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Family Experience Caring for the Elderly with Diabetes Mellitus Using Sister Calista Roy's Adaptation Process Approach in Keling Village, Kepung District

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Abstract

Introduction: The family's experience when caring for elderly people with diabetes mellitus requires more attention and time in understanding the prognosis of the disease, so that families often respond incorrectly to the situation and do not know the physical and psychological changes experienced by elderly people with diabetes and the need for an adaptation process. The purpose of the study was to describe in detail the experience of families caring for the elderly with diabetes mellitus using a Sister Calista Roy adaptation process approach. **Methods:** This study uses a qualitative method with a phenomenological study approach. The population of this study were all families living at home with the elderly who suffer from diabetes mellitus in Keling Village, Kepung District with a total sample of 6 participants using purposive sampling technique. The data collection method used in-depth interview techniques. Data analysis technique using Interpretative Phenomenological Analysis. **Results:** The analysis of this study resulted in the theme of the process of family adaptation to care for the elderly with diabetes mellitus, including: 1) Family stimulation by understanding the condition of the disease and obligations in caring for the patient; 2) Family coping mechanisms by having a patient and calm attitude, and providing effective communication; 3) Family self-regulation by exercising self-control and caring attitude; 4) Family behavior by providing consultation on health services, meeting needs and managing stress. **Conclusions:** The process of family adaptation in caring for the elderly with diabetes mellitus by reflecting on the behavior of the adjustment process with various kinds of coping that is done to produce an adaptive or maladaptive behavior.

Keywords: Adaptation Process, Diabetes Mellitus, Elderly, Family Experience

Introduction

Diabetes mellitus is one of the most common chronic diseases in the world, occurring when insulin production in the pancreas is insufficient or when insulin cannot be used effectively by the body (International Diabetes Federation, 2019). Diabetes mellitus (DM) in the elderly with type 2 DM occurs due to insulin resistance where the body's cells cannot use

blood sugar properly due to disruption of the body's cell response to insulin (Febrinasari et.al, 2020). This condition has a fairly high impact on the level of pain and death, as well as reducing the quality of life. Further problems that arise in the elderly with DM can cause various psychiatric problems such as anxiety, depression and disturbed sleep quality (Fadhlia, & Sari, 2021).

According to the International Diabetes Federation in 2021, 537 million adults (aged 20 - 79 years) or 1 in 10 people live with diabetes worldwide (International Diabetes Federation, 2021). The predicted number of DM incidents continues to increase until it reaches 578 million in 2030 and 700 million in 2045 based on global diabetes cases in the world (Kemenkes RI, 2020). Indonesia has type II diabetes alert status because it ranks 7th out of 10 countries with the highest number of diabetes patients. Type II diabetes mellitus sufferers in the elderly in Indonesia reached 6.2%, which means that more than 10.8 million people suffer from diabetes as of 2020 (Magdalena & Arfifin, 2021). The results of a preliminary study in Keling Village, Kepung District showed data that the number of elderly people who had a history of diabetes mellitus was 60 elderly people with type 2 diabetes and 16 elderly people had been treated at the Kediri regional hospital.

Controlling blood sugar levels can be done with several things, namely regulating diet, physical activity, consuming medication regularly, regularly checking blood sugar levels and controlling stress and obesity (Dafriani, 2017). This must be well understood by patients and families with DM. Nurses as health workers must provide education to patients and families (Majid et al., 2019). The family plays a role in managing risk factors for diabetes mellitus in family members. Families can regulate diet and activity patterns as a form of prevention of risk factors and care for family members diagnosed with type 2 diabetes mellitus to prevent it from getting worse (Andriyanto, 2020).

The family's experience in caring for the elderly always contributes to diabetes therapy and caring for the elderly well, so that they are able to control blood sugar well and achieve optimal health and create a happy and productive old age (Hisni, 2019). This adaptation is really needed by families of elderly people with diabetes mellitus to adapt to their situation and prevent an increase in blood sugar when they leave the hospital and return to their home, environment and community. The family will provide the greatest motivation for diabetes mellitus sufferers to carry out therapy well, because the family is the closest person to the patient, so they have interdependent conditions. This interdependent condition causes family members to speed up the adaptation process of family members who suffer from diabetes mellitus (Apriliasanty et al., 2020).

Methods

This research design uses qualitative research with a phenomenological approach, because a researcher can explore individual experiences in depth, so that the information obtained by the researcher is more detailed in meeting the needs of the research objectives. The phenomenological study in this research was attempted to originate from the phenomenological research object regarding the family's experience of caring for the elderly with diabetes mellitus using the Sister Calista Roy adaptation process approach based on the personal experience of the closest family which is carried out every day when caring for the elderly.

The population in this study were all families living in the same house as elderly people suffering from diabetes mellitus in Keling Village, Kepung District. The sample for this study was a number of families who lived at home with elderly people suffering from diabetes mellitus who were responsible for family care for at least 1 year with a total of 6 participants, so the participants taken in this study were around 6 participants. These participants have the following criteria: 1) Elderly families suffering from diabetes mellitus who have full responsibility for family care for at least 1 year; 2) The closest family who lives with the elderly.

Data collection tools used in qualitative research include: 1) Mobile phone (recording), 2) Interview notebook, 3) Stationery, 4) In-depth interview format. The form of data collection in this research was in-depth interview techniques and field notes. Processing data that has been collected in the data collection stage, then processed, the aim is to simplify all the data collected, and present it in a good and neat arrangement. The data processing processes in this research are: 1) Comprehending; 2) Synthesizing; 3) Theorizing; 4) Recontextualizing. Then the data will be analyzed using Interpretative Phenomenological Analysis (IPA) with analysis stages: 1) Reading and re-reading; 2) Initial noting; 3) Developing emergent themes; 4) Searching for connections across Emergent themes; 5) Moving the next case. Meanwhile, data validity in this research uses data triangulation (sources and methods).

Results

This research was conducted in Keling Village, Kepung District, Kediri Regency. There were 6 participants who met the criteria, namely the client's family members who look after or care for the client after treatment at the hospital or after returning home from the hospital. The following are participant characteristics in table 1 below.

Table 1 Description of Participant Characteristics

Participant	Year	Gender	Education	Work	Marital Status
P1	29	Female	Senior Highschool	Housewife	Married
P2	42	Female	Senior Highschool	Housewife	Married
P3	38	Female	Elementary school	Housewife	Married
P4	30	Female	Senior Highschool	Trader	Married
P5	35	Female	Senior Highschool	Housewife	Married
P6	43	Female	Senior Highschool	Housewife	Married

Data collection using in-depth interviews was carried out with each participant for approximately 60 minutes starting from the introduction and the end of the interview. Collecting data from participants regarding experiences in caring for DM elderly people using the Sister Calysta Roy adaptation approach, including: family understanding of the meaning of elderly people suffering from diabetes mellitus, the role of the family in caring for elderly people with diabetes mellitus, the family adaptation process of caring for elderly people with diabetes mellitus and problems with the family adaptation process in caring for elderly with diabetes mellitus.

Results Analysis the Role of the Family in Caring for DM Elderly

The results of the interviews from the six participants in the form of keywords and categories and themes according to the first research objective are in the table below.

Table 2 Keywords and Categories Based on Interview Results Regarding the Role of the Family in Caring for DM Elderly

No	Keywords	Category
1	1) Self-care 2) Duty of care	Health care function
2	1) Control eating 2) Control drinking	Control eating and drinking patterns
3	1) Check blood sugar 2) Monitoring blood sugar	Control blood sugar
4	1) Communication and education 2) How to control blood sugar 3) Teach to control body weight 4) Explain the conditions	Health education
5	1) Medication administration 2) Take medication regularly	Medication
6	1) Hospital treatment 2) Community health center care 3) Consult a doctor 4) Consultation to nursing practice	Consult a health service

Based on the keywords and categories, table 2 above shows the theme that the role of the family is caring for the elderly with diabetes mellitus by carrying out health care functions in the form of: 1) Self-control by controlling food and drink, as well as checking blood sugar; 2) Health education about the impact of disease; 3) Treatment by administering blood sugar lowering medication; 4) Consultation with health services.

Results Analysis the Family Adaptation Process in Caring for DM Elderly

The results of the interviews from the six participants in the form of keywords and categories and themes according to the second research objective are in the table below.

Table 3 Keywords and Categories Based on Interview Results Regarding the Family Adaptation Process in Caring for DM Elderly

No	Keywords	Category
1	1) Stimulation of family knowledge 2) Understanding disease prognosis	Family stimulation
2	1) Be patient 2) Calm thinking 3) Critical thinking 4) Adjustment of family roles	Family coping mechanisms
3	1) Changes in family roles 2) Self control 3) Caring awarenerrs and attitude	Family regulations
4	1) Elderly care needs 2) Controlling stress behavior	Family stress management

Based on keywords and categories, table 3 above shows the theme that the family adaptation process in caring for elderly people with diabetes mellitus includes: 1) Family stimulus by understanding the disease condition and obligations in caring for the elderly; 2) Family coping mechanisms by having a patient and calm attitude, and providing effective communication; 3) Family self-regulation with training in self-control and caring attitudes; 4) Stress management carried out by the family in providing elderly care needs.

Results Analysis of Family Adaptation Process Problems in Caring for DM Elderly

The following are the results of the interviews from the six participants in the form of keywords and categories and themes according to the third objective in the table below.

Table 4 Keywords and Categories Based on Interview Results Regarding Family Adaptation Process Problems in Caring for DM Elderly

No	Keywords	Category
1	1) lLow economic status 2) Expensive maintenance costs	Family economic limitations
2	1) Difficult to control behavior 2) Difficult to communicate 3) Ketidakpatuan pencegahan penyakit	Ineffective behavior and communication
3	1) Family busy at work 2) Anggota keluarga jauh 3) Lack of maintenance staff	Lack of family staff to care for the elderly
4	1) Feeling bored 2) Inconvenience	Lack of family self-awareness

Based on the keywords and categories, table 4 above shows the theme that the problem of the family adaptation process in caring for elderly people with diabetes mellitus, among others; 1) Family economic limitations in health care; 2) Ineffective behavior and

communication due to non-compliance with care; 3) Lack of family health care personnel; 4) Lack of family self-awareness in caring for sufferers.

Results of the Validity of Interview Data with the Triangulation Approach

The validity of the data regarding the results of interviews with family members of participants (P1, P2, P3, P4, P5 and P6) by providing explanations and providing notes on the results of the interviews of each participant (P1, P2, P3, P4, P5 and P6) found similarities and suitability, as well as the data supporting each other with the results of interviews conducted by researchers with participants (P1, P2, P3, P4, P5 and P6), it can be concluded that the data is valid and can be trusted regarding the content of the family adaptation process in caring for elderly DM .

Discussion

The Role of the Family in Caring for the DM Elderly

The results of research on the role of the family in caring for elderly people with diabetes mellitus show the following themes: 1) Self-control by controlling food and drink, as well as checking blood sugar; 2) Health education about the impact of disease; 3) Treatment by administering blood sugar lowering medication; 4) Consultation with health services.

According to Freidman's theory in Bakri (2017), states that the role of the family based on the family's health care function has the function of providing physical needs and health care. Health care and health practices (which influence the health status of each family member individually) are the most relevant part of the health care function. According to PERKENI (2021), the role of the family in caring for diabetes mellitus is by providing; 1) Education with the aim of promoting healthy living, 2) Nutritional therapy with food recommendations for the general public, namely balanced and appropriate food, 3) Pharmacological therapy is given along with eating and physical exercise (healthy lifestyle), 4) appropriate physical exercise can reduce weight and improve insulin sensitivity, thereby improving blood glucose control.

The role of the family in caring for the elderly is to try to fulfill basic needs such as regulating the eating and drinking patterns of elderly people with diabetes mellitus to keep it under control and not cause an increase in blood sugar. Participants also provide understanding through education through communication to the elderly to improve their health conditions and prevent disease recurrence, so that the elderly can prevent disease complications. Participants provide treatment by purchasing medication that is available in the pharmacy after consulting with medical personnel and monitoring the elderly to comply with treatment in order to lower their blood sugar.

Participants in providing care for elderly people with DM are good at improving and preventing disease recurrence in the elderly by providing educational measures, nutritional diets, medication and physical exercise. The role played by the participants was influenced by the participants' awareness of helping sick family members so that their condition did not get worse. This is in line with research conducted by Surya (2020), stating that the intervention strategy carried out to increase family knowledge, attitudes and skills regarding DM and foot complications is to provide health education to families regarding DM in general, treatment, foot complications, modification. diet and physical exercise.

Family Adaptation Process in Caring for DM Elderly

The results of research on the family adaptation process in caring for elderly people with diabetes mellitus show that there is an adaptation process in the form of: 1) Family stimulus by understanding the disease condition and obligations in caring for the elderly; 2) Family coping mechanisms by having a patient and calm attitude, and providing effective communication; 3) Family self-regulation with training in self-control and caring attitudes; 4) Stress management carried out by the family in providing elderly care needs.

The experiences faced throughout life will form certain responses to stimulus that view regulators and cognators as coping methods, as well as social modes that focus on a person's role in society. Ineffective coping has an impact on the response to pain (maladaptive). If the client is in the maladaptive zone then the client has nursing (adaptive) problems (Yani & Kusman, 2017).

The adaptation process experienced by participants is based on understanding the disease and adapting to increasing motivation to care for the elderly. These participants adapt to the conditions experienced by the elderly, the control process in making a decision, and taking action on the decisions made and the acceptance process. Participants have an adaptation process in understanding the condition of the elderly with emotional control when carrying out care. Participants also involve local health workers for consultation regarding the development of their disease to meet the need for treatment and prevention of recurrence of signs and symptoms of diabetes. Participants have been able to adapt in various but positive ways without harming the people around them.

Researchers also argue that focal stimulus such as support from the family for the elderly can make the elderly experience an increase or decrease in their disease condition. The participants' helplessness faced problems when coping, especially in providing care to the elderly independently, and family environmental conditions that did not support the participants' lives. Stimulus that comes from outside the individual comes from care involving

local health workers for consultations on illnesses experienced by the elderly. The coping mechanisms decided by participants in caring for the elderly are very good at meeting the needs for handling and preventing disease incapacity in the elderly. Appropriate actions taken by participants by paying attention to the elderly are very much needed to improve the health of the elderly.

The results of this research show that participants have been able to adapt to controlled responses that are obtained through various but still positive methods without harming the people around them. This research shows the self-adjustment of the elderly in the context of Roy's Adaptation Model that the human adaptation system goes through several stages, namely input, control and output, where in human life, which is influenced by internal stimulus and external stimulus, there is a process of reflecting individual behavior towards the process of self-adjustment with various kinds of coping. carried out to produce an adaptive or maladaptive behavior.

Family Adaptation Process Problems in Caring for DM Elderly

The results of research on the problem of the family adaptation process in caring for the elderly with diabetes mellitus, include: 1) Family economic limitations in health care; 2) Ineffective behavior and communication due to non-compliance with care; 3) Lack of family health care personnel; 4) Lack of family self-awareness in caring for sufferers.

According to the theory of an individual's response to changes that occur to him in depth, up to the formation of coping, to provide a picture of a control process as an adaptive system which is described in detail by applying 4 effectors, namely physiological, self-concept, role function and interdependence. Roy believes that nursing care focuses on a person's ability to adapt to the problems they face. Individuals are always in the healthy-illness range which is closely related to the effectiveness of coping carried out to maintain adaptive abilities (Yani & Kusman, 2017).

According to the researchers, based on the results of the research above, every participant who had experience of family adaptation process problems in visiting elderly people with diabetes mellitus had coping mechanisms for adaptive mal-range responses during the first treatment and then as they got used to the treatment time, they had adaptive treatment. Participants experienced problems adapting to caring for the elderly, if one of the family members paid attention to the lifestyle of DM sufferers by providing information to prevent recurrence, but DM sufferers usually had a negative impact on the source of this information. This is due to distrust of the information provided by their families, so they need trusted people

or medical personnel who provide information directly to provide health education in preventing the development of the disease.

Participants with families have a minimum income on average, so the family is not able to provide health services on an ongoing basis. Limited economic resources have an impact on family members' non-compliance and sufferers are reluctant to come to health services, for fear of incurring large costs. Participants and their families only carry out treatment in traditional ways and follow family traditions

Conclusion

Families who are able to adapt in caring for the elderly by understanding the conditions regarding the elderly with diabetes mellitus they are caring for and becoming facilitators for the elderly in recovering from the disease conditions experienced by elderly people suffering from diabetes mellitus with the existence of adaptive coping mechanisms. The family adaptation process for caring for elderly people with diabetes can take the form of understanding the condition of the disease and the obligation to care for it, effective family coping, exercising self-control and a caring attitude, consulting health services and stress management.

Author Contributions

First author: designed the overall research concept, collected and analyzed interview data, developed themes and wrote the manuscript.

Second and third authors: provided guidance to researchers during the research process preparation and implementation in the form of interviews, supervision and ensuring that the results of the interview data are valid according to what is experienced by families caring for elderly people with diabetes mellitus, and the research is carried out in accordance with the research design.

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Conflict of Interest

There is a lack of in-depth information obtained from interviews regarding the family adaptation process in caring for elderly people suffering from diabetes, and the instruments used are limited in answering broad research objectives and require the development of structured instruments.

Data Availability Statement

Interview findings with family members who care for DM elderly people based on requests are in line with the research objectives

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