropriate. Evidences from more than one case are often considered to be stronger than evidences from a single case.¹³

Data collection technique and analysis procedures

The researcher uses an in-depth interview for the purpose of collecting primary data from participants. The inclusion of participants was determined by using a purposive sampling method.

In order to assess the patient experience related to Coronary Angiographic procedure. The data was collected from patients who had Coronary Angiographic procedure using in-depth interview.

The interview question includes about patient Expectation level, CAG procedure, fear and anxiety of patients in CAG process before and after the procedure, pre procedural preparations needed, about the duration of the procedure, complications etc. An in-depth interview was recorded and written down in the paper and then translated into English. Furthermore, during the interview field notes were taken concerning the participant's gestures, tones, and other body languages. In doing so, the researcher followed the thematic content analysis method which involves transcription, translation, coding, and categorization, and develops themes and interpretations the researcher intended to do it manually. The thematic analysis focuses on the coding of quality data, producing clusters of text with similar meaning often searching for the fundamental them and capturing the real meaning of the phenomena under exploration.¹⁴

Operational definition

- a. **Patient expectation:** understanding and measuring patient expectations of health care is central to improving patient satisfaction and delivering patient centered care. However, most empiric research in this field has focused on measuring patient Expectation among Angiography procedure.¹⁴
- b. **Angiography procedure:** Is the gold standard diagnostic procedure for evaluation of CAD. It is an intrusive strategy, which is routinely utilized for the appraisal and conclusion of coronary artery disease (CADs). CAG is done by inclusion of a catheter to the heart by puncturing the groin location which is called femoral and the catheter goes by means of the femoral artery. In this procedure, color is infused and the degree and seriousness of stenosis of the coronary will be evaluated.⁶
- c. **Cardiac patient:** cardiovascular disease is the leading cause of mortality in United States. It is evaluated that nearly 1.4 million deaths happen in every major ethnic group.³ British Heart Foundation uncovered that CAD accounted for more than 2 million deaths in UK. Every 7 minutes a Canadian individual die because of CAD. WHO insights states that nearly 91 individuals die each hour in the world due to heart attack with more incidence in younger group less than 40 years.¹
- d. **Angiography procedure among cardiac patient:** -during angiogram procedure a dye that is visible by an x ray machine is injected in to blood vessels of the heart. The machine takes an image to look at blood vessels it is recommended for patients who have sign of myocardial infarction, unstable angina, a person who born with congenital heart disease chest injury, a heart valve problem and many more medical reasons.¹⁴

Data quality control

Careful modification of the data collection tool according to Ethiopian situation, training of data collectors, frequent checking of data collection procedures by principal investigator for coding and data cleaning. Before the actual data collection, pilot survey (pretest) was conducted to measure the validity and reliability of the method and materials. Pretest sample was conducted at zewditu hospital cardiac center with 10% of the total sample size and then, based on the findings of the pilot survey, the questions were modified for wording, simplicity and clarity. During data collection period the collected data was reviewed and checked daily for completeness and consistency by the principal investigator.

Result

Participant's socio-demographic characteristics

The study participants who had undergoing cardiac angiography procedure at Tikur Anbesa specialized Hospital, from a total of ten participants, 7 (70%) of them were males with the mean age of 47 ± 12.4 (42–68years) included and 90% of the respondent were from Addis Ababa and the remaining came from country side. In-addition to these, 80% of the participant was married and 60% of the total respondents was illiterate.

Emergед themes

From the analysis of individual interview data, four themes emerged. These themes were identified as the rich and detailed account of patient expectation about angiography who has received angiographic procedure among cardiac patient at cardiac center of Tikur Anbesa Specialized Hospital.

Cardiac health problem

The participants were asked, what was it like for you having the cardiac health problem and being hospitalized with heart problem.

Majority of the respondents were very scary because they had cardiac problem and being hospitalized for more than half of participants came to Tikur Anbesa specialized Hospital because they can't afford the required payment in private hospitals (private hospitals requires higher medical cost than government hospitals). Most participants recognize their heart disease for the last 1-3years. The remaining three participants had been suffering from heart problem for more than four years.

DW1 said that *"his cardiac problem was started for the last six years ago. He fainted on the street and taken to him to the hospital and then the doctor fully investigated and diagnosed as he a cardiac problem. Since then, he had been treated in several private and governmental hospitals. However, by the day, the cost of the private hospitals goes on increasing and become un-affordable to him, so he decided to come to Tikur Abbessa Specialized Hospital"*.

DW6 said *"heart disease is a critical situation, which need a special treatment and a scary thing for the patient because it's a life and death situation. However, it's what God brought to me so I hold my faith and praise to God to be healed soon"*.

Coronary angiography and its procedure

The researcher asked the participants what kind procedures are done for them and followed by two other questions: I) whether they heard about CAG before and II) explain what CAG means and the procedure.

The current study reveals that, more than half of participants don't know what kind of diagnostic procedure had been done for their clinical problem and less than fifty percent of participants responded that as they had been through CAG procedure. One respondent responded as he thinks that CAG is a type of surgical procedure. Hence, more than half of respondent don't know what angiography is all about, even they can't explain about the procedure and don't understand why they need to have the treatment procedure.

DW1: *He claimed that "angiography is a cardiac disease treatment procedure or a surgical management to relief the pain he has been suffering."*

DW3: *"he said that, angiography is a medical term and it's even difficult to pronounce the word and due to my poor educational background, I am not good at English so there is no way that I will know what angiography means and I don't want to ask about this word"*.

Patients information source about the procedure

The participants of the study were asked, if they asked someone about CAG and to explain what kind of information do, they get and where is that from?

Majority of participants said they get information about CAG from their doctors and only two participants responded as they get information about CAG procedure from the internet and asking their friends and relatives. More than half respondents said they received adequate information regarding the procedure from different sources. The remaining four participants said that they didn't receive adequate information regarding the procedure.

DW1 explained that, *"he didn't know anything about cardiac disease or angiography meaning or process. The doctors or nurses*

doesn't mention or explain about angiography, the process and what he will going through in the process".

DW2: responded that, "he came to know about angiography by asking his friends and patient who has been undergoing through angiography and he also searched it in over the internet to explore more about angiography. In doing so, he collected adequate information on angiography meaning, procedure, how it's employed and how the result of the angiography used for clinical diagnosis".

Anxiety, stress and related problems

As an extension of the same question participants were also requested to share their thoughts on how this procedure has affect/will affect them or not. If they have anxiety, stress or fear related the procedure and what related problem do they have regarding the procedure?

According to the analysis, most (70%) respondents have several kinds of fears about the CAG procedure. The common fear most participants shared was the paper. They were required to sign, which includes giving their consent to participate in the CAG process and if something happens or went wrong in the procedure, they are willingly taking the risk associated with the procedure.

Majority of respondents said that they didn't recognize any side effects after the CAG procedure has been conducted to them. However, less than one fourth of the participants experienced some side effects like feeling of exhausted, lack of sleep at night and inability to walk long journey.

DW1 said that, "I was so afraid before the procedure because i was thinking i would die and after the procedure done i became health and there was nothing to worry about. And he didn't recognize that the angiography process can have mental and psychological impact on him.

DW2 thinks "he has no fear or anxiety regarding he procedure when the angiography procedure conducted on him, he would incur pain but when he actually went through the angiography procedure it was not as he expected. It's not that painful and complicated.

Benefits of the procedure

The participants were asked if is there anything they find get benefit from the procedure participants were also requested to share their thoughts on how this procedure helps them. Their expectation from CAG,(especially the risks and side effects of CAG).

DW1 said that, "I believe that am getting a benefit from coronary angiography procedure. But It was different from my thought."

DW2 said "he knows about the angiography process and benefits so he was not surprised about it".

Patient awareness related with procedure

This study reveals that half of the respondents were worried and afraid before going through angiography. This is because did not have adequate information about angiography procedure. In addition, those patients thought that angiography is a surgery and it has a huge risk on their life.

DW4 "He didn't have any awareness related to procedure and I didn't even get what I expected about angiography was performed".

Most of the participant feared when they are going through the CAG procedure because it was like a surgery for them and some worried when the doctor told them to sign a paper work that they

are willingly agreed to take part in the CAG procedure. Half of the respondent worried about the CAG because they don't have adequate information about the CAG procedure.

Patient expectation about the procedure

The researcher asked respondents about their expectation from the procedure and their thought about the possible way the procedure could affect their day-to-day activities and sleep pattern.

Less than one fourth of the participants experienced some side effects on their day-to-day activities and their sleep patterns.

DW1 said "knowledge or age and gender have no effect on volume information about the cardiac disease, meaning of angiography or the process."

DW4 said "my age and gender have an influence in my health condition because am 43 years old and my age has an influence on my living conditions. In general, however, my educational background and dedication to know things has contributed a lot to better understand what my disease is all about and got adequate information about the process and treatments."

Participant's suggestion and comments

Finally, respondents were given the chance to share their comments or suggestions about the CAG and its procedures. Most of respondents have no any suggestion, questions or comments except some participants.

DW2 suggested "government and non-government organizations should support cardiac hospitals and emphasis should be given since the hospitals report indicates that currently there are high prevalence rate of cardiac failure and related problems in the nation.

DW1 "Angiography is a medical term and it is difficult to understand by ordinary people or patients so that the respective hospital doctors and nurses should focus to teach them in detail including description of angiography procedure, purpose of angiography procedure and possible side effects for a patient undergoing angiography procedure".

Table 1 Four emerged themes used for individual data analysis of angiographic procedure for cardiac patient at Tikur Anbessa Specialized Hospital

Thematic area	Sub thematic area
Expectation	What patients expect from the procedure and did they get what they expect from the procedure
Knowledge	Patient knowledge and information regarding procedure and do they get any information from the health care worker/ source of information.
Anxiety and stress	If they have any anxiety or fear regarding the procedure and also assessed if the procedure affects them or not
Procedure benefit	What benefit do they expect from the procedure and do they get that benefit after the procedure

Discussion

Currently, cardiovascular diseases are one of the most frequent causes of mortality and morbidity across all nations. The number of health service providers rendering diagnostic and therapeutically services for cardiovascular diseases is significantly increasing in Ethiopia. However, health care workers to patient ratio are still low and this leads to abbreviate examination time and advisement causing several impediments. This condition makes it difficult for health staff

to effectively provide the service. On the patient side as well, as the result provision of inadequate information for the patient on CAG.

This study intends to look into the expectations of patients about CAG procedure. Understanding these expectations of the patient is of paramount importance for all the health team to provide more viable care to patients and improve the overall health services in this area.

According to the CDC 's definition and American Heart Association, Coronary angiography is a diagnostic procedure using special X-Ray and materials also used contrast to see how blood flows through the coronary arteries.¹² And in Turkey, a survey found that 47% of sufferers did not have awareness about CAG procedure, and this problem resulted in having off-base convictions. From the total respondents, most of them referred to that they don't know what Angiography is. As in contrast to the effects of this study, the findings in Turkey are special from the state of affairs in Ethiopia.¹ This finding out about has additionally shown that coronary angiography procedure, benefit, dangers, suggestions, and why particular procedure is done are not given accurately to patients. This result modifies and conforms to the above one this justifies the medical doctors might have provided some records to the patients; however, the message would be efficiently communicated to each affected person solely if the primary data is furnished in a simplified way that has taken into account the historical past and ability of the patient.

But the results of this study showed that more than half of the patients considered Angiography as a treatment technique for their cardiac problem. And, most participants from the total patients stated that they have no idea about what Angiography means. The remaining one-fourth of the respondents believed that the procedure would help them and treated their heart problem. Half of the respondents did not get adequate information and the majority of them are getting the information from their doctor but they really didn't understand the information.

The European experience shows that visual training, information pamphlet & other supportive fabric will contribute to increasing understating patients.¹⁵ The price of conversation acts each as the groundwork and as the power of affected person satisfaction. Visual gadgets can also helpful. As a result of the extended potential of communication, in Europe, cardiovascular patients experiencing coronary angiogram and PCI have moderate uneasiness sometimes before the system.¹⁶⁻¹⁸ This distinction is because of the obstacles to communication and the mis-understanding of the procedure.

Anxiety, fear and stress are frequent in patients present in most of invasive procedure like Catheterization, thrombectomy, transvenous pacemaker and other. Giving adequate information and aware our patients regarding the procedure will minimize their nervousness and stress to the procedure.¹⁹

In CCE respondents noted that they have demanding times, have fear, and afraid before the procedure. They also expected the health care workers to assist them mentally before and after the procedure. Psychological support and Nursing care can lead to the ability to change the circumstance in patients. Regarding this care, respondents in this study mentioned the assurance of healthcare providers is very necessary. So cardiovascular nurse practitioner must also take into account the patients' psycho-emotional needs.

According to the findings of a study through Anika Odell and Angela Bang about Patient' expectations and fulfillment of expectations earlier

than and after treatment for suspected coronary artery disease.¹⁵ Patients with suspected CAD had high self-assurance in the healthcare device and excessive expectations involving receiving suited care at the start of healthcare. They had, in general, an advantageous mindset toward the chain of care, which is in line with contemporary tips from the recommendations for CAD, and a superb mindset concerning their involvement in the decision-making for their care process. At the top of the care process, however, solely 56.4% of the patients claimed to have had their expectations fulfilled.

As compared to this study, respondents have low expectations regarding receiving proper care at the start of healthcare and this may lead them to lack confidence in the healthcare system. Because the majority of the participants has been wondering and misunderstanding about the CAG and their expectation is on the contrary from the procedure because of this most participants have several kinds of fears about the CAG procedure the above study is different from the situation in CCE. Having time to the patient to give mandatory information may narrowing the gap of patient expectation about the procedure and lack of training related to cardiac nurses and the cardiac team is one of the most problems for this gap and identify different stages of coronary artery disease supported by radiological examination is supportive for appropriate medical interventions.^{20,21}

In the American Journal of Critical Care, it was once noted that the patient information and experience related their degree of indispensable instruction. Educated patients have a vital record than illiterates. Male is usually determined to be extra knowledge recipients than females.

In this study, most frequently the respondents don't assume that their gender should have an effect on their expectations about having angiography techniques or different health-related issues. However, the respondents have indicated that academic fame has a contribution in putting their expectations. Only one respondent stated that their gender and age ought to influence their expectations. Even if the theory confirms that academic popularity and gender have the thing for receiving knowledge the respondent in this find out about didn't agree with this concept it is one of the profiles for the uneducated neighborhood how is their degree of appreciation involving the procedure.

This study also revealed that there is a discrepancy between theory and what patient expected of the sufferers who claim to have the right knowledge about CAG.

To improve the current situation, there is a need for recognizing patients' expectations and their information then instructing them and imparting them with the required information about diagnostic CAG and related to the recommendation.

The findings of this study burdened several factors for patient's expectations related to angiography procedure and gave a new perspective for all health care providers in cardiac unit. This research reveals a limited number of participants Therefore, I couldn't generalize the findings to all different patients undergoing CAG. To sum up, it can be normally mentioned that the findings of this find out about are aligned with the different studies.

Limitation of the study

Very limited number of study participants included in this study may difficult to generalized patients' expectation on angiography procedures of the study population.

Conclusion and recommendations

Conclusion

The finding of this study showed a huge information gap and insight in to expectation of patients undergoing angiography. This information gap and misunderstanding resulted anxiety and stresses among participants. The lack of awareness and unrealistic expectation about CAG procedure stems from several factors, including complexity of the procedure. Lack of simplified information, lack of education, insufficient information, and misinformation. This study also showed in order to provide better and effective care, we need to understand patient expectations and increase awareness.

Patient preparation for angiography should include education and simplified information addressing patient expectation. Education materials should be prepared and tailored for the general public in different languages. This will create suitable healthcare environment that meets patient expectation while promoting quality and patient satisfaction. Furthermore, providing additional tools and training for doctors and nurses is curtail and will enable them to help their patients to have a better experience.

In general, filling the information gap and understanding the importance of patient expectation and awareness will lead to reduced patient anxiety and stress. Medical facilities and care providers need to put emphasis on all-rounded patient care that is not only focused on specific procedures outcome, but also on psychological well-being and satisfaction of patients.

Recommendations

FMOH should provide training for the health care provider who works in the center with the total service and supply.

MOE should incorporate the importance of patient expectation and awareness in to its curriculum. Health care policy makers should create a law that promote the importance of patient expectation and awareness. The management of CCE must seriously consider this issue and train health care providers to fill the information gap among CAG procedure.

Recommendation for CCE and another cardiac centre

Provide patients with open ended questionnaires on their expectation and concerns. Preparing educational materials like video clip about CAG, which is displaying at OPD, patient waiting room and at wards. Provide simplified Information and pamphlet in different languages.

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Ethical approval and consent to participate

Ethical clearance obtained from institutional review board research ethical committee of School of Nursing and Midwifery, Addis Ababa University. Consent from medical director of the Hospital obtained and through voluntary written and verbal consent obtained from participants themselves after appropriate information given such as;

“the purpose and duration of the study, procedure in the study, the right to withdraw from the study, the right to ask questions, and the potential risks and benefits of the study”. The respondents were informed in detail about the purpose of the research, interview procedures and the use tape recording during the interview. The researcher took utmost care to ensure privacy, confidentiality and anonymity of participants. To maintain confidentiality, the participants’ real name has not been used; rather code names were given to participants throughout the research processes. Tape recording was used only when the participants’ consent was ensured. The recorded tapes and transcriptions were kept in a locked place until the study was completed and approved by the school of nursing and midwifery. Besides, participants were informed that they can take a break, skip questions, and even withdraw at any time during the interview Resnik (2015).

Authors’ contributions

The paper is the result of joint research, the contribution of every author is comparable to the others. **Getnet R.** searched the literature, trained field researchers for data collection, data analysis and wrote draft results and reviews of the manuscript and **Deribe L.** and **Habte T.** Data analysis, Conceptualized the paper(report) and Manuscript preparation and other necessary document preparation for publication. All authors read and approved the final manuscript.

Availability of data and materials

The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

Consent for publication

Not applicable.

Conflicts of interest

The authors declare that this study entitled, “Patient expectation about angiography procedure among cardiac patient in cardiac center, Addis Ababa Ethiopia” to be submitted to the Journal of *Nurse Education in Practice* to be considered for a possible review and publication. All authors contributed sufficiently to the project to be included as authors and are qualified to be authors. There is no computing interest, and all of us have approved the manuscript for submission. We have included acknowledgments, conflicts of interests, and we did not receive any financial support from any organization, and we confirm that this work is original and has not been published elsewhere nor is it currently under consideration for publication by any journal.

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