Research Article

Explanation of Pharmaceutical Care of Cardiovascular Patients Hospitalized in Hospitals Affiliated with Shahid Beheshti University of Medical Sciences

Faezeh Sahbaeiroy[1,2], Ali Ramezankhani[1*], Fatemeh Alhani[3], Afshin Zarghi[4], Mohtasham Ghafari[5] and Yadollah Mehrabi[5]

[1]Department of Public Health, Shahid Beheshti University of Medical Sciences, Tehran, Iran
[2]Department of Nursing, Islamic Azad University, Tehran Medical sciences Branch, Tehran, Iran
[3]Department of Nursing, Tarbiat Modares University, Medical Sciences Branch, Tehran, Iran
[4]Department of Pharmaceutical Chemistry, School of Pharmacy, Shahid Beheshti University of Medical Sciences, Tehran, Iran
[5]Department of Public Health, Shahid Beheshti University of Medical Sciences, Tehran, Iran
[*]E-mail: aramezankhani@sbmu.ac.ir

_____

ABSTRACT

The main goal of pharmaceutical Care is to provide effective services in the field of drug-related issues that ultimately leads to improvement of patients' status and increase in their quality of life. This qualitative study using three-step approach of the Strauss and Corbin (1998) was conducted with 20 participating patients of doctors, pharmacists, and nurses semi-structured interviews .Total of 4508 basic codes were obtained at open coding step, the codes were overloaded based on their similarities, and common points. Finally, 795 overloaded basic codes were created. In the next step, they were in the 152 Classes and by frequent analysis, basic Classes were reviewed and subsequently compared. Classes were merged together to create finall 48 Classes. The data were re-examined in the axial-coded of similar integrated Classes that have certain common features were formed of the 19 subclasses and then the Classes that were around of an axis created the axial-Classes, According to this process of five-axial Classes which focus on causal-background conditions where the phenomenon happened, the strategies that were used to control the phenomenon, barriers and facilitators were obtained. The five main Classes were as inadequate responsibility of pharmaceutical Care, prioritizing treatment over prevention, non-patient-centered vision, and pharmaceutical Care with inadequate effectiveness and inefficient management. Description of story line and the final explanation method were used at selective coding step. Based on the findings of this study the main concerns of the participants were inadequate collective responsibility and inefficient management ultimately.

Keywords: Explanation, pharmaceutical Care, Cardiovascular Patients, Exploratory Design.
_____

INTRODUCTION

Care is at the heart of hygienic team activities and it is an issue that patients and patients expect to receive it. Actually care without relationship, providing information and encouraging to participation of patients and clients is not possible (1). Organization of keep and develop health knows the care as a health services provider system to improve the quality and access to health care, including pharmaceutical care, The main goal of pharmaceutical Care is effective services delivery in the field of drug-related issues of that ultimately leads to improving status of patient and increase in their quality of life (2).

_____

The report of the Institute of Medicine (IOM) of America highlights the improving and maintaining the top level of patient's safety. According to this report, errors caused by prescription of drugs every year leads to the deaths of more than 7,000 Americans. Institute for Safe Medication Practices (ISMP) collects and analyzes all the confidential annual reports related to medication errors provide recommendations in the field of patient education programs and care managed by pharmacists' community to reduce medication errors in hospitalized and outpatients patients (3).

The results show that injuries from medication errors is not related only to the individual but represents a complex system error care (4). Several factors such as weak and wrong relationships between physician and pharmacist, doctor and patient, pharmacist and patient, improper storage and maintenance of medicines in the pharmacies and similar labeling, etc. may have a role in the development of pharmaceutical care problems (5).

Studies on the quality of care often pay attention only to professional standards and expectations and of customer satisfaction and is neglected of care. In addition, pharmacist physician typically are not involved in direct education. On this basis results of a study related to the Pharmaceutical Society in 2009 showed that 87 percent of all patients referring only were received written information in relation to their version. Whereas only 35 percent of pharmacists also are provided any written notes and from these numbers also only 8 percent were reviewed notes with the patient (6).

On the other hand existence of doctors to acknowledge and fully understand the process of instruction during education to patient seems necessary, because unfortunately, most of patients are suffering from negative understand in instructions .Examples of errors that occur as result of inadequate education about medication include suspension of oral antibiotics to children through the ear that leads to ear infections. Errors related to improper use of patient from equipment due to inadequate education and etc. of other issues related to lack of education is wrong training or inadequate training (7, 8).

Another contributing factor in the prevention of drug problems is the patient's health literacy level. Many of people find it hard to understand the disease and its cause on its proper management and their role in maintaining healthy is very important and social , economic, psychological and emotional, physical, cultural background, information level of individual from health, the ability to read, understand and act upon health care information factors has related linked to (9). According to a report published by the American Medical Association and the Committee on Health Literacy more than 40% of patients with chronic diseases are functionally illiterate and almost a quarter of all adult Americans are as Grade of 5 education level or its below.

Unfortunately, notes related to health information are written for individuals with literacy level of 10 or above. It is estimated that weakness of literacy in hygienic skills is increasing and annual 73 billion Dollar has cost on healthcare. In addition results show that three quarters of medication without reading the brochures pour in the trash bags and half of all patients keep them to use it in the future (10).

Rate of patient compliance in taking medication and treatment is another factor that contributes to incidence of medication errors. Results of a study showed that there is 76 percent difference between patients who certainly are collaborating in treatment and principled use of drug with those who record only the treatment and use of drug in a piece of paper. Another study showed that lack of cooperation of patient with hygiene team plays a role in 33% of readmission of patients in the hospital (11).

Health care policy makers, community members and patients need to appreciate this theme that the medical team helps to meet the growing needs of patients on services related to drug use and health promotion of society. They are available professionals that not only as a distributor of medical but also as officials must be identified who are responsible for train, advice and monitoring the drug treatment of patients (12-14).

In addition, it is necessary to contain health care system, pharmacists' partnerships with other health care team members to sharing clinical data and medical records on the same activity. This cooperation and access to resources can contribute to the advancement of patient care, is strengthen patients' perception of the appropriate use of medicines, increase relationship with the drug treatment and improve detection of adverse drug events (15-17).

MATERIALS AND METHODS

This study was amed to manifest the pharmaceutical care of heart patients admitted to hospitals of Shahid Beheshti University of Medical Sciences". The main research questions were as follows:" How is the situation of pharmaceutical Care for patients that?" and "Which is the determinants of pharmaceutical Care in the patients? "Grounded Strauss and Corbin in 1998 method were used to do this.

_____

Participants initially based on purposeful sampling with maximum diversity (age, education, marital status, type of job and heart disease) were selected from heart patients admitted to hospitals of Shahid Beheshti University of Medical Sciences, doctors, nurses and pharmacists and research environment was appropriate with qualitative researches in the field of natural participants, participant selection process continued for a year and then no new data was obtained, in other words, data were reached to saturation.

Semi-structured interviews were conducted to do this research, interviews with huge questions, general and open about the pharmaceutical Care of patient, such as: How is the status of pharmaceutical Care of heart disease? What are the determinants of pharmaceutical Care in the heart patients? What do you know about your pharmaceutical Care? What are ways to improve pharmaceutical Care? It is started .

Researcher for make appropriate relation and to create a sense of trust and comfort in addition to the participants prior coordination, introduced himself and with the expression of objectives of the study and ensure the confidentiality of information was allowed of them to record the interview. Then demographic information such as name, age, occupation, marital status, and call number was asked of them for next possible appointments. Also when the interview was stopped when the interviewee was feeling tired**.**

Investigator during interviews with a focus on the participants' statements, questions needed such as what do you think of something else? Do you think that is something else that to be not said? To be raised. Duration of the interviews, depending on the circumstances was between 60 to 90 minutes. After doing each interview, and after repeated listening, content of the interviews by considering non-verbal communication, implementation and were analyzed at the same time.

Interviews whit data collection simultaneously and by MAXQDA software prescribed thoroughly and accurate and at the same time was done initial coding. Researcher in initial coding line by line prescribed or typed data reviewed as units of analysis and semantic units and then determine to whom the Code. Transcription and initially review of data from interview with participants help a lot to researchers in collecting data that**.**

To select titled of codes were used from the words and phrases that were raised by the participants. Then typed text of interviews with available code available to experts to their opinion about the encoding process and also can be determined the confirmation and impression of the researcher about statements of the interviewee .As well as of field notes was used that are a valid tools to generate data.

Four criteria of credibility, replication ability, and dependability and Confirm ability were used to evaluate the data. The replication ability means transferring and generalization of the results of the study to groups and similar situations, the group of researchers was divided into two parts and data were compared and examined separately. For dependability was stressed on the being identical of researchers' experiences and external monitoring.

In confirm ability the standpoint of the researchers was used for the reliability of qualitative information, as well to increase data credibility and authentication from data analysis by collection process of information simultaneously was used of the use of key informants, review by observers, and review of information by participants**.**

The inclusion criteria forthe participants were as follows: Participants of patients with heart problems with a history of more than one year and with a definite diagnosis were selected by a doctor. Patients were hospitalized in one of the hospitals of Shahid Beheshti University of Medical Sciences. Patients with good general condition, without the risk of chronic complications of heart disease or other diseases, with 35-60 years of age and able to talk and communicate had primary school and wish to participate in the study, all participants also have a minimum one year work experience they were working in a hospital and wish to participate in the study.

Unwillingness of patients to continue to cooperate, withdrew from the study during the study, the need for nursing care in acute disease effect also constituted exclusion criteria of the study .

RESULTS

Participants included 20 patients (seven cardiovascular patients hospitalized in hospitals of Chabahar, Shahid Beheshti Medical University, four cardiologists, four nurses working at cardiology ward, and five pharmacists. Eight people of them were females and the rest were males. Seventeen people of them were married, three remaining were single. Among the patients, two patients were retired, two housewives, and the rest were employees. Nine people of participants were with doctoral degree, 8 patients with master's degree, and the remaining 8 patients were with diploma degree and under diploma.

_____

The smallest unit was broken in data open coding phase. Analysis of the data of first interview was done precisely and word by word. The data were analyzed in terms of similarities and differences. Researcher re-examined the data line-by-line using open coding system, identified its processes and then coded every word, phrase, or sentence. Additionally, the researcher used in the required parts. Writing the memos was began from the first session and continued throughout. Memos are relatively basic and primary introduction of thought that are considered part of the analysis of qualitative work. They advance analysis, and are important as data collection during the research process (18).

The data was broken down into individual segments with open coding. Data was re-examined carefully to obtain the similarities and the differences. Questions in the field of the phenomena whether the data indicate it was raised. Therefore, conceptualization of data that was done was the first part of analysis. When data were identified in a particular phenomenon, the concepts were classified on its axis. This issue caused the codes of a subject placed in a specific class, and a conceptual name to be considered for that particular class (19).

Codes were regularly extracted in term of phrases or sentences from interviews' text. It was tried at this stage to use their same words in order to prevent from early interpretation of participants' words. At this stage, all words and paragraphs of interviews' text and notes were carefully inspected to achieve general and comprehensive image about what the data is about and what is about to occur.

Among 20 conducted interviews, the first categorization of codes was begun from the first interview. In the following interviews, each interview codes were compared with each other and with other previous interviews' codes to identify the similarities and differences between them. Then codes were put in a particular class based on similarities had with each other. 4508 primary codes were extracted from the total conducted interviews.

At the next stage, codes became more abstract based on similarities and common points, and the first categorization was conducted from codes. Similar codes were overlapped. A total of 795 primary overlapped codes were obtained at the end of this stage. Then primary overlapped codes were placed in the 152 categories. These categories were more abstract than the first level or primary codes and were ordered and arranged by the researcher. Then the primary data were broken down and connected again to each other in the new format (20).

Axial Coding

In axial coding the data were re-examined, the relationship between Classes was found, and the axial idea was also specified in the categories. Axial coding is a trend to relate sub-categories to a class. A flow of a deductive thinking is occurred in this regard. At this stage, the categories with common features are placed in a class, and the data become more abstract. Continuous data comparison is also continued in this flow. Primary codes and categories that had been obtained in open coding were compared with each other. The codes that were similar to each other were merged in each other and created new categories (18).

In the present study similar sub-categories with common characteristics formed the secondary categories. Then secondary categories that were around an axis formed the axial categories. Thus similar categories together constitute a cluster. The main categories were named with more abstract concept based on the contents of the concepts within them.

Table 1 shows axial categories and their sub-categories that are related to axial coding stage.

_____

Table 1. Axial categories and their sub-categories of "pharmaceutical Care process"

Axial Class	Sub- class
Inadequate collective responsibility	non-aligned cooperation Inconsistent performance Non-cooperative care
Prioritizing treatment over prevention	Focus on doctor Lack of training Too high budget of treatment Defects in a culture of prevention
Non patient- centered perspective	Maintaining Medical Power Disease trends to unequal relationship Minimal patient participation in treatment team Defect to perform the duties of the treatment team
Pharmaceutical Care with insufficient effectiveness	Surrounded incomplete of doctor, to medical treatment Trimmed role of the pharmacist, in pharmaceutical Care non-empathic Communicating Undefined visits
Inefficient management	Passive management Defect in implementing the rules and codified policies Dissatisfaction of patients, of process of treatment Lack of having Priority community oriented pharmacy

According to this process, 48 categories merged in the previous stage were placed in 19 sub-categories, and finally in the five axial categories. Focus on causal conditions of the phenomena -the background in which the phenomenon is occurred-, strategies used to control the phenomenon, and existing obstacles and facilities created a process lies within the data. These have been shown in the table below.

Table 2. Core Classes

Axial codes	Paradigm model
Inadequate collective responsibility	Terms of causal
Prioritizing treatment over prevention	Background
Non patient- centered perspective	Deterrent
Pharmaceutical Care, with inadequate effectiveness	Consequence
Inefficient management	Strategy

It is necessary in Grounded theory to specify the main concern of participants in the research based on the data before the main variable to be introduced. Then the main variable is specified because it connects all the variables or categories with this concern. The main and common concern of the participants in this research was inadequate collective responsibility.

Selective Code
Selective Code is a process in which the findings are combined and re-defined. At this stage, finding a central variable is the main goal (19). This was done through raising this question, what is happening within the data? In addition, at the time of selective coding for a decision on the structure of these categories, questions were raised like that; what is shown by event? What are the characteristics of this category? Under what conditions they are occurred? Finally emerging categories were compared with each other.

The main variable is the same main phenomenon that other variables are around it, and form a whole, are repeated regularly in the data, link data together, explain scatterings in the data due to being a central phenomenon, imply on more general subject, as well as provide a possibility of maximum change and analysis (19, 20). Therefore, stages of explaining the story and the explanation of final theory were done to find and select a central variable. Finally axial category of "inefficient management" was introduced as a central variable.

With the advancement of medical and health services, the necessary to optimize the management of patient care is under consideration. One of the important issues about patients is pharmaceutical Care for him as part of care programs in the treatment process aimed at improving the healing. Performing pharmaceutical Care of patients regardless of their correct management is not possible (21). Desirable management is dynamic, active and pioneer management (22).

But inefficient management is affected, static, and incident-oriented management (23). Pharmaceutical Care Management includes provision of holistic care services to patients, satisfaction of patients and clients in order to meet their needs. Furthermore, other considerable points can be raised as the inhibiting factors by the health care team to perform their assigned duties. Dissatisfied health care team, lack of force in various sectors, high workload, time limits, and so on are some of the things that are rooted in mismanagement (24).

_____

Proper pharmaceutical Care management of patient requires strong and efficient management. Participatory management can be mentioned among this management. Participatory management means the involvement of the right people at the right time to do the right work. Participatory management emphasizes on the principle of involving a large number of staff in the vital processes of an organization. Today the staffs are considered as facilitators of customer satisfaction. A manager who manages staffs in the best way can improve an organization (25).

In health systems, participatory management causes benefit for patients because in this way the patient is considered a customer. A profit obtained from organizational performance will be bringing health to the patients. Therefore, patients have a right to be cared by professional staffs with relevant and up to date skills and expertise. Participation of patients can also act better as a tool for learning to management. This is because patient is also considered one of the team care members participates in his care (26).

Inefficient management variable is an abstract conception that was raised in all categories according to the participants' experiences. This indicates the importance of the issue at different stages of pharmaceutical Care. The axial category of inefficient management has been constituted by inefficient management, defect in codified regulations and policies' enforcement, dissatisfaction of patients of the treatment process, lack of priority of based community pharmacist. Dinesh in his research in 2010 in line with the present research concluded that one of the main reasons for the failure of health care programs of improper and incorrect management are those delay the health of patients (27).

In addition, a qualitative study conducted by Case (2012) supports our findings. In the study of Case, the researcher concluded if the codified rules in the state are not fulfilled, patients will encounter with numerous problems (28). In addition Bryst et al. (2013) in their meta-analysis study on patients' satisfaction, concluded that care process due to its defects may diverted a large number of patients from continuing treatment, and lead them to self-medicate (29). Ogogobola research in 2011 is consistent with the present research. In Ogogobola research a large number of pharmacist participants believed that if health pharmacists involved in the care category, the first type of prevention become more important in the community and people will less become ill (30).

REFERENCES

[1] Shah A. Pharmacy intervention in the medication-use process: the role of pharmacists in improving patient safety. The Hague (Netherlands): International Pharmaceutical Federation; **2009**.
[2]   CP. Consumers, the health system and health literacy: Taking action to improve safety and quality. School of Pharmacy, University of North Carolina, Chapel Hill, Common wealth of Australia   **2013**
[3] Butler LM, Devraj R, Santanello C. Design and evaluation of health literacy instructional video for pharmacy students. **2013**.
[4] Grissinger MC, Globus NJ, Fricker MP. The role of managed care pharmacy in reducing medication errors. *Journal of Managed Care Pharmacy.* **2003**;9(1):62-5.
[5] Kirt JK, Futrell D, Devora T. Connecting pharmacy and literacy: the North Carolina medication information literacy project. *American Journal of Pharmaceutical Education.* **2000**;64(3):277.
[6] Beattie M, Lauder W, Atherton I, Murphy DJ. Instruments to measure patient experience of health care quality in hospitals: a systematic review protocol. *Systematic reviews.* **2014**;3(1):1.
[7] Kripalani S, Weiss BD. Teaching about health literacy and clear communication. *Journal of General Internal Medicine.* **2006**;21(8):888-90.
[8] Weiss BD. Help patients understand. 2007.
[9] Shannah Koss P, Koss Health Literacy: The Pathway to Patient Engagement and Cost-Effective Care. wwwmaximuscom MAXIMUS, Inc Center for Health Literacy. **2010**: www.accp.org.
[10] Moczygemba LR, Barner JC, Brown CM, Lawson KA, Gabrillo ER, Godley P, et al. Patient satisfaction with a pharmacist-provided telephone medication therapy management program. Research in Social and Administrative Pharmacy. **2010**;6(2):143-54.
[11] Davis TC, Wolf MS, Bass PF, Thompson JA, Tilson HH, Neuberger M, et al. Literacy and misunderstanding prescription drug labels. *Annals of Internal Medicine.* **2006**;145(12):887-94.
[12] Root R, Phelps P, Brummel A, Else C. Implementing a pharmacist-led medication management pilot to improve care transitions. **2012**.

_____

[13] Statistics NCfH, Research NCfHS. Health, United States: US Department of Health and Human Services, Public Health Service, Office of Health Research, Statistics, and Technology, National Center for Health Statistics, National Center for Health Services Research; **1978**.

[14] Health UDo, Services H. Office of the Assistant Secretary for Planning and Evaluation. Trends in the Well-Being of America's Children and Youth **2001**. **2002**.

[15] Council AP. The Australian Pharmacy Council Accreditation Standards Version 1.0. Canberra: Australian Pharmacy Council. **2009**.

[16] Council AP. Accreditation Standards for Pharmacy Programs in Australia and New Zealand. Australian Pharmacy Council Ltd. **2012**.

[17] Moynihan R, Bero L, Ross-Degnan D, Henry D, Lee K, Watkins J, et al. Coverage by the news media of the benefits and risks of medications. *New England Journal of Medicine.* **2000**;342(22):1645-50.

[18] Polit DF, Beck CT. Nursing research: Generating and assessing evidence for nursing practice: Lippincott Williams & Wilkins; **2008**.

[19] Corbin J, Strauss A. Basics of qualitative research: Techniques and procedures for developing grounded theory: Sage publications; **2014**.

[20] Morse JM. Qualitative research methods for health professionals **1995**.

[21] Rocque R, Leanza Y. A Systematic Review of Patients' Experiences in Communicating with Primary Care Physicians: Intercultural Encounters and a Balance between Vulnerability and Integrity. *PloS one.* **2015**;10(10):e0139577.

[22] Silver MP. Patient perspectives on online health information and communication with doctors: a qualitative study of patients 50 years old and over. *Journal of medical Internet research.* **2015**;17(1).

[23] Bergman AA, Matthias MS, Coffing JM, Krebs EE. Contrasting tensions between patients and PCPs in chronic pain management: A qualitative study. *Pain Medicine.* **2013**;14(11):1689-97.

[24] Kuchibanda K, Mayo AW. Public Health Risks from Mismanagement of Healthcare Wastes in Shinyanga Municipality Health Facilities, Tanzania. *The Scientific World Journal.* **2015**;2015.

[25] Murtaza G, Kousar R, Azhar S, Khan SA, Mahmood Q. What Do the Hospital Pharmacists Think about the Quality of Pharmaceutical Care Services in a Pakistani Province? A Mixed Methodology Study. B*ioMed research international.* **2015**;2015.

[26] Azhar S, Hassali MA, Taha A, Khan SA, Murtaza G, Hussain I. Evaluation of the perception of community pharmacists regarding their role in Pakistan's healthcare system: a qualitative approach. *Tropical Journal of Pharmaceutical Research.* **2013**;12(4):635-9.

[27] Dinesh M, Geetha K, Vaishnavi V, Kale R, Murthy VK. Ecofriendly treatment of biomedical wastes using epigeic earthworms. *Journal of ISHWM.* **2010**;9(1):5-20.

[28] Kiss L, Schraiber LB, Heise L, Zimmerman C, Gouveia N, Watts C. Gender-based violence and socioeconomic inequalities: Does living in more deprived neighbourhoods increase women's risk of intimate partner violence? *Social science & medicine.* **2012**;74(8):1172-9.

[29] Brisset C, Leanza Y, Laforest K. Working with interpreters in health care: a systematic review and meta-ethnography of qualitative studies. *Patient Education and Counseling.* **2013**;91(2):131-40.

[30] Oguegbulu N, Uche I. Patient-oriented re-professionalization of pharmacy practice; a sine qua non for the globally evolving collaborative practice of pharmaceutical medicine. *International Journal of Pharmaceutical Sciences.* **2011**;3:72-92.