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The Grounded Theory of Consumer Discipline through Others: A Case Study of Type 2 Diabetic Patients

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ABSTRACT

Background: This study investigates consumer behavior in chronic disease management, specifically type 2 diabetes. Adherence to disciplined disease management is critical for individuals affected by this condition. We explore how patient attitudes and behaviors are influenced by their environment and resources, including family support, medical guidance, emotions, habits, and self-efficacy. This research aims to provide insights into promoting discipline and positive behaviors in consumers managing lifelong chronic illness.

Methods: To achieve our research objectives, we employed a Glaserian grounded theory approach and conducted semi-structured interviews with 13 patients diagnosed with type 2 diabetes, as well as their family members. Theoretical sampling was used to elucidate the role of social interactions in influencing adherence.

Results: The analysis of the collected data yielded three core categories that represent the spectrum of consumer discipline: indiscipline, disrupted discipline, and absolute discipline. The section on disrupted discipline highlights how disruptions in patients' interactions with their families and healthcare professionals impact their discipline.

Conclusion: Consumer discipline involves a dynamic interplay between the individual and their immediate environment. This study examines the influence of familial and medical support as key mediating factors in shaping consumer health behavior. Drawing on cognitive and emotional capacities, habits, and self-efficacy, consumer disciplinary practices are shaped through a diverse range of personal and social resources. By recognizing the intermediary roles of family members and healthcare providers, policymakers can gain valuable insights to inform efforts aimed at enhancing self-discipline and ultimately improving public health outcomes.

1. Introduction

Throughout life, there are many instances where individuals must practice strict discipline over their consumption and diet for a period of time. Those with chronic conditions such as diabetes are particularly required to assume the role of guardians of their well-being, closely monitoring their dietary intake and consistently exercising to maintain long-term health [1, 2]. Type 2 diabetes (T2D) accounts for over 90 % of all diabetes cases. In T2D, insulin levels decrease or cells become resistant to insulin. This type is typically diagnosed after the age of 30, and risk factors include lifestyle, obesity, high-calorie diet, and family history. T2D can lead to hypertension, vision issues, and kidney failure, impacting all aspects of life. Currently, there are over 4.5 million individuals have diabetes in Iran, with 40 % of them unaware of their condition. The prevalence of diabetes is rapidly rising, surpassing 9 million cases by the year 2040 [3, 4]. Lifestyle adjustment and dietary changes play a key role in T2D management [5]. From a biological

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medicine perspective, the focus is on the patient, ignoring interpersonal interactions and their impacts. This approach employs the term "self-management" to describe the process. The relevant body of research considers health consumers as "expert patients" equipped by healthcare providers to manage their conditions [6]. This concept is extended to the "expert family" in another approach. In the case of vulnerability, this family is capable of taking care of its members [7]. Others assume a wider scope to be effective in society. According to Whitehead (2009), a paradigm shift has already started from the hierarchical model of health and biological medicine approach toward a more comprehensive and liberated model for self-care participation by individuals, families, and society [8, 9]. The present study aims to develop a theoretical model for consumer discipline through others and identify the structure of interpersonal interactions in the context of diabetic patients.

2. Materials and Methods

This study employed a qualitative methodology using the Glaserian grounded theory approach to examine consumer discipline from a social perspective. Data were collected through semi-structured interviews with individuals diagnosed with T2D and at least one of their family members. The interviews involved open-ended questions and prompts to elicit comprehensive insights from participants. Data collection and analysis occurred concurrently from November 21 to February 19, 2022. It should be noted that the researchers had access to identifying information about the participants after data collection. Data are gathered using semi-structured interviews in the form of various questions and explorations from the participants (diabetic patients and one of their family members at least) to fully understand what participants have said. To study consumer discipline, we selected T2D because the survival and health improvement in this condition highly depends on food consumption and nutritional status, is rooted in the consumer's culture, and can be controlled by strict and continuous diets [1]. The statistical population includes T2D patients (who are aware of their condition) and their family members who are involved in the disciplinary process of their diabetic patients. These patients have been struggling with their disease for at least ten years, leading to the development of significant self-disciplinary behaviors. The research employed a theory-oriented sampling method known as theoretical sampling, proposed by the founders of the grounded theory. In this method, the criterion for selecting the samples is based on their potential to show and represent significant theoretical constructs. In other words, the researcher selects the samples based on the need during the formulation of the theory [10]. Another reason behind the use of the grounded theory method was the scarcity of studies investigating consumer discipline through others. Only one limited study has covered the subject rudimentarily reminds the need for deeper and more extensive studies [1]. A total of 15 interviews were conducted, with two being excluded from the analysis due to low quality. The point of theoretical saturation, where no new insights or concepts were emerging, was reached after conducting and analyzing 13 interviews simultaneously. The data analysis was carried out using MAXQDA version 2020.

3. Results and Discussion

To address the research questions, we interviewed type 2 diabetic patients hospitalized in the male and female wards of Razi Dermatology Hospital, as well as their accompanying family members. A total of nine hospital interviews were conducted, with two excluded for low quality. Additionally, six interviews were conducted in the homes of diabetic patients, with family members present to provide insights. Using the Glaserian grounded theory approach, the researcher aims to present a comprehensive account of the observations obtained through close examination of the data and exploration beyond comparative analysis, using theoretical sensitivity. This approach enables the researcher to provide readers with a summary of the explanatory theoretical map, elucidating the differences and similarities observed across various dimensions of consumer disciplinary attitudes.

3.1 Defining Questions: The Problem of Discipline

When an individual is diagnosed with diabetes, two critical questions arise. First, what protocols should be followed to control the condition, improve well-being, and mitigate health risks? This involves determining the necessary behavior modifications in areas like medication, nutrition, exercise, and stress management. This highlights the importance of the patient developing the requisite knowledge to optimize their health. The second question emerges when patients return to daily life after leaving the healthcare setting. Despite intentions to follow protocols, patients encounter obstacles caused by others that impede adherence. Interactions misaligned with the new regimen derail progress. Patients must determine how to elicit help from others to change consuming behaviors and comply with lifestyle changes. They can either persist alone against obstacles or persuade others to assist them. Therefore, the problem manifests in two key dimensions-knowledge and soliciting family support (Figure 1). Different cases arise based on how these dynamics interact to influence the patient's capacity for discipline. The integration of the two aforementioned cases in gray denotes disrupted discipline, which will be discussed subsequently. As shown, these cases depict differential effects on the interactions influencing consumer discipline among diabetic patients. Analysis suggests the disciplinary attitude regarding diabetes and its management explains most interactions. Thus, disciplinary attitude is a salient contextual and explanatory variable. This section delineates various interaction types and their relationship to disciplinary attitudes, which shape consumer discipline development. It includes: 1. Types of disciplinary attitudes contexts, 2. The social-structural conditions that occur for each type of disciplinary attitude, 3. The outcomes

of each disciplinary attitude, 4. The shift in interactions from one type of discipline to another. This section aims to demonstrate how our model distinguishes different modes of interactions and their processes from one another. We also seek to show how this theory works.

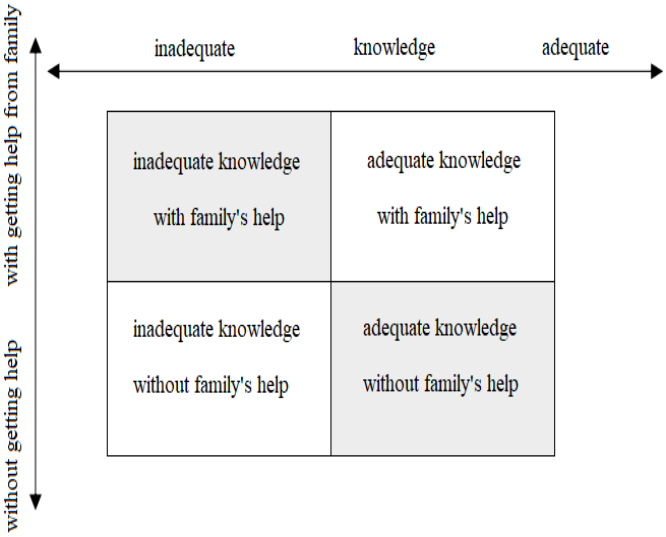

Figure 1. Defining questions of the problem of consumer (diabetic patient) discipline

3.2 Types of Disciplinary Attitudes Contexts

3.2.1 Indiscipline

The first type of disciplinary attitude context is "indiscipline". When an individual is diagnosed with diabetes, they may initially refuse to accept the disease and deny its existence. This obstructs their ability to utilize the available options and capacities of the healthcare system to control the disease and prevent its complications. Such an individual naturally refuses to comply with any of the doctor-prescribed treatment methods, does not participate in diabetes education classes, rejects consuming limitations, and makes no positive changes in their lifestyle. At the same time, the patient's family and friends are unable to play a role in establishing the patient's consumption discipline. This disrupted state of consumption may persist for years until serious health issues arise and the patient finally accepts a diabetic diagnosis.

3.2.1.1 The structural conditions of interactions

There are four conditions that, if met together, keep a patient in a state of indiscipline. However, if these conditions change, the patient shifts from a state of indiscipline to another state. The first condition is extreme fear of diabetes, which prevents the acceptance of the disease. The second condition is when the patient's family considers the disease a disgrace and refuses to accept it. They indeed encourage the patient to remain in a state of denial. The third condition is the patient's avoidance of seeking medical help and monitoring his/ her health. The fourth condition that drives a patient to keep denying his/ her illness is for the patient to be illiterate or extremely low-literate. In this case, the patient almost reads nothing and has little medical information combined with a host of false beliefs about health and diabetes. The patient enters a state of disrupted discipline, provided that one or more conditions change, and if all the conditions are resolved, the patient enters a state of absolute discipline.

3.2.1.2 Outcomes of indiscipline

3.2.1.2.1 Disciplinary attitude of patients and families: confronting diabetes-the state of denial

A patient in a state of indiscipline may repeatedly visit doctors several times and be told he/ she is suffering from diabetes, but the patient is unable to accept his/ her illness. A participant states, "I've been diabetic for more than 20 years. I had no idea. I went to see a doctor, and he said, "You have diabetes," but I couldn't believe it ..." [p2]. Denying diabetes may be rooted in severe fear of the disease. A participant who has attended diabetes education classes says, "What I witnessed in these classes was that most [patients] were depressed and that they were skeptical about having diabetes" [p4]. In this case, the patient may regard diabetes as shameful, and the family may also encourage the patient to stay in denial. Regarding their father's diabetes, a participant states, "Of course, Doctor, I should add that my father is not diabetic, but if he doesn't stick to his diet, ... his blood glucose goes up. That's when he takes two metformin tablets, but he doesn't take them regularly" [p5]. They assume genetics is the sole contributing factor to diabetes and that the disease does not exist in their family ("false beliefs").

3.2.1.2.2 The patient's disciplinary behavior: the use of pseudoscientific treatment

In this case, the diabetic patient refuses to accept the disease and take scientific and medical treatments. The patient submits to pseudoscientific treatment methods hoping to be relieved from the difficulties of compliance with consumption discipline. One of these treatments is the use of herbal medicine [p13]. Some participants mentioned the use of narcotics [p13] and raw veganism. Figure 2 depicts the hierarchical diagram of categories and concepts regarding the core category of indiscipline.

3.2.2 Disrupted Discipline

In this case, the patient accepts having diabetes and attempts to follow the doctor's instructions; however, the patient's relationship with the medical staff and family suffers from disruptions that prevent the effective and adequate establishment of consumption discipline. In the case of disrupted discipline, the patient has received either no or incomplete education. Albeit, the patient's learning

abilities also play a significant role in triggering this situation. The lower the patient's learning abilities are, the simpler the education should be to avoid confusing the patient while providing him/ her with a true understanding of self-care. A patient in a state of disrupted discipline assumes health is a personal matter and considers no role for the family. Believing it is better not to involve family members in his/ her health issues, these individual rejects the offered advice and help or only receives little help and becomes defensive against any other aid.

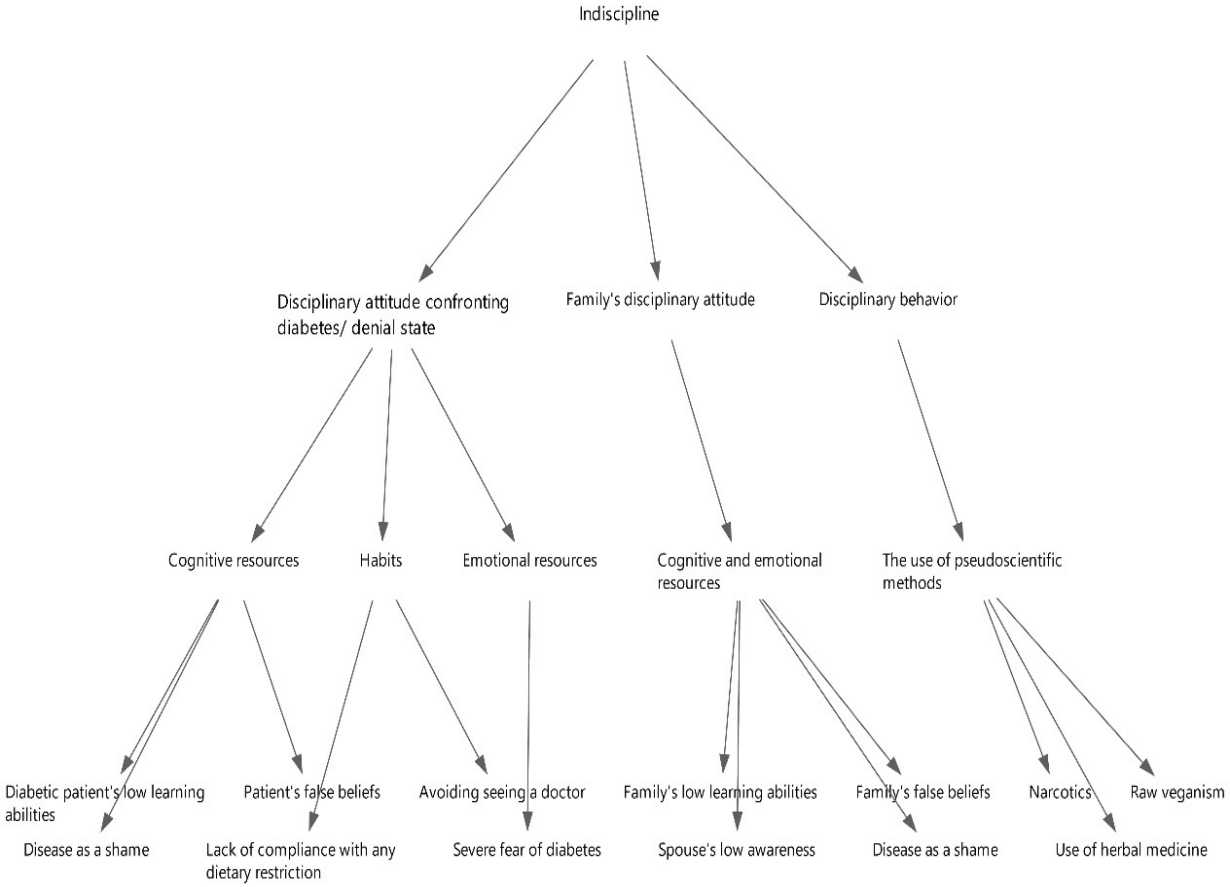

Figure 2. The hierarchical chart of concepts and categories comprising the subset of indiscipline

3.2.2.1 Outcomes of disrupted discipline

3.2.2.1.1 Disciplinary attitude to confront diabetes: ineffective self-discipline

In this case, the diabetic patient accepts having the disease but is satisfied with merely an ineffective self-discipline accompanied by a sense of 'depression.' In this regard, a participant states, "In those classes (diabetes management classes), some people would attend with their family members, usually their spouses or children, and it is OK to do so. What I witnessed in these classes was that most [patients] were depressed and that they were skeptical about having diabetes, so psychologist referral was offered because it was quite common" [p4]. In a state of disrupted discipline, the patient has no regard for using the help of family or others in establishing consumption discipline, and the concept of "emphasis on self-efficacy" was frequently seen in the interviews. While the patient strongly emphasizes self-efficacy and receiving no help from others, the change in life routine, exposure to stressful conditions, and failure in stress management result in a substantial disruption in the patient's consumption discipline. In this case, the patient's condition declines from disrupted discipline to indiscipline. A participant who is hospitalized in the male ward at Razi Hospital for a skin disease called pemphigus mentions that his job is stressful and that whenever he is stressed, his skin condition is triggered again, in addition to his diabetes becoming worse. He has no problem in the family setting but believes that due to his high-pressure job, he has been unable to find an opportunity to establish self-discipline and control his diabetes [p8]. Another patient states, "... Of course, you

can't be full-blown apathetic, but you should get less involved. When you see what's going on (it is stressing), don′t get involved at all ..." [p1]. This participant's technique for stress management is to stay away from stressful matters. In their statements, participants mentioned some of the stress-inducing factors, such as media-induced stress, financial stress, job stress, and social (political-social) relationship stress.

3.2.2.1.1.1 Attending parties

A stressful situation for a diabetic patient in a disrupted discipline state is attending parties. A consumer can avoid almost any type of consumption, but not when it comes to food. Attending a party, being served appetizing foods, and, of course, the effect of being among others combine to complicate compliance with consumption discipline. A participant describes his situation as follows, "Everybody wants to be nice. They keep saying, "Ah! Why are you so strict about your diet? Nothing's going to happen. Just eat a little bit". They keep forcing you to eat. This is especially true at parties. They keep adding rice to your plate, filling your glass with soda, doing so on and so forth. These behaviors are not good at all! Ha... ha ... (laughing)" [p4].

3.2.2.1.1.2 Disrupted family relationship

The concepts that indicate the category of "disrupted family relationship" are as follows: Sometimes, "high family-associated stress" and interfamily problems cause disruption, which naturally affects the patient's health, as well. However, this disruption is sometimes due to an "isolated life" without family. In some cases, it was observed that the diabetic patient had a good relationship with family with a low level of family-associated stress, but the family members were not participating in family responsibilities, burdening the patient with these tasks. As a result, the patient feels exhausted and has no time for self-care. In this regard, a participant mentions, "Like, I can't plan the hours I've got to myself. People coming and going to the house or, like, others having high expectations make me stressed. Like, they come here whenever it's convenient for them without thinking that I need peace, too. And, well, that adds to my work..." [p4]. In some other cases, it was observed that patients had no time for physical exercise due to their hyperactive jobs [p2]. On the other hand, some part of the consumption indiscipline in diabetic patients was due to "poor family eating habits" [p7, p8, p12].

3.2.2.1.1.3 Disrupted relationship with medical staff

"Dismissing diabetes education classes" is a sign of disruption in the relationship between the patient and medical staff. Some participants had one or more diabetic patients in the family, and if one of them had been trained, the educational content was shared with others, as well. "Lack of access to an expert and specialized doctor" in patients who lived in underprivileged (or rural) areas was mentioned several times [p5, p7, p9]. A participant considers his failure to comply with a diet to be the lack of access to an expert nutritionist, saying his prescribed diet is so difficult that no one in the world could follow it ("poor diet") [p13]. Sometimes, a doctor's "misdiagnosis" about treating a disease exacerbated the participants' diabetic conditions [p6, p9]. A participant, who was a senior manager in a public organization and had many doctor friends, regarded the friendly relationship as highly significant. He states, "The diabetes specialist should be a friend of yours. You should be able to call him whenever you want... Like, you realize you're hypoglycemic... You should be able to talk to your doctor then ‟cause if I want to go to his office, it'll take me half a day to get ready″ [p13].

3.2.2.1.1.4 Disciplinary behaviors

A behavioral outcome is not taking medications or taking them irregularly and optionally. In this case, patients act as they see fit [p6]. This indiscipline does not lead to taking medications, and patients take the same road in complying with the diet. They are extremely eager to eat and act stubbornly when they are given a dietary restriction ("voracious eating"). To describe his feelings, a participant says, "What I say is that you shouldn't tell me not to eat. Women are too afraid... children grab the plate of food from him... It's devastating for the poor guy. Don't do this stuff... It's humiliating. When the father is humiliated in the family, that family becomes a living hell for him" [p13]. Another behavior is "avoiding exercise" up to the point that disables the patient, as well. Finally, not monitoring blood glucose contributes to staying in a state of indiscipline. In this regard, a participant states, "I believe it's good that others remind you to check your glucose. I, for one, used to check my glucose less than what I should have because I was so busy. Unfortunately, I had a retinal hemorrhage at the time" [p4]. figure 3 depicts the hierarchical diagram of categories and concepts regarding the core category of disrupted discipline.

3.2.3 Absolute discipline

In this case, the diabetic patient accepts having diabetes, attempts to follow the doctor's instructions properly, and harnesses the potential of family and medical staff to establish consumption discipline. Diabetic patients in a state of absolute discipline attend diabetes education classes. They even try and persuade their family members to join forces with them. They utilize media to add to their knowledge and start reading [relevant materials] spontaneously. Moreover, they share their experience with their peers. Of course, the patient's learning abilities are also a contributing factor to causing this state. The higher the level of patients' learning abilities, the more actively they learn, and at the same time, they grasp a true understanding of self-care. If patients' family members have academic educations, they can better understand the instructions to control the disease and prevent its complications, and they interact with patients more helpfully.

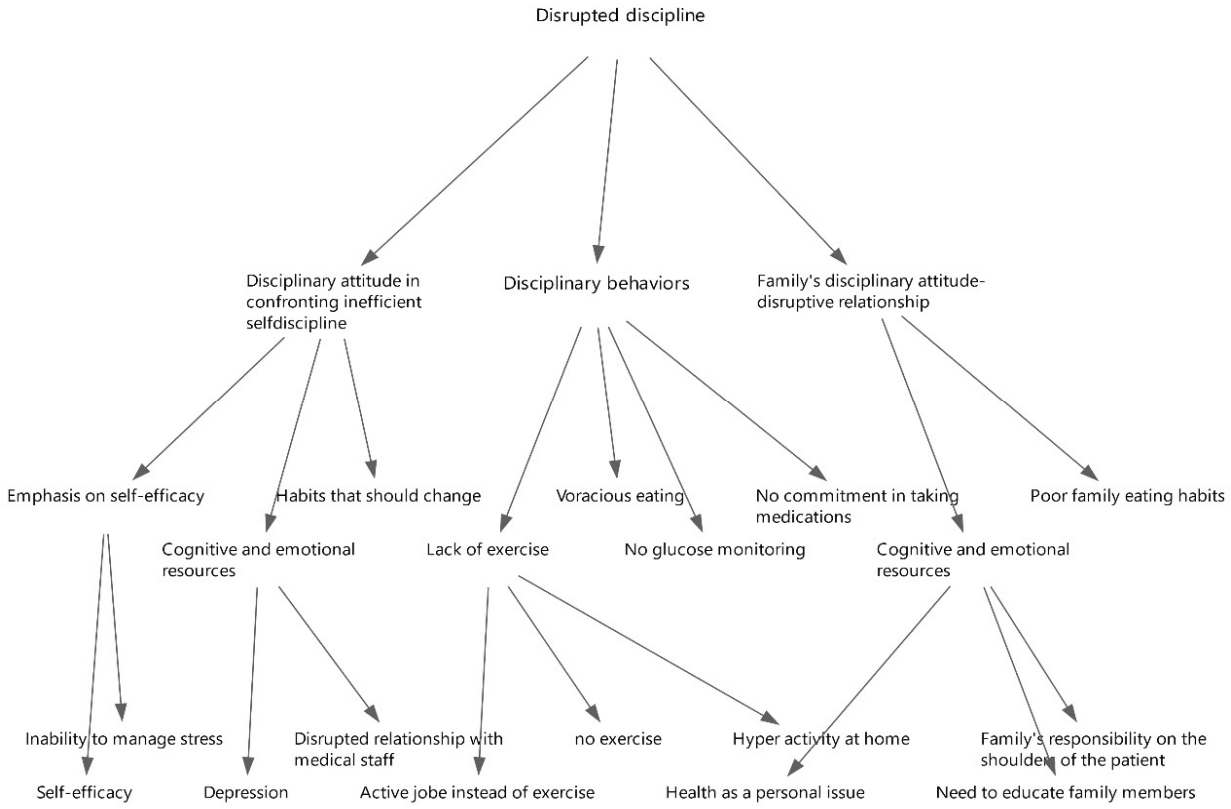

Figure 3. The hierarchical chart of concepts and categories comprising the subset of the disrupted discipline

3.2.3.1 Outcomes of absolute discipline

3.2.3.1.1 Continuous relationship with medical staff

Regarding the role of "consulting and guidance" from her doctor, a participant states, "In addition to organizing diabetes education classes, one of the things a specialist doctor in a diabetes clinic does is referrals to different specialists, such as nutritionists, psychologists, dentists, ophthalmologist, and cardiologists, and these referrals are all covered by the rare disease insurance. Periodic blood and urine tests are also quite effective in controlling diabetes because you learn about your health status and whether you've controlled it well or not" [p4]. In addition to using the guidance and consulting offered by their doctors, diabetic patients in a state of absolute discipline use a variety of educational opportunities to enhance their knowledge. Some of the educational resources mentioned in the interviews are as follows: Watching the programs of (the IRIB) Salamat TV channel, reading books, using diabetes education classes in clinics and hospitals, using valid resources on social media, and exchanging experiences with peers.

3.2.3.1.2 Family's disciplinary attitude

In a state of absolute discipline, patients forge a continuous and undisrupted relationship with their families. They and their families both are adequately knowledgeable about diabetes and how to control it. Patients or some of the family members are academically educated, or they may have even majored in health-associated fields. For instance, one of the participants, who was a woman with a high school diploma, had a brother who practiced medicine. Moreover, several members of her family were also doctors, and they all lived in the same neighborhood and socialized together. This woman's husband and children were all academically educated; using this advantage of her family, she had managed to control her disease under absolute discipline conditions, and her index of diabetes was at an ideal level for diabetic patients (HbA1c between 6 to 6.5) [p3]. Diabetic patients in a state of absolute discipline are merited with supportive moves from their spouses and family members, such as reminding their check-up time, preparing the right foods for patients, alleviating their daily activities, and even saving their lives (e.g., case of severe hypoglycemia). Furthermore, the other function of the family for diabetic patients is to reduce their stress. In this regard, one of the participants, who was a female writer and a diabetic for 30 years and had desirable family support, states, "My daughter has become my partner in exercising... and this has considerably reduced my insulin intake. Of course, my husband helps with shopping for groceries. I mean, he's practically in charge of grocery shopping, and he also helps me with cooking some days so I wouldn't miss my exercise at that time" [p4].

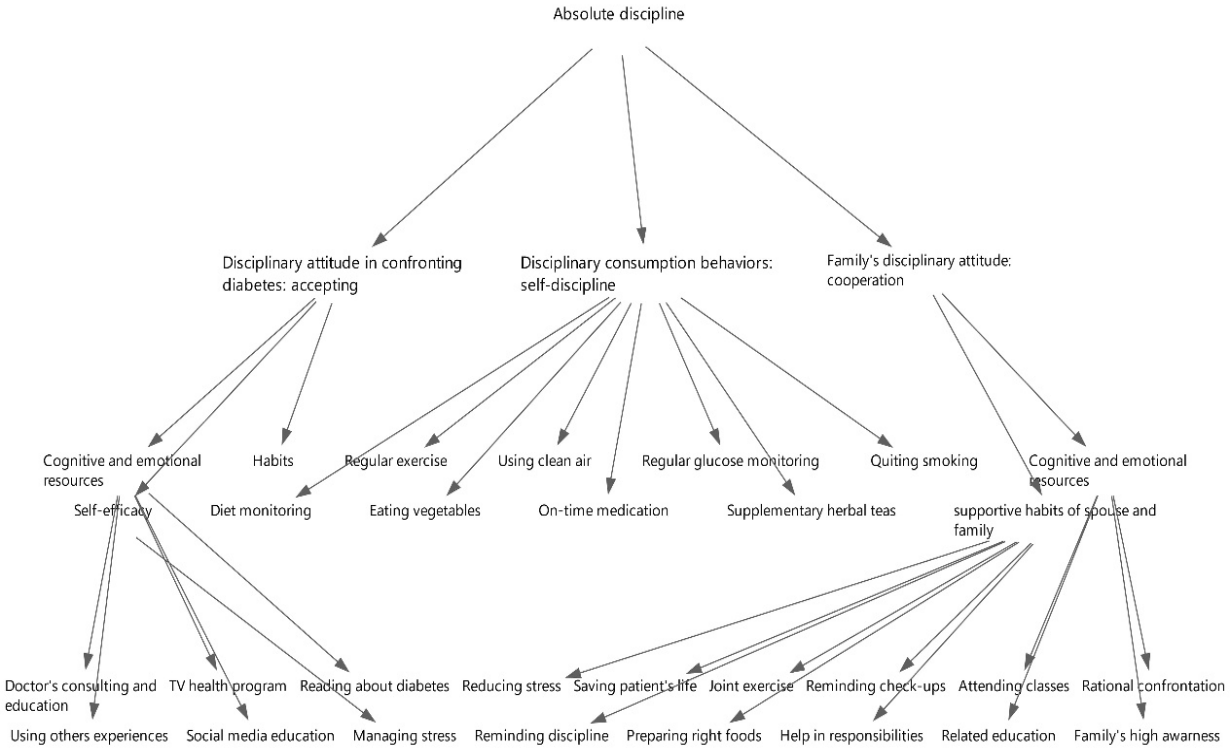

Figure 4. The hierarchical chart of concepts and categories comprising the subset of the absolute discipline

3.2.3.1.3 Consumption discipline behaviors

In a state of absolute discipline, great emphasis was found to be placed on consumption discipline. In addition to compliance with the diet and doctor's instructions, taking medications on time, eating high volumes of vegetables, regular exercise, monitoring blood glucose regularly, quitting smoking, using clean air, and using herbal teas (as supplements) were mentioned in the interviews. The following, Figure 4 shows the codes that are effective in establishing absolute discipline.

4. Conclusion

4.1 The theoretical presentation of the consumer discipline model

Three core categories emerged representing consumer disciplinary behavior: indiscipline, disrupted discipline, and absolute discipline. These states are influenced by the disciplinary attitudes of consumers and their families. Consumer discipline exists on a spectrum spanning from indiscipline to absolute discipline. The middle ground of disrupted discipline stems from relational disruptions between patients, family, and medical staff. Disciplinary attitude proved to be an important contextual variable shaping consumer discipline. The attitudes of consumers and families affect each other reciprocally and are themselves shaped by various resources. These include cognitive and emotional resources, habits, and self-efficacy, aligning with the composite model [1, 2]. Cognitive resources influence consumers' beliefs and knowledge. These resources include medical consultations, diabetes education, reading materials, peer support, health programs, and potentially false information from invalid sources about diabetes. Families of patients also shape attitudes through their cognitive resources, concurrently affecting patients' attitudes (reciprocal effects). Beyond cognitive factors, emotional resources impact patients' and families' feelings about diabetes (e.g. severe fear, humiliation). Self-efficacy-the belief in one's ability to control the disease and prevent risks-also influences attitude. With strong self-efficacy, patients utilize support, adding societal capacity to their own. Weak self-efficacy disrupts discipline, blood glucose control, and patient/ provider efforts. Stress management skills are key for self-efficacy. Stressful contexts like routine changes or social events challenge patients. Habits evolved into automatic behaviors can resolve needs for intention and discipline. For instance, daily exercise becomes habitual over time. Families' habits also positively or negatively impact patients' discipline. Family exercise habits may help, while unhealthy eating habits may hinder. Overall, this model illustrates how consumer discipline is influenced by cognitive, emotional, and social resources as well as habits and self-efficacy. Reciprocal effects, stressors, and family impacts highlight the complex interplay of factors shaping diabetes attitudes and behaviors. figure 5 depicts the model of consumer discipline through others-the case study of diabetic patients.

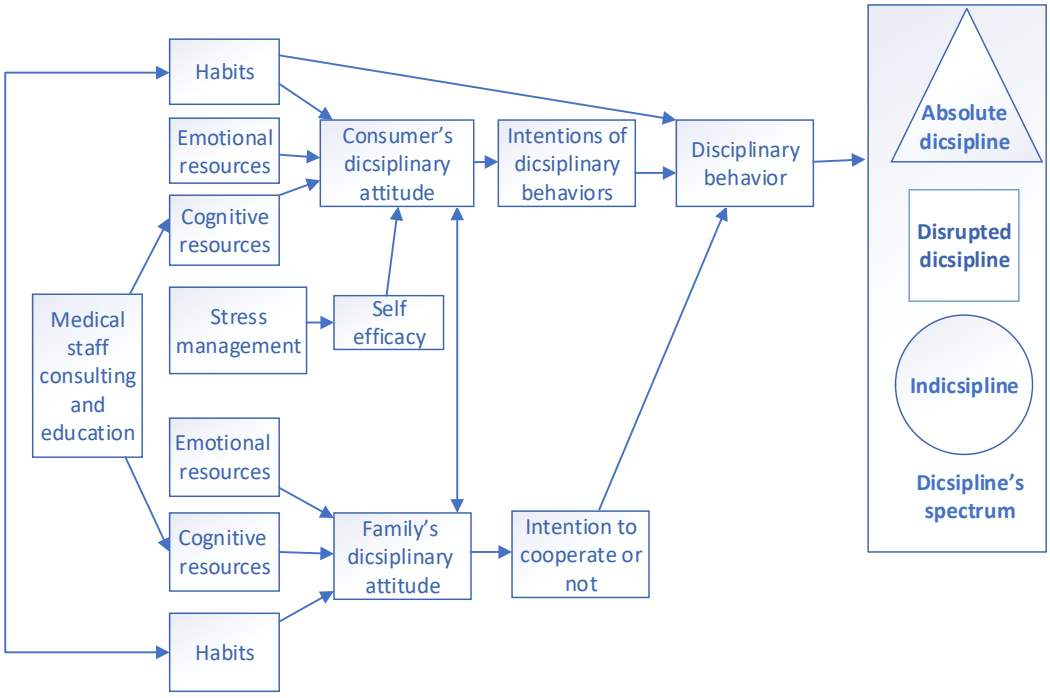

Figure 5. The model of consumer discipline through others-the case study of diabetic patients. The circle: has no restrictions, the square: has limits and boundaries, and the triangle: has the highest level of compliance with limits, discipline, and safety

Authors' Contributions

Zahra Afifirad: study design; data collection; conducting statistical analysis; manuscript writing. Gholamhossein Khorshidi: study supervision and manuscript revision. Tahereh Soori: providing administrative and technical support.

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Conflicts of Interest

The Authors declare that there is no conflict of interest.

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Ethical considerations

This study was approved by the Research Ethics Committee of the School of Medicine, Tehran University of Medical Sciences. The ethics committee of Tehran University of Medical Sciences has determined that obtaining a consent form from human participants is not necessary for this study. The committee has reviewed the study protocol and determined that the risks to human participants are minimal and that there is no potential harm that would require informed consent. Additionally, the study involves the use of existing data and does not involve any interventions or interactions with human participants. The ethics committee has therefore waived the requirement for informed consent under the Declaration of Helsinki and local regulations. However, all data collected for the study will be kept confidential and handled in accordance with ethical guidelines to ensure the privacy and rights of human participants are protected. (Ethics no. IR.TUMS.MEDICINE.REC.1402.063).

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