

A proposal for the nursing care of diabetics focusing on their perception of food therapy

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Abstract

This study was designed to clarify the diabetic's recognition of food therapy that motivates self-management along with evaluation of the relationship between the factors involved. A qualitative and a quantitative approach were used in combination. Through interviews of 13 diabetics in the qualitative approach, 10 subcategories were identified in the recognition of food therapy, which comprised the four categories of "norm", "awareness of conflict", acquisition of a "sense of competence", and "integration". Implementation of successful food therapy was found to result through development of recognition through the four categories, from "norm" to "integration". In the quantitative approach, the 10 categories and patient attributes were employed in the construction of a questionnaire, for which valid responses were obtained from 103 diabetics. Analysis identified three factors comprising recognition of food therapy, with causality extending from "other influencing factors" to the "heteronomous recognition" factor, and from "heteronomous recognition" to the "autonomous recognition" factor. The study clarified that self-management can be constructed upon intervention by medical staff, and that the experience of heteronomous recognition enables the patient to arrive at recognition of food therapy as an autonomous undertaking. These findings indicate that though the patient plays the central role in the therapy of diabetes, care must be provided with proper understanding that the patient's self-management skills are cultivated upon interaction with medical personnel.

Key words

nursing care of diabetics, perception of food therapy,
autonomous recognition, heteronomous recognition

I. Introduction

The difficulty experienced by diabetics adhering to the dictates of food therapy over time is well known. Diabetics refer to the situation in which they cannot adhere to the practice of self-management although understanding the need for food therapy, as "understanding but being unable to comply." Watanabe & Sato¹⁾ has proposed the concept of conflict to explain the situation in which diabetics are unable to make up their minds, wherein conflict is invoked by the simultaneous existence of counteracting forces regarding the practice of

food therapy — namely, the "positive conflict factor" which has the power of promoting the practice of food therapy, and the "negative conflict factor" which acts to impede its implementation. Furthermore, factors include not only personal factors but those arising from the individual's social background, indicating the need to elevate the diabetic's capacity for decision-making under various circumstances.

A motive is required for people to take action, which is explained by the three elements of "cognition", "emotion" and "desire" according to

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theories on motivation²⁾. “Cognition” has often been reported in research on self-management by diabetics, with efficacy and belief as motives considered the necessary components for action.

However, it is impossible to fully account for behavior solely by the meaning or value of specific actions. As reported elsewhere¹⁾, we found that “concerns regarding the disorder” arising from a dread of complications functions as a factor which promotes adherence to the practice of food therapy, while “weakness of will” appearing as “I cannot fight hunger” acts as a deterrent in the practice of food therapy, and that these emotions that we feel in our daily lives also greatly affect the motivation of action. This is considered to amount to the 2nd element of motivation emotion, while “desire” – the 3rd element of motivation – is considered to have very close association with the diabetic’s food therapy. Since eating is a fundamental drive in man, the appearance of “wanting to eat more” and “wishing to be satiated with delicious food” is to be expected upon limiting intake of food, making it easy to accept “desire” as an element of motivation in food therapy.

Research to date on motivation behind a diabetic’s self-management has primarily focused on the “cognitive” aspect. Cognition is a perspective often studied in the field of psychology, where it is explained that in attempting to comprehend some object, people process the necessary information, transform and organize (store) the data, for recall and use as required.

However, as stated previously, in investigation of the motivation approach that upholds a diabetic’s continuation with food therapy, must approach the diabetic from all perspectives, not only in terms of “cognition” dealing with how the subject collects data on the issue, organizes and understands it, but also the aspects of “emotion” and “desire” concerned with how the subject feels about it. Such interpretations are dealt with in philosophy by the concept of “recognition”. Therefore, how the diabetic comprehends food therapy, what feelings they harbor toward it, and how they wish to carry through with it need to be addressed in approaching their “recognition of

food therapy”. As such, this study was designed to clarify this “recognition” by the diabetic from these three perspectives. Defining the term “recognition of food therapy by the diabetic” to denote the diabetic’s perception of food therapy, including the subjective feelings of emotion and desire that they have come to harbor towards food therapy through past experience, this study was constructed to examine these perspectives of recognition and the factors involved which have not been clarified to date. Many studies have been conducted from the aspect of cognitive behavior therapy regarding arousal of the will to carry through with self-management in the diabetic and the factors necessary for sustaining such drives³⁻⁵⁾. The studies report on the necessity of self-efficacy in raising the will for self-management and lowering the negative feelings, while no association could be established between self-efficacy and the sustenance of such behavior. The reports also indicate that the diabetic is prone to perceiving self-management behavior as a great burden, despite recognition of its importance.

Self-management behavior requires change in the day-to-day lifestyles of the diabetic. For this reason, the point of relevance lies not in bringing about a temporary change in behavior, but in maintaining the change. Nevertheless, although the precedent studies to date have clarified that raising the feelings of self-efficacy is valid for bestirring the diabetic toward behavior modification, the association between the modification and self-efficacy remain unclear. It appears to be that carrying through with food therapy remains a burden for the diabetic even with recognition of its importance. In other words, how the diabetic regards the object of self-management takes on considerable significance. Nevertheless, there has been little study on perception of the three principal modes of treatment for diabetes – food, exercise, and drugs – the study of which should provide new insight into factors promoting adherence to self-management practices, that should in turn constitute new suggestions to the nursing care of diabetics.

II. Method

This study was designed as a dual approach using qualitative and statistical methodology.

1. Qualitative Approach

1) Objective

In the qualitative approach, data was collected from diabetic patients, regarding their recognition of food therapy, and how the recognition affected the practice of food therapy, for arriving at a structural representation of the diabetic's recognition of food therapy.

2) Subjects

Among patients receiving outpatient care in a diabetic clinic at a municipal hospital: 1) those between 20–65 years of age, 2) with diabetes under stable control (on which taking part in the interview would not impact negatively either physically or mentally), 3) no difficulties with communication, and 4) from whom cooperation could be obtained upon explanation of the study objectives were considered as candidates for this initial phase of the study.

Among these outpatients, patients fulfilling the above criteria, either feeling or not feeling conflict regarding food therapy were recommended to the author by the head nurse at the clinic. Of 15 patients interviewed, 13 were selected for the qualitative approach. One patient was excluded given financial problems precluding continuation of therapy, and a further patient was excluded as it became clear that the subject had not yet come to accept being a diabetic, and was deemed incapable of providing relevant feedback regarding the topic which was not being perceived as an object of either concern or conflict.

3) Period of data collection

December 2003 through September 2006.

4) Data collection

All interviews were conducted by the author in a conference room at the municipal hospital wherein privacy could be ensured. Care was taken to create an atmosphere to place the subject at ease, enabling them to speak freely. Waiting for breaks in the subject's narrative, questions were posed to reconfirm the subjects' words, or to fill in gaps in information. Each subject was interviewed

once, in a session lasting between 30 and 120 minutes (av. 55 minutes). The questions posed addressed the patients' recognition of food therapy, such as "What is food therapy to you – what does it mean?", or "How do you feel about the necessity of food therapy?"

5) Data analysis

The principal concept dealt with in this study is "recognition". And this "recognition" is basically a philosophical concept, used to explain how the subject perceives the object. The theoretical basis of this study was constructed with reference to hermeneutic phenomenology for which methodology was introduced by Cohen et al.⁶⁾ into nursing research. Interpretation denotes understanding something in the present world through pre-acquired knowledge. In this study, the context of the narrative related by diabetics to express their recognition of food therapy is interpreted anew by the researcher to express the world of the diabetic. Attempting to understand the world of the diabetic from the standpoint of hermeneutic phenomenology denotes interpretation by process of a hermeneutic circle. In this study, this would mean understanding how one diabetic recognizes food therapy, and examining how it stands when seen from other diabetics.

Regarding validity of interpretation, consistency and plausibility were examined repeatedly by several researchers specializing in diabetic care at various stages in the study. Furthermore, findings from the qualitative study below were used to evaluate validity of both methods and data obtained from various data sources through triangulation between methodology enabled by the dual design incorporating the qualitative and quantitative approaches.

2. Quantitative Approach

1) Objective

The quantitative approach was designed to substantiate the correlation between factors determining recognition of food therapy by the diabetic shown in the recognition model clarified in the preceding qualitative approach, by validating the causal relationships through estimations by statistical analysis.

2) Construction of the questionnaire

Ten subcategories regarding perception of food therapy by diabetics clarified in the qualitative approach and 5 items addressing patient attributes were together utilized as the questionnaire items. Validity of the original questionnaire as a tool for assessment of the diabetic's perception of food therapy was examined by the study team, using the factors affecting continued adherence to food therapy, and literature on self-efficacy as reference. Patient factors affecting the continued adherence to food therapy included health beliefs, health efficacy, satisfaction, values, self-concepts, while external factors included symptoms and lab test results, doctor-patient relationship, and one's job. These published factors were compared with the findings obtained in the qualitative approach of this study, resulting in addition of three attributes describing symptoms and lab results (HbA_{1c}, diabetes type, complications) and two general attributes (age, sex) as items in our questionnaire. The items and response selection were reviewed by one nursing researcher, one physician, and one diabetic patient, regarding ease of comprehension, and ease of responding. As a result, item expression was revised in part, and the form of response revised into a 4-point rating from 1: quite so, 2: yes so, 3: not so for most part, and 4: not so. The questions are shown in Table 1.

3) Subjects

The subjects were selected from outpatients

undergoing treatment at three diabetic clinics: 1) between 20–65 years of age, and 2) considered capable of responding to the questionnaire.

Questionnaires were distributed to 106 subjects fulfilling the above criteria, and excluding 3 subjects submitting incomplete forms, the ensuing analysis was carried out on the remaining 103 subjects (97.1%). All were subjects having received education for patients on food therapy.

4) Period of data collection

September through December, 2007.

5) Method of data collection

The research objectives and subject selection criteria were explained to clinic and ward nurses at the three facilities, and their help requested in introducing the author to prospective subjects. In the pilot study, questionnaires were handed to the subjects in person and collected via mail. However, deficiencies in data arising from the patient having insufficient grasp of lab results or the type of diabetes involved proved to be problematic. Therefore, the method was switched to on-the-spot interviews, with the data reviewed by attending nurses for accuracy before collating in forms capable of maintaining anonymity. The interviews were conducted by a single researcher.

6) Data analysis

Data was analyzed using descriptive statistics, factor analysis, and covariance structural analysis. Factor structure of data was clarified through factor analysis (principal component analysis,

Table 1. Questionnaire items

Subject attributes (5 items)				
1) Age	2) Sex	3) HbA _{1c}	4) Diabetes type	5) Presence of complication(s)
Recognition of food therapy (10 items)				
1) Do you consider food therapy a matter of course for the diabetic?				
2) Do you consider food therapy as something that must be adhered to because the medical staff say so?				
7) Do you feel you are forgoing satisfaction from eating for carrying through with food therapy?				
10) Do you think that food therapy is greatly affected by one's job?				
8) Do you fear the complications of diabetes?				
6) Do you feel any conflict regarding the practice of food therapy?				
3) Do you believe food therapy is worthwhile?				
4) Do you feel it possible to carry through with food therapy?				
5) Do you feel confident regarding the practice or continuation of food therapy?				
9) Do you see yourself in a positive light?				

promax rotation), causal relationship between variables was clarified by covariance structural analysis for constructing the causal model for recognition of food therapy by the diabetic. Analysis was performed using SPSS 15.0J software.

III. Ethical Considerations

The study was reviewed and approved by the Gifu University School of Medicine, Medical Research Ethics Review Board. Approval was then obtained from each of the facilities at which the study was implemented. The conduct of research complied with the guidelines for ethical conduct for nurses.

IV. Results

1. Qualitative Approach

1) Subject attributes (Table 2-1)

Of the 13 subjects selected for analysis, 8 were male, and 5 female. Two patients had Type 1 diabetes, and 11 had Type 2. Complications were noted in 6 subjects, mean age was 59.8 years, mean HbA1c was 7.5%, and mean duration of (history of) diabetes amounted to 6.7 years.

2) Recognition of food therapy by the diabetic

Analysis of interview content yielded the four categories of “norm”, “awareness of conflict”, acquisition of a “sense of competence”, and “integration”. The categories and examples of the subjects’ words from which they were extracted are shown in Table 3.

The subcategory of “norm”, indicated recognition of food therapy as something the subjects are pressured into doing, and lack of appreciation of the value of food therapy. While seeing food therapy as a norm – a matter of course in the therapy for diabetes – they recognized it as something that must be adhered to because the medical staff say so. Saying “I wish I could satisfy my hunger. I’m never fully satisfied”, they recognized that they were “forgoing satisfaction from eating for carrying through with food therapy.” In addition, they touched upon how the “complications are dreadful. I think I should stick with food therapy because I don’t want to become like that”, indicating they were complying with the food therapy to alleviate their fear of complications, while the influence of work on the practice of food therapy was expressed by comments such as “It is physically impossible to carry through the day on the job, on the same number of calories ingested under hospitalization.

Regarding “awareness of conflict”, this category was comprised solely of feelings of conflict, as the term implies.

Acquisition of a “sense of competence” indicated awareness of the value or validity of food therapy. Value was expressed by words such as “Food therapy is great. It’s definitely worth doing”, while it was recognized as something possible to perform, by comments such as “I haven’t had any Coke or fruit juice since hospitalization.”

Table 2-1
Qualitative Approach Sample attributes (N=13)

Variables	n (%)
Sex	
Male	8 (61.5)
Female	5 (38.5)
Diabetes type	
Type 1	2 (15.4)
Type 2	11 (84.6)
Diabetic complication(s)	
Present	6 (46.2)
Absent	7 (53.8)
Age	
Mean age	59.04 ± 5.75 years
HbA1c	
Mean HbA1c	7.05 ± 1.29 %

Table 2-2
Quantitative Approach Sample attributes (N=103)

Variables	n (%)
Sex	
Male	68 (66.0)
Female	35 (34.0)
Diabetes type	
Type 1	7 (6.8)
Type 2	96 (93.2)
Diabetic complication(s)	
Present	51 (49.5)
Absent	52 (50.5)
Age	
Mean age	59.04 ± 11.06 years
HbA1c	
Mean HbA1c	7.05 ± 1.62 %

Table 3. Recognition of food therapy by the diabetic

Category	Subcategory	Sample comments
Norm	Food therapy is a matter of course for a diabetic	Meals must be regarded as therapy for diabetics. As something which must be done as a matter of course. Naturally, I was reluctant to be hospitalized at first because it meant food therapy.
	Food therapy must be adhered to because the medical staff say so	The prescribed meals are not that different. I only eat one serving of fish and one bowl of rice, anyway. But they tell me it's not sufficient. That my weight gain is due to my eating. When I reach out to eat a manju or a piece of cake, images of my doctor or nurses appear in my head.
	I am forgoing satisfaction from eating for carrying through with food therapy	Say I order an udon-noodle meal. If I eat the udon, I'm supposed to leave the rice untouched. Or vice versa. Or eat only a little of both. I always have the wish to satisfy my hunger. I'm never satisfied. But I have to hold myself back because of the limit on how much I can eat.
	Food therapy is greatly affected by one's job	It's okay when you're hospitalized. Since all you do is eat, walk a while, and sleep. But once you're released and back on the job, there's a physical limit to what can be done on the same calories as when you're in the hospital. I can't trouble others around me by collapsing, or take a break whenever I feel like it. So when I suspect an impending attack of hypoglycemia, I eat a sweet roll or fruit during breaks beforehand.
	Food therapy is necessary for reduce your fear to diabetic complication	The foot gangrene shown in the diabetes class. Seeing that, you think you don't want to become like that. Complications are scary-dreadful. You end up thinking food therapy must be strictly adhered to so you don't end up like that.
Awareness of conflict	Recognition of conflict regarding food therapy	There's conflict. Going shopping, seeing an enticing cake, you think, maybe just one piece. But that would bring me back to where I started. Wanting to eat?no I can't?that sort of thing.
Sense of Competence	Recognition of the value of carrying through with food therapy	Being hospitalized and losing so much weight in so short a time, just from the change in diet. Food therapy is really great?making such a difference!
	Carrying through with food therapy is possible	I took notes on the meals served in hospital, which I've used for reference. I haven't had any coke or other soft drinks since hospitalization. Just tea or black coffee once in a while.
Integration	Confidence regarding continuation of food therapy	I simply don't feel like eating sweets any more. I've really become capable of holding back. I think I can stick with this. It just takes getting used to-just a matter of will.
	Capacity to see oneself in a positive light	These days, I'm spending my days mostly looking forward?a positive outlook. After all, there's so much I want to do. There were times when I didn't care what happened?having the joy of eating restricted. But rather than go that route, I think it's the wish to live a long full life doing what I want to do that won out in the end. I don't feel a great loss regarding what I can't eat?more than that, I can do what I want?whatever I put my mind to. My current state isn't that bad.

“Integration” was the state in which food therapy was embraced as an autonomous undertaking, and a reflection of subjects capturing themselves adhering to the dictates in a positive light. Subjects indicated confidence in continuing with food therapy saying “I think I can stick with this. It’s just a matter of getting used to it”, while words such as “I’m spending my days mostly looking forward – a positive outlook … I think it’s the wish to live a long full life doing what I want to do that won out in the end” describing food therapy as something which enabled them to see themselves in a positive light.

Fig. 1 is the schematic representation of the meaning of food therapy gathered through the

narrative of the subjects. Recognition of food therapy was seen to start with recognition of it being a “norm” – something a diabetic must do, particularly because they are told to do so, which takes on various contexts through the actual practice of food therapy. Such contexts are not necessarily positive, and include recognition with negative effects on its practice. When this arises, the next step, “awareness of conflict” is brought into recognition. Following such “awareness of conflict”, it becomes necessary to acquire a “sense of competence” for subjects to gain confidence in carrying through with food therapy. To reach this frame of mind, subjects must make the transition in recognition from that of conflict to acceptance of

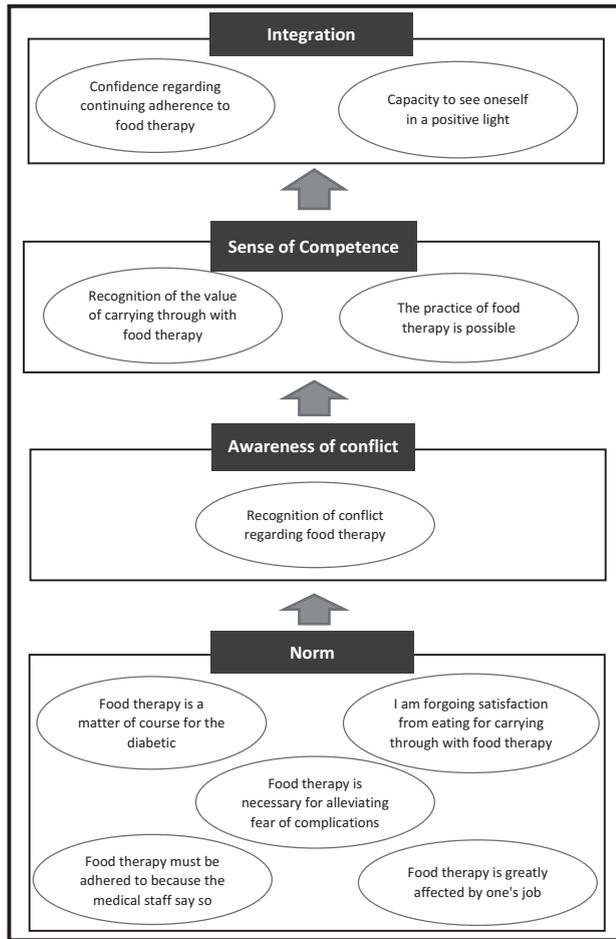


Fig 1. Structural representation of the diabetic's recognition of food therapy

the value of carrying through with food therapy, and that the practice is possible. Furthermore, the continued practice of food therapy requires the recognition of food therapy as one's own

undertaking, and reaching this stage was demonstrated as the prerequisite to successful adherence to food therapy.

2. Quantitative Approach

1) Subject attributes (Table 2-2)

Regarding the 103 patients included in the questionnaire survey from, whom complete forms were retrieved, 68 were male, 35 were female, mean age was 59.04 years, 7 were cases of diabetes Type I, 96 were Type 2, mean HbA1c was 7.05%, and complications were present in 51 patients.

2) Examination and factor analysis of the questionnaire items on recognition of food therapy

The questionnaire entries on recognition of food therapy were examined (Table 4), and items exhibiting a "mean \pm SD" of one or less in "matter of course", "value" and "fear of complications" were removed as being indication of floor effect. Factor analysis was carried out on the remaining 7 items, and the results are shown in Table 5. The cumulative contribution rate was 64.48%, and the eigenvalue was 2.12, 2.082, and 0.956, a sufficiently large value. Factor loading is shown in Table 5. Factor 1 was comprised of "continuation = 0.913", "possible = 0.764", and "positive attitude = 0.307", factor 2 of "conflict = 0.810", "satisfaction = 0.594", "under direction of medical staff = 0.433", and factor 3 was "work = 0.865". The first factor was named the "autonomous recognition factor", the second factor the "heteronomous recognition

Table 4. Examination of questionnaire items

Variable	Questionnaire item	Mean	SD	Mean - SD	Mean + SD
Matter of course	Do you consider food therapy a matter of course for the diabetic?	1.4	0.56	0.84 (deleted)	1.95
Medical staff	Do you consider food therapy as something that must be adhered to because the medical staff say so?	2.2	1.14	1.06	3.27
Forgoing satisfaction	Do you feel you are forgoing satisfaction from eating for carrying through with food therapy?	2.5	1.02	1.48	3.52
Job	Do you think that food therapy is greatly affected by one's job?	2.4	1.00	1.40	3.40
Fear of complications	Do you fear the complications of diabetes?	1.8	0.91	0.89 (deleted)	2.71
Conflict	Do you feel any conflict regarding the practice of food therapy?	2.6	1.02	1.58	3.62
Value	Do you believe food therapy is worthwhile?	1.4	0.60	0.80 (deleted)	2.03
Possible to implement	Do you feel it possible to carry through with food therapy?	1.9	0.88	1.02	2.71
Continuation	Do you feel confident regarding the practice or continuation of food therapy?	2.2	0.94	1.26	3.15
Positive attitude	Do you see yourself in a positive light?	2.0	0.76	1.24	2.75

Table 5. Factor analysis of the diabetic's recognition of food therapy

Factor/Variables	Component		
	1	2	3
Factor 1: Autonomous recognition			
Continuation	0.913	-0.054	-0.105
Possible to implement	0.764	0.025	-0.027
Positive attitude	0.307	0.019	0.095
Factor 2: Heteronomous recognition			
Conflict	-0.018	0.810	-0.144
Forgoing satisfaction	0.071	0.594	0.060
Medical staff	-0.030	0.433	0.208
Factor 3: Other influencing factors			
Job	0.048	-0.008	0.865
Eigenvalue	2.120	2.082	0.956
Contribution rate (%)	26.500	26.030	11.950
Cumulative contribution rate (%)	26.500	52.530	64.480

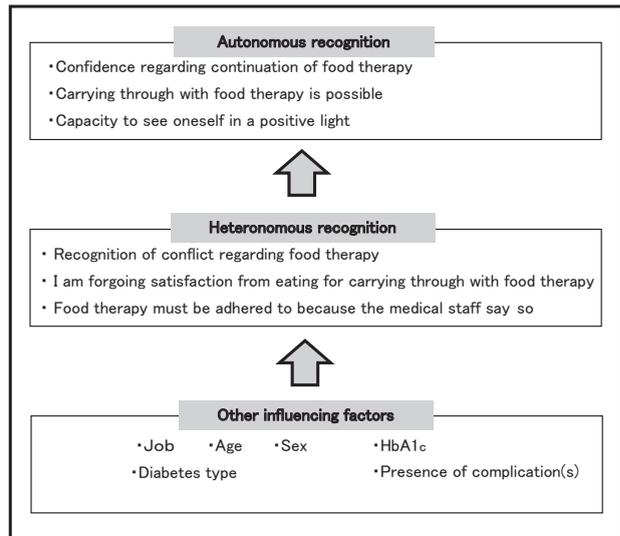


Fig 2. Concept framework

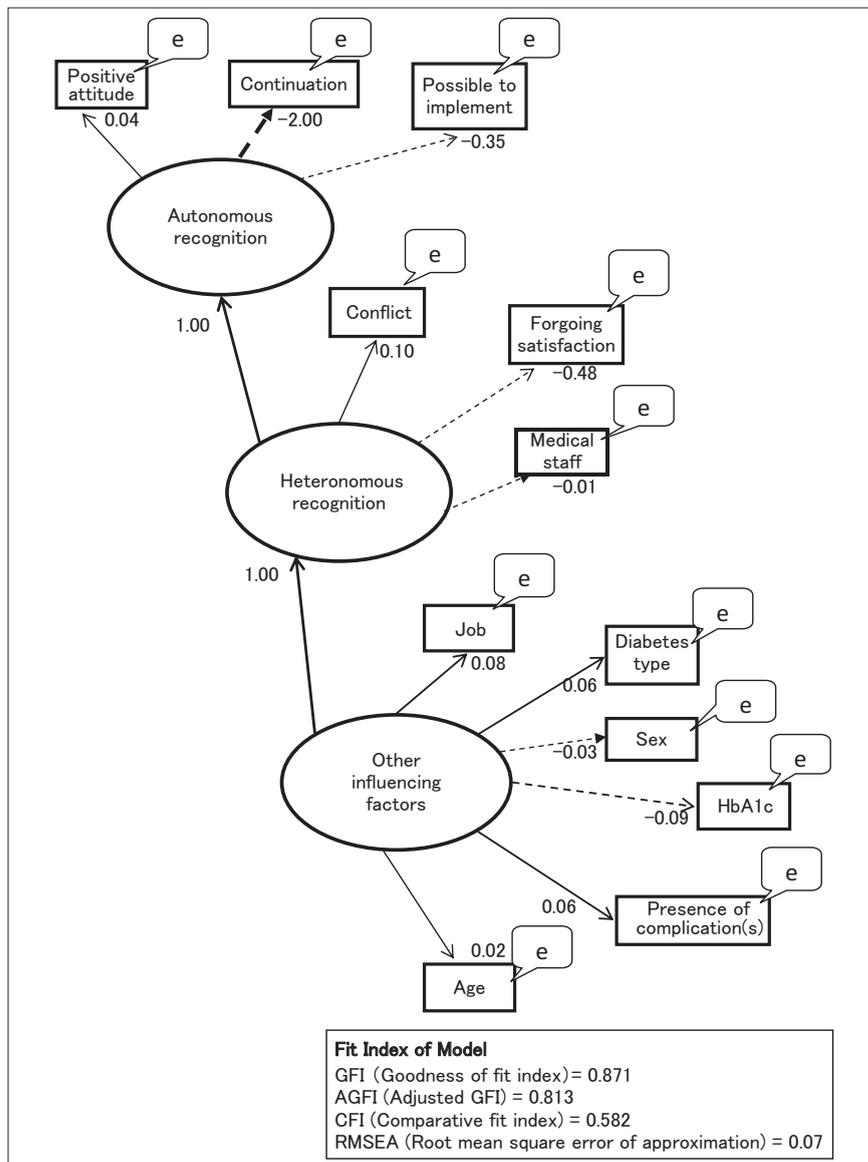


Fig 3. A causality model of the diabetic's recognition of food therapy

Note: Thickness of arrows are proportionate to path coefficients. Dashed lines denote negative path coefficients.

factor”, and the third factor, the “other influencing factors”. These items and factors associated with recognition became the three potential variables and seven observed variables, in creating the causal relationship model.

3) Causal model for recognition of food therapy by the diabetic

The conceptual framework for the recognition mechanism using the recognition structure diagram arrived at through the qualitative approach in this study was constructed from the three potential variables, seven observed variables, and patient attributes (age, sex, diabetes-mellitus type, HbA_{1c}, presence of complication(s)) (Fig. 2).

Covariance structural analysis (SEM: generalized least squares method) was conducted assuming a three-tiered structure for recognition of food therapy by diabetics with reference to the conceptual framework of recognition. The goodness of fit of the constructed model (Fig. 3) was GFI = 0.871, AGFI = 0.813, CHI = 0.582, and RMSEA = 0.07. From these results, it was judged that this model was sufficiently appropriate as a causal model for recognition of food therapy by the diabetic.

When the recognition model was interpreted, the path coefficient from “other influencing factors” to “heteronomous recognition” was 1.00, showing that the stronger the “other influencing factors”, the stronger the recognition that food therapy was being undertaken heteronomously. At the same time, the path coefficient from “heteronomous” to “autonomous” recognition was also 1.00, indicating that those who recognized their practice of food therapy as being heteronomous were equally inclined to see the practice as an autonomous act.

Next, the observed variables for each of the potential variables were examined. Among the observed variables comprising “other influencing factors”, it became clear that “job”, “type”, and “presence of complication(s)” had considerable influence compared to other variables.

In “heteronomous recognition”, “conflict” was the only positive path coefficient observed, while “degree of withheld satisfaction” and “under direction of medical staff” appeared as negative

path coefficients.

“Continuation”, with the largest path coefficient in this causal model, fell under “autonomous recognition”, appearing as a negative association of minus 2.00. Moreover, that for “possible” was also negative at minus 0.35, while the relationship with “positive attitude” was a positive 0.04.

V. Discussion

1. Structure of the recognition mechanism of food therapy by the diabetic

In the qualitative approach of these research findings, recognition of food therapy by the diabetic was found to consist of four stages: from being a “norm” to “consciousness of conflict”, to acquisition of a “sense of competence”, and finally into “integration”. The value of food therapy was seen to undergo gradual acceptance, with developing recognition of food therapy from something practiced under heteronomous control to an autonomous undertaking.

This was similar to the findings reported by Ryan et al.⁷⁾ in their studies on motivation focusing on autonomy. They report on the existence of four stages, from a “self-regulatory stage” in which action is taken reflecting the degree of autonomy, followed by an “incorporation stage” accompanied by a sense of obligation — of having to do something, then onto an “identification stage” where acts are performed because their value is appreciated, and finally, an “integration stage” in which the act is prioritized and performed as a matter of fact without presenting any conflicts with other values or principles. The diabetics in our study were also seen to recognize food therapy as a “norm” at the outset, without any relation to their own wishes or will. Becoming conscious of conflict thereafter, they came to see the value of food therapy in itself, and went on to acquire a sense of competence in being capable of carrying through with food therapy. Furthermore, saying they should be able to carry through with food therapy long term, they demonstrated how their sense of achievement was enabling them to see themselves in a positive light. However, differences do exist between Ryan’s study and our own. In

Ryan's study, they indicated that the more autonomous an act, the greater the degree of internalization of the value behind the act, which makes the person select and carry out the action naturally without conflict. However, our study differed in that it was the experience of conflict that enabled the subject to give serious consideration to the act, with recognition of the capacity for actually carrying through with the act preceding true appreciation of its value.

Additionally, in our study, while the qualitative approach yielded a classification comprising 4 modes of perception, the quantitative approach using the questionnaire based on the qualitative approach revealed 3 factors, raising the question of how to regard this disparity, even though the two analyses were similar in that the factors could be categorized into feelings of being pressured to carry through with food therapy heteronomously, and a positive attitude of it being possible to carry out. Taking the greater number of subjects involved from multiple facilities in the quantitative approach as an indicator of greater reliability, the results from the quantitative approach were adopted for construction of the conceptual framework for perception of food therapy by the diabetic shown in Fig. 2.

2. Causal model for recognition of food therapy by the diabetic

A characteristic of the causal model for recognition clarified in this study was the positive path coefficient obtained from "heteronomous recognition" to "autonomous recognition". Direct interpretation of this finding would yield a contradictory situation indicating that those with the recognition of being under heteronomous control also have the recognition of being in autonomous control. Autonomy is defined as the freedom of action based upon free will and volition⁸⁾, on which Berlin⁹⁾ notes in relation to his dissertation on liberty, that "I am free, in that I am autonomous, and as long as I remain autonomous. I comply with this principle ... in other words, the principle was discovered from within the ego. Freedom is obedience." From this, it can be said that autonomy is the state in which actions are

taken as the result of the liberty of selection from within the framework of rules enforced upon oneself. In other words, even liberty, in the context of freedom within a framework of autonomy denotes the existence of pre-defined boundaries within which selections are made upon "free" will. Because such decisions are accompanied by a sense of self-decision rather than the result of acting upon the orders of others, the decisions are recognized not as a heteronomous, but as an autonomous act. Heteronomy is said to denote dependence upon extrinsic forces, or the state in which one is dominated by and rendered to an existence no more than a slave, a plaything of the external world⁸⁾. Combining such concepts, the difference between autonomous and heteronomous recognition can be considered the difference between recognition that one made a selection on their own, or whether it was made under domination of others, indicating dependence upon extrinsic forces. For this reason, although there is no difference in that food therapy is carried out within the restrictions as instructed by medical personnel, the difference in recognition is whether the act is considered the result of external domination, or as an act of free will, having accepted the situation, recognizing the need, and carrying through with the systematically. In short, it is thus possible to explain the causal model constructed through this study that indicates a transition starting from heteronomous recognition, full appreciation of the circumstances, leading on to autonomous recognition.

Moreover, while the variables "positive attitude", "continuation" and "possible to implement" was found to comprise autonomous recognition, that the correlation coefficients for both "continuation" and "possible to implement" were negative was a finding of note in this study. In a study using autonomy as a capacity for coping with life for patients with type 2 diabetes mellitus, Moser et al.¹⁰⁾ report on 7 elements being the constituents of autonomy. Namely, "identity", "self-management", "willing acceptance of paternalism", "self-determination", "participation in decision making", "monitoring of plans", and "responsive relationships".

The “positive attitude” in our study results denotes food therapy as being recognized as one’s own undertaking, comparable to the “identity” described by Moser et al. Additionally, our “continuation” and “possible to implement” appear to amount to Moser’s “self-management”, “self-determination” and “participation in decision making”. However, the “continuation” and “possible to implement” variables were negatively correlated with autonomous recognition. Put in other words, this would mean that patients with autonomous recognition do not have the confidence of continuing with food therapy, and do not feel the practice of food therapy is possible. An attempt to interpret this finding according to Miyakawa’s views^{11,12)} based in Thomism would have it that intellectualistic self-determination harbors in itself, the significance of autonomy, and that there are two types of freedom of choice, “freedom to wield” and “freedom to specify” involved in the determination or will forming the basis of autonomy. In other words, being able to make a subjective selection of behavior, and having responsible control over one’s behavior is the essence of autonomy. In terms of a diabetic’s practice of food therapy, selection of whether to practice or not practice food therapy would be the patient’s self-responsibility, with behavior under control of the patient themselves. For this reason, whether to continue with food therapy or not, or even the probability of implementing food therapy per se, then becomes the result of the patient’s free will. And this very freedom to choose is believed to have been reflected in the negative correlation between “autonomous recognition” and both the “continuation” and “possible to implement” variables.

3. Suggestions for the nursing care of diabetics

The following two points are raised as suggestions to diabetic care arrived at through this study.

First of all, for motivating the diabetic towards self-management, concepts of self-efficacy and adherence have been incorporated to emphasize that the principal figure in the therapy of diabetes is the patient themselves, together with the

importance of nurturing confidence of actually being able to follow through with food therapy. However, this study demonstrated that autonomous recognition is attained by going through the step of recognition of food study as a heteronomous act. This renewed understanding calls for nursing care tailored to the particular stage of recognition of each patient.

Secondly, although the principal figure in the therapy of diabetes is the patient, medical personnel must not become mere spectators. As shown in this study, because acting under the control of medical personnel can exist as an option for the diabetic coming under autonomic selection of behavior, care must be taken to ascertain the state of self-management of each individual, what kind of support they are looking for, and providing interaction in support of patient autonomy as required.

4. Study limitations and issues for future study

Given the difficulty diabetics face with adhering to food therapy over time, this study was undertaken to clarify their recognition of food therapy and the factors involved through a qualitative and a quantitative approach, with the hope of arriving at suggestions in nursing care of the diabetic. In the quantitative approach, deviations in response indicated many patients regarding food therapy as a matter of course, that it had value, and fearing complications, so that subsequent analysis was conducted following deletion of the three variables. However, from the opposite perspective, the data collected in this study are those from a group of patients who feel this way about food therapy. In this sense, these three variables may represent the recognition of food therapy by most diabetics, and as such, may be the very perspectives requiring investigation in future regarding dropouts from food therapy that constitutes a substantial problem in light of the need for long-term continuation of therapy, as well as in the context of the increasing population of insipient diabetics.

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糖尿病患者の食事療法に対する認識に焦点を当てた看護ケアの提言

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要 旨

本研究は、糖尿病患者が、食事療法を自己管理していく動機となる「食事療法に対する認識」がどのようなものであるか、「食事療法に対する認識」にはどのような関係があるのかを明らかにすることを目的とした。方法は質的アプローチと量的アプローチにより実施した。質的アプローチでは、13名の糖尿病患者にインタビューを行い、10の食事療法に対する認識のサブカテゴリーが明らかとなり、それらは「規範」「葛藤の自覚」「有能感の取得」「統合」の4つのカテゴリーに統合され、「規範」から「統合」の順に認識が発展していくことで、望ましい食事療法が実施できていることが明らかとなった。量的アプローチでは、質的アプローチで明らかとなった10のサブカテゴリーと患者の基本属性より、研究者が独自で質問紙を作成し、103名の糖尿病患者より有効回答を得た。分析の結果、糖尿病患者の食事療法の認識は、「影響要因」「他律的認識」「自律的認識」の3因子に分類され、「影響要因」より「他律的認識」へ、「他律的認識」より「自律的認識」へと因果関係がみられた。本研究結果より、医療者の関わりが基礎となり自己管理行動を築いていくことができること、また他律的認識を体験したことで自律的認識を持つことができることが明らかとなった。よって、糖尿病治療は患者主体で行われるが、医療者の関わりが基礎となり糖尿病患者の自己管理能力が育成されることを理解し、患者ケアを行っていくことの必要性が示唆された。