Original Article

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Development of a scale for evaluating recuperation attitude at the time of education for newly diagnosed type 2 diabetes

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Abstract

Education for patients with newly diagnosed type 2 diabetes is important because it can help to reduce the risks of complications by encouraging strict blood glucose control from the earliest stages of the disease. In education for newly diagnosed type 2 diabetes, it is important for patients to develop a deep understanding of having diabetes along with an attitude toward preparing for medical treatment. Moreover, an index is needed to evaluate whether patients receiving such education after diagnosis are properly prepared for life as a diabetes patient. This study was performed to develop a scale for evaluating recuperation attitude at the time of education for patients with newly diagnosed type 2 diabetes. Twenty-four items were created for the draft scale by referring to previous research and Herzberg's motivation-hygiene theory, which was then administered to 174 patients with type 2 diabetes. Exploratory factor analysis yielded four factors with 16 items: undertaking recuperation as a diabetes patient (Factor 1), looking back on a poor diet and trying to fix it (Factor 2), trying to study diabetes comprehensively (Factor 3), doing what can be done now (Factor 4). The cumulative contribution of these factors before rotation was 65.58%, indicating good construct validity. Significant and positive correlations were found between this scale and the Self-Efficacy Scale for Diabetes Self-care and the Japanese Translated "The Summary of Diabetes Self-Care Activities Measure"; thus, the criterion-related validity was secured. The average item-level content validity index (S-CVI/Ave) was 0.90, indicating good content validity. Finally, the internal consistency was secured with a Cronbach's α coefficient of 0.86. Overall, the reliability and validity of this scale were confirmed. This scale can be used to evaluate recuperation attitude at the time of education for patients with newly diagnosed type 2 diabetes.

KEY WORDS

type 2 diabetes mellitus, care behavior, diabetes education, patient education, patient evaluation

Introduction

The overall aims of diabetes treatment are to prevent the onset and progress of complications, maintain quality of life (QOL), and extend the life span[1)]. To achieve these aims, patients must assume control over their physical condition, such as blood sugar level. For that reason, education is an important aspect of diabetes care.

Diabetes education generally focuses on improving knowledge of diabetes, self-care methods, and maintaining motivation for self-care[2)]. Education for newly diagnosed is important because it can help to reduce the risk of complications by encouraging strict blood glucose control from the earliest stage of the disease[3)]. Moreover, diabetes education helps patients to understand their disease[4)] and improves their self-efficacy for self-care[5)].

However, so far, researchers have engaged in little discussion of the most effective methods for education for newly diagnosed diabetes. Indeed, currently,

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the effects of hospitalization for diabetes education decreased after about six months[6]. Possible reasons for the short-term effects are that patients cannot engage in self-care for long periods, or they did not fully understand the notion of living with diabetes or acquire an attitude as a diabetes patient during their education after diagnosis. In a previous study[7], we clarified patients' educational experiences at the time of education after newly diagnosed and subsequent recuperation experiences using qualitative methods. We found that patients' recuperation was largely based on their attitudes toward education after newly diagnosis. Moreover, we found that patients often developed an attitude towards preparing for medical treatment after a major event that instilled in them a deeper understanding of diabetes. In addition, patients sought to "obscure" their diabetes by reflecting on their poor eating habits and focusing on improving those habits. Holding onto these attitudes in turn influenced their recuperation in the present.

It is clear that educational experiences at the time of education for newly diagnosed are related to the formation of appropriate recuperation attitudes among diabetes patients, which is important for their subsequent recuperation. Accordingly, it may be useful to assess to what extent patients receiving education for newly diagnosed have developed such attitudes. We therefore created a scale for that purpose and assessed its validity and reliability. We expected that creating this scale would help in developing more effective methods at the time of education for patients with newly diagnosed type 2 diabetes.

Definition of terms in this study

Education for newly diagnosed: Diabetes education that patients with type 2 diabetes think they have received for the first time after diagnosis.

Diabetes education: Education provided by medical professionals to help patients self-manage their diabetes.

Recuperation attitude: Preparation of feelings to treat as a diabetes patient.

Materials and Method

Creation of the draft scale

We created a draft scale by referring to previous research[7] and Herzberg's motivation-hygiene theory[8]. Motivation-hygiene theory was derived from an interview survey on job attitudes, and it describes two aspects of work that determine job satisfaction or dissatisfaction: motivation and hygiene. The motivation factor refers to work elements that increase job satisfaction and motivation such as a sense of achievement, responsibility, opportunities for personal growth, and a desire for self-realization. The hygiene factor refers to elements that determine job dissatisfaction, such as relationship with one's supervisor and working conditions; while addressing these factors can help to reduce job dissatisfaction, they do not necessarily increase satisfaction and motivation. Accordingly, both factors should be adopted simultaneously. We chose the motivation-hygiene theory for the scale in this study because its concepts are similar to patients' experiences based on previous research[7], and thus it may help in forging appropriate recuperation attitudes as a diabetes patient. In brief, in a previous study[7], patients' deeper understanding of diabetes corresponded to a responsibility to recuperate as a diabetes patient and being more confident about recuperation, which could be considered as patient's satisfaction with their recuperation. Meanwhile, patients who focused on improving their poor eating habits recuperated while feeling inadequate. Therefore, two factors—"motivation factor" and "hygiene factor"—are similar to recuperation for diabetes patients, which involves achieving the goal of or dealing with recuperation, and being satisfied with recuperation. Thus, we chose motivation-hygiene theory to develop a draft scale and interpreted the deep awareness of diabetes and preparedness to recuperate as "motivation factors," while concentrating on improving one's habits and obscuring diabetes as "hygiene factors." Furthermore, it was assumed that the recuperation attitude of diabetes patients could be explained using the two concepts of "motivation factor" and "hygiene factor." In particular, we created items for each factor based on a previous study[7]. In the draft scale, twenty-four items were created (Table 1). Items 1-11 are tentative contents as hygiene factors, which were created from the categories of patients who have obscure diabetes by reflecting on their poor eating habits and focusing on improving those habits in the previous studies[7]. Among these items, 1-3

Table 1. Items of the draft scale for evaluating recuperation attitude at the time of education for newly diagnosed type 2 diabetes

Items reflecting the "hygiene factor"	Items reflecting the "motivation factor"
1. I thought that overeating led to the onset of diabetes.	12 I thought that I was diabetic because of the painful symptoms.
2. I thought that overeating favorite foods other than meals led to the onset of diabetes.	13 I have directly met a diabetes patient with complications.
3. I thought that eating habits were closely related to my diabetes.	14 I have heard stories from patients with complications (i.e., dialysis or blindness).
4. I thought that the job of diabetics was to correct their diet.	15 I have heard stories from patients with complications (i.e., myocardial infarction or leg amputation).
5. I wanted to learn any knowledge on dealing with diabetes.	16 I thought that my body might develop a diabetic complication.
6. I wanted to learn how to fix my diet first of all.	17 I thought that I was lucky because I had no complications when I was diagnosed.
7. I wanted to create an environment to fix my diet.	18 I only wanted to prevent any complications.
8. I wanted to take care of my present life rather than the future.	19 I decided to undergo strict recuperation to prevent complications.
9. I thought that it was not important to undergo strict recuperation.	20 I decided to study about diabetes at first, without worrying about my diet.
10. I thought that I only had to be careful about my lifestyle.	21 I decided to study diabetes to develop a foundation for my recuperation.
11. I thought that I could control my diabetes if I could only fix my diet properly.	22 I thought that I had the responsibility to manage my own body with diabetes.
	23 I felt that working on my recuperation from diabetes was an important new job for me.
	24 I thought that I was prepared to live as a diabetes patient.

are composed of questions that reflect the meaning of life up to the diagnosis, while 4-11 are composed of contents regarding the kind of attitude toward subsequent medical treatment. Items 12-24 are tentative contents as motivation factors, which were created from a category of patients who developed an attitude towards preparing for medical treatment after a major event that instilled in them a deeper understanding of diabetes in the previous study[7]. From these items, 12-17 are composed of questions about the meaning of events that are impressive to the patient and 18-24 are composed of contents regarding the kind of attitude toward subsequent medical treatment.

Two nurses specializing in diabetes nursing were asked to revise the expressions of the items and to evaluate how easy it was to reply to each item. Subsequently, we carried out a pre-test with three diabetes patients, and received indications regarding confusing parts of the writing. We modified the items based on their responses and conducted a second pre-test with six patients. The face validity was secured through this process. All 24 items were retained for the final draft of the scale. Each item was answered on a six-point Likert scale, as follows: 1 = not at all applicable, 2 = not very applicable, 3 = somewhat applicable, 4 = slightly applicable, 5 = applicable, 6 = very applicable. The total score was calculated by summing the item scores.

Sample

The participants of this survey were patients with type 2 diabetes who received regular examinations and had undergone diabetes education. The reason for not limiting the participants' diabetic history is that, based on the results of previous studies[7], the length of the diabetic history is not important for clearly reflecting on education for newly diagnosed. We excluded patients with serious complications or cognitive disorders, who could not communicate in a conversation, and who had not received diabetes education. We gathered patients at some hospitals in different regions in a certain prefecture who worked with doctors and nurses specializing in diabetes. These hospitals provide diabetes education to outpatients as well as to hospitalized patients. It is mainly provided at outpatient facilities, where, medical staffs, such as doctors, nurses, or nutritionists, work together to provide lectures on diabetes, meals, exercise, and more. We asked doctors or nurses to cooperate with our study and to introduce patients to us who met the conditions. Thereafter,

either doctors or nurses from those hospitals or we explained the study and distributed the questionnaires to the patients. We collected answer sheets immediately or subsequently by mail.

Measures

We evaluated basic attributes of participants, including age, sex, body mass index (BMI), living with family or alone, duration of living with diabetes, treatments, complications, HbA1c concentration, timing of education for newly diagnosed, and impressions of education for newly diagnosed. Moreover, aside from the 24 items of the scale evaluating recuperation attitude at the time of education for newly diagnosed type 2 diabetes. We administered two other diabetes measures to examine the validity of the scale we developed: the 8-item Self-Efficacy Scale for Diabetes Self-care (SESD)[9] and the 17-item the Japanese Translated "The Summary of Diabetes Self-Care Activities Measure" (J-SDSCA)[10].

Statistical analysis

SPSS Statistics 22 was used for all the analyses. First, to evaluate the scale's construct validity, we conducted an exploratory factor analysis. We used the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity to ensure that the sample was suitable for factor analysis.

Second, to ensure the criterion-related validity, the scale was prepared in line with the findings of our previous study. That study showed that patients who had a deep understanding of diabetes and were prepared for recuperation through their education for newly diagnosed engaged in continued self-care with confidence. We assumed, therefore, that a higher total score on this indicated the acquisition of a stronger recuperation-oriented attitude as a diabetes patient through education for newly diagnosed. To determine if this were true or not, we evaluated the Spearman's correlation between the scale and the SESD and J-SDSCA.

Third, to evaluate the content validity, we had 10 nurses involved in diabetes nursing evaluate the items in terms of whether they were related to the attitudes toward recuperation after education for newly diagnosed type 2 diabetes. The nurses rated each item using a four-point scale of 1 = not relevant, 2 = somewhat relevant, 3 = quite relevant, and 4 = highly relevant. The item-level content validity index (I-CVI) and the average of the I-CVIs for all items on the scale (S-CVI/Ave) were calculated.

Finally, to evaluate the reliability of the scale, we used the Cronbach's alpha coefficient. The internal correlations were also confirmed through item-total (I-T) correlation analysis and good-poor analysis (G-P analysis).

Ethical considerations

This study was approved by the Kanazawa University Medical Ethics Review Committee (No.739-1) and the research hospitals. We explained patients to participate in this research freely, to protect personal information and to prevent data leakage and loss.

Results

Between May 2017 and March 2018, we distributed questionnaires to 174 patients at three hospital undergoing diabetes treatment, received responses from 128 (recovery rate: 73.6%). Of these, 107 responses were valid (effective response rate: 83.6%).

Characteristics of sample (Table 2)

The sample consisted of 64 males (59.8%) and 43 females (40.2%). Their mean age was 62.5±10.9 years. Their average duration of living with diabetes was 14.7 ±9.2 years, and their mean HbA1c concentration was 7.6±1.2%.

Patients typically received early for newly diagnosed less than 1 year after their diagnosis, and the mean was 2.7±3.9 years after their diagnosis. The topics that most impressed patients in education for newly diagnosed were eating habits (65 patients [60.7%]), complications (50 patients [46.7%]), diabetes (40 patients [37.4%]), exercise (29 patients [27.1%]), and their body (10 patients [9.3%]). Five patients (4.7%) reported no topic that had made a particular impression.

Item analysis

Among the 24 items of the draft scale, one item had a ceiling effect (i.e., the item mean + standard deviation > 6), while three items had floor effects (i.e., item mean – standard deviation < 1). One item did not

Table 2. Characteristics of participants

n=107

		Number of respondents (%)	Mean±SD
Age (years)			62.5±10.9
Sex	Male	64 (59.8%)	
	Female	43 (40.2%)	
Family	Family living together	96 (89.7%)	
	Living alone	11 (10.3%)	
Duration of living with diabetes	No answer	2	14.7±9.2
HbA1c (%)	No answer	4	7.6±1.2
BMI (kg/m²)	No answer	2	25.1±5.1
Treatments	Diet	58 (54.2%)	
	Exercise	42 (39.3%)	
	Internal medicine	101(94.4%)	
	Injection	38 (35.5%)	
Complications	Neuropathy	12 (11.2%)	
	Retinopathy	17 (15.9%)	
	Nephropathy	5 (4.7%)	
	Macroangiopathy	7 (6.5%)	
	None	72 (67.3%)	
	No answer	7	
Timing of education for newly diagnosed	Before diagnosis	2 (1.9%)	2.7±3.9
	At diagnosis	35 (32.7%)	
	Less than 5 years after diagnosis	27 (25.2%)	
	5–10 years after diagnosis	13 (12.1%)	
	10 years or more after diagnosis	16 (15.0%)	
	Do not remember	10 (9.3%)	
	No answer	4 (3.7%)	

correlate with the total score significantly (r = -0.02, p=0.8) in the I-T correlation analysis. Thus, these five items were deleted.

Construct validity

The exploratory factor analysis was conducted on 19 items. We used the principal factor method with a promax rotation. The KMO value (0.77) and Bartlett's test ($p<0.01$) both indicated that the sample was adequate for factor analysis. With reference to Kaiser-Guttman criterion and scree plot, we selected all factors with eigenvalues of >1. The factor analysis was repeated after excluding items with communalities close to 0, factor loadings of less than 0.35, and high cross-loading (i.e., had high factor loadings on multiple factors). Finally, 16 items in 4 factors were extracted. The cumulative contribution before rotation for the four factors was 65.58%.

The factor structure is illustrated in Table 3. Factor 1 comprised 7 items corresponding to preparedness as a patient with diabetes and efforts to continue recuperation; thus, it was named "undertaking recuperation as a diabetes patient." While item 4 (I thought that the job of diabetics was to correct their diet) had a somewhat higher factor loading for Factor 2, it was adopted for Factor 1 because diet is considered an important element for diabetes recuperation.

Factor 2 consisted of 4 items relating to reflecting on eating habits and learning to fix one's own diet. Thus, it was named "looking back on a bad diet and

Table 3. Factor analysis of the scale for evaluating recuperation attitude at the time of education for newly diagnosed type 2 diabetes

n=107

	Factor			
	1	2	3	4
Factor 1: Undertaking recuperation as a diabetes patient				
19 I decided to undergo strict recuperation to prevent complications.	0.794	0.047	-0.11	-0.14
22 I thought that I had the responsibility to manage my own body with diabetes.	0.793	-0.116	0.085	-0.054
24 I thought that I was prepared to live as a diabetes patient.	0.788	-0.289	0.121	-0.043
23 I felt that working on my recuperation from diabetes was an important new job for me.	0.749	-0.055	0.17	-0.087
5 I wanted to learn any knowledge on dealing with diabetes.	0.582	0.138	0.065	0.073
4 I thought that the job of diabetics was to correct their diet.	0.535	0.373	-0.239	0.067
7 I wanted to create an environment to fix my diet.	0.483	0.238	-0.013	0.194
Factor 2: Looking back on poor diet and trying to fix it				
3 I thought that eating habits were closely related to my diabetes.	-0.16	0.884	0.021	-0.062
1 I thought that overeating led to the onset of diabetes.	0.007	0.752	-0.062	-0.054
2 I thought that overeating favorite foods other than meals led to the onset of diabetes.	-0.195	0.64	0.298	-0.128
6 I wanted to learn how to fix my diet first of all.	0.377	0.423	0.112	0.14
Factor 3: Trying to study diabetes comprehensively				
20 I decided to study about diabetes at first, without worrying about my diet.	0.071	0.177	0.747	0.067
21 I decided to study diabetes to develop a foundation for my recuperation.	0.298	-0.075	0.682	0.011
Factor 4: Doing what can be done now				
10 I thought that I only had to be careful about my lifestyle.	-0.14	-0.078	0.000	0.812
8 I wanted to take care of my present life rather than the future.	-0.062	-0.075	0.074	0.569
11 I thought that I could control my diabetes if I could only fix my diet properly.	0.002	-0.055	0.008	0.48
Cumulative contribution before rotation (%)	35.79	48.89	59.05	65.58
Load sum square after rotation	4.87	3.33	2.55	1.96
Inter-factor correlations Factor 1	1	0.466**	0.650**	0.146
Factor 2		1	0.354**	0.128
Factor 3			1	0.162
Factor 4				1
Cronbach's coefficient α scale: 0.86	0.87	0.76	0.82	0. 62

Pattern matrix formed via the principal factor method

trying to fix it." Item 6 (I wanted to learn how to fix my diet first of all) had a somewhat higher factor loading for Factor 1, but it was included in Factor 2 because it specifically indicated that eating habits had to be corrected.

Factor 3 comprised 2 items related to the study of diabetes. Thus, it was named "trying to study diabetes comprehensively."

Finally, Factor 4 consisted of 3 items related to trying to live in the now while also worrying about the future of their diabetes. Thus, it was named "doing what can be done now."

Criterion-related validity

The correlation analysis of the scale with the SESD and J-SDSCA is shown in Table 4. The Spearman's correlation coefficients between the total score of developed scale and the total scores of the SESD and J-SDSCA were 0.26 and 0.28, respectively ($p<0.01$). However, there was a lack of correlations between the factor 2 and factor 4 scores and the total scores of the SESD and J-SDSCA.

Content validity

For 15 of the 16 items, the I-CVIs ranged from 0.80 to 1.00; in the remaining item, the I-CVI was 0.70. The S-CVI/Ave was 0.90.

Reliability

The Cronbach's α coefficient of this scale was 0.86, and those of the factors ranged from 0.62 to 0.87 (Table 3). For the I-T correlation analysis, significant

Table 4. Correlations between the developed scale, Self-Efficacy Scale for Diabetes self-care (SESD), and the Japanese Translated "The Summary of Diabetes Self-Care Activities Measure" (J-SDSCA)

n=107

	SESD	J-SDSCA
Scale for evaluating recuperation attitude at the time of education for newly diagnosed type 2 diabetes	.255**	.282**
Factor 1: Undertaking recuperation as a diabetes patient	.298**	.312**
Factor 2: Looking back on a poor diet and trying to fix it	.069	.154
Factor 3: Trying to study diabetes comprehensively	.243*	.258**
Factor 4: Doing what can be done now	.167	.041

Spearman's rank correlation coefficient

**p<0.01, *p<0.05

Table 5. Difference in total score between high and low scoring groups on the developed scale

n=107

	High scoring group n=60	Low scoring group n=47	p
Scale for evaluating recuperation attitude at the time of education for newly diagnosed type 2 diabetes	76.3	60.4	.000
Factor 1: Undertaking recuperation as a diabetes patient	34.3	25.9	.000
Factor 2: Looking back on a poor diet and trying to fix it	19.7	16.0	.000
Factor 3: Trying to study diabetes comprehensively	9.2	7.0	.000
Factor 4: Doing what can be done now	13.1	11.6	.001

Mann-Whitney U test

The average value of the total score of the scale was used to divide participants into a high score group and a low score group.

positive correlations were found between the total score of the scale and all 16 items (Spearman's correlation coefficients, r = 0.26 to 0.75, p<0.01). In the G-P analysis, the average value of the total score of the scale was used to divide participants into a high score group and a low score group, the high scoring group had significantly higher total and factor scores (p<0.01) than did the low scoring group. Moreover, the high scoring group had significantly higher item scores (p<0.05) than did the low scoring group (Table 5).

Discussion

Scale reliability and validity

The factor analysis yielded four factors with 16 items, with a cumulative contribution before rotation of 65.58%. These results suggest that the scale has good construct validity. Moreover, the criterion-related validity was assured because of the moderately strong correlation coefficients between this scale and the SESD and J-SDSCA (ρ = 0.26 and 0.28 respectively). Finally, the content validity was secured, given that the S-CVI/Ave of the scale was 0.90, which satisfied the standard cut-off of 0.90 recommended by Polit[11]. The Cronbach α coefficient of factor 4 was a little low at 0.62, but overall scale was 0.86.

The reliability was also confirmed in the I-T correlation analysis, which showed significant positive correlations between the total score and each item score, while the G-P analysis revealed significant differences in scores between high scoring and low scoring groups. Thus, the internal consistency of the scale was high.

Taken these results together with the fact that the study participants roughly reflected the Japanese diabetes population[12], we believe that the scale can be used to evaluate recuperation attitudes at the time of education for patients with newly diagnosed type 2 diabetes.

Features of the factor structure

As noted above, our previous study[7] using qualitative methods clarified the experiences of education for newly diagnosed and subsequent recuperation of patients with type 2 diabetes. Drawing on that study, we assumed that the attitudes of diabetes patients toward self-care and education for newly diagnosed formed two distinct

factors similar to those described in motivation-hygiene theory; accordingly, a draft scale was created with reference to this theory. The factor analysis yielded four factors that appeared to correspond to the two elements of this theory: the "motivation factor" and the "hygiene factor."

Factor 1 (undertaking recuperation as a diabetes patient) and Factor 3 (trying to study diabetes comprehensively) corresponded to the motivation factor. These two factors were positively correlated with SESD and J-SDSCA, and may be necessary for active self-care. If diabetes education did not work well, patients were in a situation where their recuperation had declined due to a lack of awareness of being diabetic and a decline in their desire to continue recuperation, resulting in the need for re-education[13]. The results of this study suggest that it may be a weak attitude toward undertaking recuperation as a diabetes patient and trying to study diabetes comprehensively were major causes of recuperation problems in patients. Thus, education for newly diagnosed should focus on improving the elements of Factors 1 and 3, and thereby support patients in preparing for recuperation.

On the other hand, Factor 2 (looking back on poor diet and trying to fix it) and Factor 4 (do what can be done now) corresponded to the hygiene factor. Neither of these factors correlated significantly with the SESD and J-SDSCA, and thus may not be relevant to active self-care. However, Factor 2 was positively correlated with Factors 1 and 3. The results of the G-P analysis revealed that the scores of all factors were higher in the high scoring group. After their diagnosis, patients tend to experience a degree of regret or discouragement about their lives prior to the diagnosis, which may help facilitate their desire to engage in self-care[14]. Thinking about the need to change one's life and having confidence in balancing treatment and desire can be elements of self-care[15]. Living with diabetes may cause patients to perceive their diagnosis as a burden, which can affect glycemic control[16]; it is therefore necessary to deal with the dissatisfaction caused by diabetes by treating it with ease and thinking about first of all changing eating habits, which are evaluated by Factors 2 and 4 in this scale. Therefore, these factors are necessary for creating a recuperation-oriented attitude for diabetes patients. In education for newly diagnosed, it is necessary to confirm whether patients develop the elements of these factors and to support them in adapting to recuperation.

Clinical indications

This scale is useful for two ways. First, this scale can be used to assess how patients who have already completed their education for newly diagnosed benefitted from the education, and it may provide guidance for re-education by highlighting areas in which the participants obtained low scores. Second, for patients undergoing education for newly diagnosed, the scale can be used to form of recuperation attitudes, which will allow for the carrying out of education for newly diagnosed that targets the items of this scale.

Limitations of this study and future issues

This study was a survey of patients with type 2 diabetes without severe complications. Therefore, it is necessary to confirm the results of this study among patients with severe complications at the time of education for newly diagnosed or for patients with diabetes resulting from other diseases.

Human rights statement and informed consent

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and/or with the Helsinki Declaration of 1964 and later versions. Informed consent or substitute for it was obtained from all patients included in the study.

Conflict of interest

The authors declares that we have no conflict of interest.

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初期教育時における 2 型糖尿病患者の療養心構え評価尺度の開発

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要　旨

糖尿病診断後，早期より厳格な血糖コンロトールを行うことが合併症予防に必要であり，診断後患者が初めて受ける糖尿病教育（以下，初期教育とする）が重要である。初期教育では，患者が糖尿病であることを理解し療養への心構えを持つことが重要であり，これらを評価する指標が必要になると考えた。このことより，本研究の目的は初期教育時における 2 型糖尿病患者の療養心構え評価尺度を開発し，信頼性と妥当性を検討することである。先行研究および動機づけ―衛生理論を参考に 24 項目の尺度原案を作成し，2 型糖尿病患者 174 人を対象にアンケート調査を行った。

探索的因子分析の結果，第 1 因子【糖尿病患者として療養していくことを引き受ける】，第 2 因子【食生活の悪さを省み直そうとする】，第 3 因子【総合的に糖尿病を学ぼうとする】，第 4 因子【今できることをする】の 4 因子 16 項目が抽出された。回転前の累積寄与率は 65.58％であり，構成概念妥当性が確認された。本尺度は糖尿病セルフケア自己効力感尺度および日本語版糖尿病セルフケア行動評価尺度と有意な正の相関が認められ，基準関連妥当性が確認された。本尺度の S-CVI/Ave は 0.90 であり，内容妥当性が認められた。尺度全体のクロンバック α 係数は 0.86 であり，信頼性が確保された。以上のことより，本尺度の信頼性と妥当性が認められた。

本尺度は，初期教育時における 2 型糖尿病患者の療養心構えの評価に役立てられると示唆された。