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ORIGINAL RESEARCH

Data analysis and the relationship between doctors and patients with type-2 diabetes in the treatment process

Mehdi Mojarrad[1], Nosrat Riahinia[2*], Ali Azimi[3], Parisa Amiri[4], Farzad Hadaegh[5]

1. *PhD Student, Department Information Science and Knowledge Studies, Kharazmi University, Tehran, Iran*
2. *Professor of Information Science and Knowledge Studies, Department Information Science and Knowledge Studies, Kharazmi University, Tehran, Iran*
3. *Assistant Professor of Information Science and Knowledge Studies, Department of Information Science and Knowledge Studies, Kharazmi University, Tehran, Iran*
4. *Professor of Health Education & Promotion, Research Center for Social Determinants of Health, Research Institute for Endocrine Sciences, Shahid Beheshti University of Medical Sciences Tehran, Iran*
5. *Professor of Internal Medicine and Endocrinology, Prevention of Metabolic Disorders Research Center, Research Institute for Endocrine Sciences, Shahid Beheshti University of Medical Sciences, Tehran, Iran*

*Corresponding Author:
Address: Department Information Science and Knowledge Studies, Kharazmi University, Tehran, Iran.
Email: sara_purriahi@yahoo.com
ORCID: 0000-0003-2609-6330

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Abstract

Background & Objective: Doctor-patient relationship plays an important role in adherence of patients to treatment instructions. This study tries to examine the relationship between physicians and patients with type 2 diabetes in the treatment process by the grounded theory.

Materials and Methods: Eleven physicians and 9 diabetic patients in both sexes were selected from among all type 2 diabetic patients referred to physicians' offices in Shahid Beheshti University of Medical Sciences and Health Services. A semi-designed interview was used to gather information.

Results: The factor influencing the physician's lived experiences in dealing with the patient and the patient's lived experiences in dealing with the physician was named as the "physician-patient discourse" factor. This factor included 9 categories in 2 central codes "physician-centered" and "patient-centered" in the physician's lived experiences with the patient and 4 categories in 2 central codes "awareness" and "confidence-building" in the patient's lived experiences in dealing with the physician.

Conclusion: A discourse in which the physician allocates adequate time to efficiently convey training and information, and to take a complete history of the patient, and to establish an effective, friendly, and respectful relationship ultimately lead to the patient's trust. These factors can persuade the patient to adherence to the prescribed treatment.

Keywords: Grounded theory physician, Diabetes, Health education, Self-care

Introduction

Chronic diseases, mainly cardiovascular diseases, chronic respiratory diseases and diabetes, are serious threats to health in developing countries. Today, death and disability caused by chronic diseases have surpassed infectious diseases and accidents. In Iran, the cause of 70% of deaths are chronic diseases (1).

One of the health problems of today's world is diabetes. Today, the prevalence of diabetes has increased. According to the available statistics, this disease is increasing in the world. Therefore, it is estimated that the number of people with diabetes will increase from 171 million people to 366 million people between 2000 and 2030 (2). The growth of diabetes in today's world is equal to 24% per year (3). The prevalence of diabetes in our country has also been on the rise. According to the website of the International Prevention and Control Foundation, 7.8% of the country's 25-60 year-old population has diabetes, while half of people with diabetes are unaware of their disease (4). With the progress of diabetes, a wide range of irreversible complications arises in the patient. Although there is no definitive treatment for this disease, it is possible to prevent the debilitating complications of diabetes. The most important strategy for managing this disease will be to control blood sugar within the normal range. Nevertheless, one of the major problems in the optimal control of diabetes is patients' non-compliance with treatment instructions, in which the doctor-patient relationship plays an important role (5). The basis of this relationship is the doctor's interview with the patient, which medical diagnoses and decisions are formed based on the information obtained from it (6-7). The relationship is the transmission of information from the sender to the receiver in a way that is understandable for the parties. Today, communication skills are an integral part of the clinical activities of doctors (5). The relationship between the doctor and the patient is established based on the patient's need to receive services (8) and the exchange of information based on the real information needs of the patient is an important part of these services that must be conveyed to the patient by the doctor and medical staff (9). Providing these services as correctly as possible leads to the satisfaction of the patient, and the patient's satisfaction will lead to more compliance with the orders and optimal control of the disease (8). The research results showed that the positive relationship between the patient and the caregiver, especially when the care is provided in a patient-centered manner, is one of the most important related and determining factors in adherence to treatment (10). Also, the quality of communication and trust between health care providers and patients is related to treatment adherence and increases its level (11). Prescribing health information or information therapy is actually the possibility of providing the right information to the patient at the right time. One of the key ways of prescribing health information is the doctor-patient interview. Therefore, with the approach of information therapy, the information gap between the doctor and the patient is revealed, and the doctor can help the patient to play a role in the treatment process by providing the best information about different treatment methods and their advantages and disadvantages, as well as how to self-care. Make a decision to improve your health, prevent illness, treat illness and injuries, and rehabilitate yourself. In other words, the patient made the necessary use of his knowledge and skills to perform the recommended behaviors. Therefore, patients should not only be able to obtain sufficient information about their disease and how to perform the necessary care, but also should be able to use their knowledge in different situations and conditions. In fact, for self-care and disease management, patients need to receive correct and reliable information to understand their condition and also cooperate in self-care programs. Throughout history, doctors have been the most important source of health and medical information. Currently, according to the rising trend of diabetes prevalence in the world and in the country, identifying factors affecting the improvement of doctor-patient relationship and finally improving the treatment process and self-management of patients with diabetes is one of the research requirements. Therefore, it prompted the researchers to investigate the data analysis of the lived experience foundation and the relationship between

doctors and patients with type-2 diabetes in the treatment process.

Considering that the current research includes the main variable of doctor-patient communication, an effort was made to look comprehensively at the latest researches conducted in these two fields. A brief review of the history related to the relationship between the doctor and the patient shows that following the prescribed programs is an important challenge in patients with chronic diseases, especially diabetes. Zahidnejad et al studied 115 people from Mitlayan with diabetes in Tabriz city in a research aimed at investigating the relationship between health control center, memory error and doctor-patient relationship with treatment adherence. In this quantitative research, information related to doctor-patient relationship was collected using the Patient-Doctor Relationship Questionnaire (PDRQ). According to the results of the present study, diabetic patients consider powerful people such as their doctors responsible for their health, they believe in their own role in controlling their health, they also have a good relationship with their doctors, have less memory errors, and show more adherence to treatment (12).

Another study was conducted in Isfahan and on 362 patients with diabetes, in accordance with the hypothesis that a favorable relationship between doctor and patient and providing the most correct services leads to control and improvement of the disease. In this descriptive-analytical study, the Lango Diabetic Patients Information Seeking Behavior Questionnaire was used. The findings indicated the effect of the doctor-patient relationship on the health information seeking behavior of the studied patients. Patients' point of view, there was a significant difference between the information-seeking behavior of people who rely on their doctor and people who do not rely on a doctor, in the aspect of receiving information. In examining the relationship between satisfaction with the transfer of medical information to the patient and the health information seeking behavior of patients, there was a significant difference only between the component of obtaining information from traditional media in satisfied and dissatisfied people with the method of transferring information from the doctor (13). Health literacy is defined as cognitive and social skills that determine the motivation and ability of people to search, understand and apply information that leads to maintaining and improving their health. Bastani et al.'s research on 200 samples of chronic diseases in Shiraz also indicated the health level of patients as a result of doctor-patient interaction (14).

It seems that internal researches to evaluate the relationship and interaction between doctor and patient are interested in using questionnaire-based studies, such studies evaluate limited items and dimensions in order to measure this relationship and interaction. Therefore, the void of qualitative studies to identify the minor and effective dimensions and components in the relationship between doctor and patient is felt more than ever. Also, referring to those qualitative researches abroad that target the relationship between doctor and patient due to the contrast of the cultural context of these societies with our country, as well as the level of productivity of patients from information sources other than the doctor and subsequently the higher level of health literacy is an obstacle. The results of these researches will be used in the country and for patients, especially those with diabetes.

Materials and Methods

In this study, in order to communicate between doctors and patients with type-2 diabetes in the treatment process, Grounded Theory data analysis method was used. The participants in this qualitative research were selected from among all type 2 diabetic patients who referred to the offices of endocrinologists and endocrinologists in Shahid Beheshti University of Medical Sciences as the research population. Sampling was done in a targeted way. The number of samples was 20, of which 11 were medical specialists and 9 were patients. The participants in this study were primarily interested in participating in the research and consisted of both sexes. In the present study, semi-structured interviews were used to collect the required information. According to the factors and environmental conditions and the willingness

of the participants, the researcher has conducted interviews and recorded them in detail. Data collection continued until the end of the research. Constant comparative analysis was used to analyze the data, and the data were summarized, coded and analyzed at the same time. In the open coding phase of this study, after conducting each interview, the tapes were listened to and taken down word by word and often analyzed before conducting the next interview or group discussion. In this way, each interview guided the next interview. After transcribing each interview, the audio tapes were listened again and notes were written on the margins of the transcripts regarding the key points of the participants' speech as well as the researcher's thoughts and opinions regarding their statements. Data analysis was done using line-by-line analysis method. In this way, the texts of each interview were read several times and identified in the form of conceptual codes or direct quotations (similar to what the participants said). The given coded versions were reviewed and coded again with a time interval of several days. The results of two codings were compared and the coordination of the codes and as a result the stability and coordination of the data were ensured. In addition, a sample of the codes was provided to the participants and their acceptability was confirmed. In the central coding phase of the present study, the codes that had similar meanings were placed in one group. In this stage, the most general classification was made and in the next stages it included sub-classes. At this stage, attention has been paid to situations, contexts, influencing variables, action and response strategies, consequences and imagined results. After axial coding, the researcher modified, completed and developed the classes in a cyclical process including breaking, comparing and reclassifying. In this stage, new categories were formed with a name and a concept that is indicative of that group in the form of subclasses. During this stage, the researcher started to integrate and modify the concepts through the repeated review of primary data, notes and charts and through continuous comparative analysis and unifying and discovering the connections between the main and secondary classes obtained, the codes and developed theoretical concepts. The above actions made it possible for the researcher to integrate the information obtained in the open and central coding stages and use them to select the central category. In this way, the researcher did theoretical coding and tried to move from descriptive statements to theoretical statements and structures and abstract thinking. For this purpose, the researcher examined all the possibilities that could affect the process of data analysis and the findings obtained from them. By establishing a follow up with the participants and with the research environment, providing information related to the objectives of the project to the participants in order to gain their trust during the interviews, continuous review of the data, audio recording and implementation and analysis of the data immediately after the interview. The feedback was used for subsequent interviews to increase the acceptability of the data. Validity of the data was tested by review by the participants and supervisors and using their corrective comments.

Results

The data of this study were collected through semi-structured open interviews with 11 diabetes doctors and endocrinologists and 9 patients with diabetes. The interview time was between 45 and 60 minutes for doctors and between 25 and 45 minutes for patients. The main variable that affects the doctor's lived experiences in dealing with the patient and the patient's lived experiences in dealing with the doctor was named as the "doctor-patient dialogue" factor. This factor means that the dialogue between the doctor and the patient determines and promotes the treatment (both in the type of prescription by the doctor and in the follow-up of the treatment by the patient) in people with diabetes. This factor, which is the main variable, includes 9 classes in 2 central codes "doctor-centered" and "patient-centered" in the lived experiences of the doctor in dealing with the patient and 4 classes in 2 central codes "awareness" and "trust-building" in the lived experiences of the patient in Confrontation with the doctor. Also, in the lived experiences of the doctor in the patients' compliance with the 6-level treatment protocols in 2 core codes "doctor-centered" and "patient-centered" and also in the lived experiences of the patient in facing the 4-level

treatment protocols in the 2 core codes "awareness" and "trust building" was achieved. The codes extracted from the doctors' interviews were placed in 9 groups in the free coding stage: 1- acceptance of the patient's treatment, 2- the level of literacy and awareness of the patient, 3- the age of the patient, 4- the time of visiting and talking to the patient, 5- the method of awareness Informing the patient, 6- Gender of the patient, 7- Financial status of the patient, 8- Occupation of the patient, 9- Referral of the patient to other specialists.

The doctors present in the study said: "There is a group of people who accept the treatment very well. They do what we tell them, and we have less problems with them, but in this group of people, there are also people who buy expensive medications are not possible for them and we proceed according to the guidelines. There are also some people who are very resistant to treatment, especially if we want to start injecting treatment for them. I saw all kinds of people from all walks of life. My patient was illiterate and he was so careful in taking the medicine that I prescribed for him that I have not seen this case many times in a literate group that has a doctorate for example. Do you understand that middle-aged or old people don't say anything because they say that we are old and we already have this. People who are early middle-aged like 35-36 years old or over 40 years old are hard to work with. The most common word they say is that I get angry and my blood sugar is high. My blood sugar is not high. When I eat greedily, my sugar rises. Also, the free codes extracted from patient interviews were divided into 4 groups: 1- doctor's recommendation to modify lifestyle, 2- time allocated to visit the patient, 3- gaining knowledge about symptoms, 4- complications and progression of diabetes, trust to the doctor. A part of the patients' interviews is as follows: "Nothing...nothing...that is, he just took my notebook and test, prescribed metformin and told me to go and come back in three months. That's it. I said Doctor, what should I do now? Exercise and food habits. He said, "go to the nutrition room, they will tell you. I swear, it didn't last even 4 minutes. Then how can I trust this doctor to go back to him?"

Discussion

As mentioned in the results section, the perceptions and opinions of physicians and patients with diabetes were examined from their living experiences in the face of each other and adherence to therapeutic protocols. The main variable that influenced the treatment process was called the "physician-patient discourse" factor. Physician's life experience in dealing with the patient and adherence to therapeutic protocols The findings of the present study showed that physicians believe that the method of informing the patient should be based on the amount of information and information the patient has. Physicians usually provide the description as beginner and understandable, and improve their level of explanation based on the reactions they receive from the patient. The manner of awareness can vary depending on the age and level of awareness and education. Patients who want to know about their illness often expect a physician to provide them with this information. However, they are not always successful in obtaining the information they need. The major obstacles to the transfer of information from the physician to the patient are: physician time constraints, poor communication skills, disregard for the patient's need for information, and differences in physician and patient linguistic concepts (the physician uses specialized words that are not understandable to the patient (15). Also, in the opinion of physicians, inadequate answering the patient's questions can cause them to be frustrated and discourage patients from continuing the treatment process. Doctors say, if at the beginning of diabetes, the patient's explanations and awareness occur well and in a timely manner, leading patients to continue their treatment for treatments such as insulin injections and ... However, despite the physicians' belief in improving the patient's treatment process with more time to examine and answer their questions, they acknowledged that they could not spend more than 15 minutes per visit given the conditions in Iran. In the present study, it was shown that from the physicians' point of view, patients are divided into three categories: a group that accepts treatments well and has no problems; 2. A group that resist prescribed treatment (especially about the onset of insulin

injection); And 3- A group that changes the dose of medication with their own opinion. Doctors usually prefer the first group because they can better match the changes made to the patient with the type of treatment they have received and have a better diagnosis and prescription. In the meantime, some patients are constantly confused by the lack of follow-up treatment by a single physician. However, the physician-patient relationship seems to play a key role in accepting treatment and following the prescription of a physician (16). The relationship is the transfer of information from the sender to the receiver so that it is understandable to both. Communicating a human ability that has become a communication skills with considerable training and these skills are an integral part of physicians' clinical activities (17). The results showed that the positive relationship between the patient and the caregiver, especially when providing patient-centered care, is one of the most important and determining factors of adherence to treatment (18). In another study, the results showed that the quality of relationship and trust between health care providers and the patient had a relationship. He adds (19). Stavropoulou in a 2010 study conducted on 45,700 patients from across Europe in a study called The Cure and Relationship of the Patient found that people's perception of how to treat and how to treat is better than prescribed treatment and medication, and can predict patients (20). In this study, it was shown that from the physicians' point of view, the high level of education of the patient, if not in the medical sciences, is not very effective in his level of awareness. And in general, the level of literacy and education was not very relevant to the level of patient awareness of diabetes. The findings of this study were consistent with the findings of Raisi et al. (2014), which showed that the level of functional health literacy, which is more related to reading and writing skills, was not related to the self-care of patients with type 2 diabetes. Some patients were satisfied with the physician's information, and some acknowledged that the doctor had only written for them and had completed the visit without any explanation. Patients tend to give the doctor enough time to ask them all their questions. In this regard, the findings of Zare Farashbandi et al. In 2015 showed that patients who talk more to their physician are more likely to search for information than those who do not. These eager patients seek information from various sources of information and channels, and physicians are one of those sources. Therefore, the rate of questioning by the patient's physician is that the patient is willing to find out information about his or her illness (13). Trusting a physician may be the most important issue for a patient who can give his or her treatment to a physician who trusts him or her. The results of this study showed that things like patient respect, physician's sympathy for the patient, physician experience, and physician's response to emergency cases by telephone, etc. can lead to patient confidence. This finding is consistent with the results of other studies in this area and shows; Patients who are more confident in physicians are more efficient and expect better results from treatment recommendations. Trust in treatment recommendations is also a facilitator in completing patient care and self-management activities (24-22). Conclusion Based on the above, it can be seen that there is a close relationship between the classes. It seems that the physicians have enough time to visit the patient and answer patiently questions and clear the path to the patient in their minds and to raise the effects of the disease and try to improve the patient's lifestyle can clearly increase the patient's adherence to treatments and will be very effective in controlling diabetes and its complications. According to the results of this study, a theory was developed that "physician-patient discourse" will play a key role in following the treatment process and adherence to prescribed treatments. In this study, the relationship between physician and patient was examined and the information collected was that the discourse between physician and patient could be the key to following treatment in patients with diabetes. A discourse in which the physician devotes adequate time to efficient transfer of training and information on the definition of diabetes, symptoms, complications, patient pathway, side effects of medication, cause of change of medication or dose, and complete patient history (age, occupation, literacy, financial status, etc.) for appropriate medication; As well as establishing an effective, friendly and

respectful relationship, it will ultimately lead to the patient's trust in the physician and can convince the patient to follow the treatment path and adhere to the prescribed treatment.

Conflict of interest

Author declares no conflict of interest.

References:

1. Mirzazadeh A, Baradaran HR, Haghdoost AA, Salari P. Related factors to disparity of diabetes care in Iran. MedSci Monit 2009; 15(5): 32-6.
2. Tol A, Sharifirad Gh, Eslami A, Shojaeizade D, Alhani F, Mohajeritehrani M. [Analysis of Some Predicting Factors of Quality of Life among Patients with Type 2 Diabetes]. Journal of Health System Research 2011; 7(6): 829-36. [Persian]
3. Bakhti M, Salehi M, Ashrafi M, Noushin D, Siavoush M. [Identification, Prevention, Control and Treatment of Diabetes]. Isfahan: Kyarad; 2010. [Persian]
4. International Foundation for the Prevention and Control of Diabetes. Diabet and Statistic. [Serial Online] 2013 [Cited 2013 Dec 15]; [1Screen] Available from: http://www.idpcf.com/Default.aspx?PageId=3a ZmYag4. [Persian]
5. Zahednezhad H, Poursharifi H, Babapour J. Relationship between health locusof control, slip memory and physician-patient relationship with adherence in type II diabetic patients. *J Shahid Sadoughi Univ Med Sci* 2012; 20(2): 249-258. [Persian]
6. Moein A, Anbari A. Patient- physician relations. *Daneshvar Pezeshki* 2010; 17(85): 71-80.
7. Tabeyi Z, Parsayi H. Physician and Patients Relationship. *Med Ethics J* 2008; 2(4): 107-120. [Persian]
8. Vahidi RG, Kaffashi S, Narimani MR, Sadeghifar J, Raadaadi M, Nazari A, et al. Correlation between knowledge and satisfaction of patients from patient- physician relationship. *Int J Health Promot Educ* 2013; 2(3): 66-73.
9. Lingyan Z, Jun W. Research on psychological factors which influence Doctor-Patient communications among outpatients. *J Med Coll PLA* 2013; 28(1): 20-28
10. Ciechanowski R, Russo J, Katon W, Von Kroff M, Ludman E. *Influence of patient attachment style on self care*, *out comes in diabetes.* Psychosom Med 2004;66(5): 720-8.
11. Murphy DA, Marelich WD, Hoffman D, Steers WN. *Predictors of antivetroviral adherence.* AIDS Care 2004; 16(4): 471-84
12. Zahednezhad H, Poursharifi HA, Babapour J. Relationship betweeh Health Locus of Control, slip Memory and Physician-Patient relationship with Adherence in Type II Diabetic Patients. Journal of Shahid Sadoughi University of Medical Sciences.2012; Vol. 20, No. 2, May-Jun . [Persian]
13. Zare-Farashbandi F, Lalazaryan A, Rahimi A, Hassanzadeh A. The effect of patient-physician relationship on health information seeking behavior of diabetic patients. Medical Ethics Journal. 2017 Jan 23;10(38):37-50. [Persian]
14. Bastani P, Hashemi N, Bahrami MA. Correlation of Patients' Health Literacy and Physician-Patient Interaction: A Case Study in Shahid Faghihi Hospital, Shiraz, 2019. Quarterly Journal of Management Strategies in Health System. 2019 Jun 17.[Persian]
15. Chen X, Siu LL .Impact of the media and the internet on oncology: survey of cancer patients and oncologists in Canada. J Clin Oncol 1003 ; 19:4291-4297
16. Sarafino A. *Health psychology*. New Jesey: John Wiley & Sons; 2011
17. Zali MK. The novel principle of doctor andpatient relationship. Tehran: Research Ethics; 2009. [Persian]

18. Ciechanowski R, Russo J, Katon W, Von Kroff M, Ludman E. *Influence of patient attachment style on self care*, *out comes in diabetes*. Psychosom Med 2004;66(5): 720-8.
19. Murphy DA, Marelich WD, Hoffman D, Steers WN. Predictors of antivetroviral adherence. AIDS Care 2004, 16 (4): 471-84
20. Stavropoulou C. Non adhevence to medication and doctorpatient relationship. J Patient Eduaction Counseling 2010; 10 (9): 698-705.
21. Reisi M, Mostafavi F, Javadzade H, Mahaki B, Tavassoli E, Sharifirad G. Communicative and critical health literacy and self-care behaviors in patients with type 2 diabetes. Iranian journal of Diabetes and Metabolism. 2015 Mar 10;14(3):199-208. [Persian]
22. Lee Y, Lin JL. The effects of trust in physician on self-efficacy, adherence and diabetes outcomes. Soc Sci Med 2013; 68(6): 1060-8.
23. Bonds DE, Camacho F, Bell RA, Duren-Winfield VT, Anderson RT, Goff DC. The association of patient trust and self-care among patients with diabetes mellitus. BMC Fam Pract 2004; 5:26.
24. Mirzaei M, Taylor R, Morrell S, Leeder SR. Predictors of blood pressure in a cohort of school-aged children. Eur J Cardiovasc Prev Rehabil 2007; 14(5): 624-9.