

Factors That Promote Autonomous and Controlled Motivation in Self-management Behavior of Hemodialysis Patients

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Abstract: This study examined the differences and primary factors from the impact of autonomous motivation and controlled motivation on the self-management behavior of hemodialysis patients. Anonymous, self-describing questionnaires were used for research on nine different dialysis facilities of 413 people who regularly visit. From using the primary factor results of multiple regression analysis, that took autonomous motivation and controlled motivation as the dependent variable, a path diagram was created that led to each motivation. The acknowledgement of autonomy support facilitated whether it was autonomous motivation or controlled motivation (The standardized coefficient was 0.385, 0.346, $p < 0.0001$). Positive evaluation coping skills were a primary factor that promoted autonomous motivation, while trait anxiety, disorders of social activities, and lack of motivation were primary factors that promoted controlled motivation. In order to raise the autonomous motivation to promote self-management behavior in patients with hemodialysis treatment, situations that easily cause amotivation and anxiety, as well as tendencies for depression should be assessed. Also the encouragement to attain positive evaluation coping skills to support patient autonomy appears to be effective.

Key words: Patients with hemodialysis treatment, autonomous motivation, controlled motivation, self-management behavior.

I. Introduction

In recent years, dialysis patients in Japan have found themselves in need of complicated skills and fine-grained support for their self-control with an increase of aged patients and those of renal insufficiency from diabetes [1], and a need has been emphasized for the development of a new method for supporting dialysis patients [2]. Against such a backdrop, in order to obtain a clue for a new support method, the author has taken interest in motivating self-regulation based on the self-determination theory model of health care by Deci et al. [3, 4]. This theory explains the relation whereby, in the field of healthcare, a patient's perception that he/she has received autonomy-respecting support by a healthcare worker (perceived autonomy support) increases

autonomous motivation, whose increase in turn facilitates the sense of competence, whose increase improves self-regulating behavior and physical outcomes. Based on this theory, it has been revealed that it is effective for dialysis patients to perform fluid management well to have autonomous motivation that facilitates the sense of competence [5].

Studies regarding changes in health management behavior based on the self-determination theory have reported that results such as weight loss or improved glucose levels were obtained in weight [6] and glycemic [7, 8] control in overweight persons. While there have been reports of various management behavior improvements, physical amelioration, Quality of Life (QOL) [6], and satisfaction in treatment [9] brought about as a result of changes in "autonomous motivation" or the sense of competence, as a factor facilitating autonomous motivation, autonomy support, a constitutive concept of the theory,

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was measured in most studies [7-11]. Furthermore, there have been a small number of reports regarding factors affecting autonomous motivation. While a study targeting patients of substance-related disorders [12] cites a strong awareness of drug disorders at an early point of time as one factor, the study neither examines the influence which patients' basic attributes and psychological factors have on autonomous motivation nor compares that factor with factors facilitating controlled motivation which has a lower degree of self-determination and is deemed to lack persistence.

This study is thus intended to clarify what factors affect and facilitate the autonomous motivation in dialysis patients and how it differs from a process leading to controlled motivation.

2. Definition of Terms

In this study, the following terms are defined as below.

Autonomous motivation: motivation whereby one initiates and maintains behaviors out of interests and values in the relevant task;

Controlled motivation: motivation with a low degree of self-determination because reasons for behaviors are given by others.

3. Subject and Method

3.1 Subject

The subjects of this survey are hemodialysis outpatients at nine dialysis facilities in the Tokyo Metropolitan area who are without any cognitive problem and capable of responding to a self-filling questionnaire.

3.2 Survey Method

After obtaining a consent from each of respondents upon describing the survey content both in written and oral forms, fundamental information such as their dry weight, body weight before and after dialysis, and underlying disease was collected from their clinical

records. In so doing, in order to guarantee respondents' anonymity, no name was indicated on each sheet of record collected from clinical records, which was attached to a blank questionnaire booklet distributed to a subject and collected via mail.

3.3 Survey Description

3.3.1 Selection of Influential Factors

Even today, when treatment methods have developed, dialysis patients are placed in a situation with many stressors such as "anxiety about the future" or "long hours of treatment" and are known to adjust emotions constantly by mitigating anxiety and fixing feelings as they lead their life [13]. In particular, with dialysis patients who have a non-diabetic underlying disease, there is a report that a significant positive correlation was found between the rate of weight increase and the State-Trait Anxiety Inventory (STAI), which measures the degree of anxiety [14]. Furthermore, depression is often found in dialysis patients [15], and it has also been reported in Japan that the incidence of depression and neuroticism is high in dialysis patients in comparison with that in ordinary healthy individuals [16]. In specific, dialysis patients with depressive symptoms have been reported to have worse fluid and dietary adherence [17] and a larger weight gain [18] than those without such symptoms. It is thus possible that the presence or absence of depressive symptoms exerts an influence on whether a patient can maintain self-management behaviors. In addition, among preceding studies on dialysis patients' coping style, there is a report that there is a negative correlation between depression and the use of problem-focused coping and a positive correlation between depression and emotion-focused coping [19]. There is also a report that avoidance and inhibition is positively correlated with depression and anxiety and that consulting for problem solving enhanced the self-care implementation intention of patients with a low orientation to want to do their business by themselves [20]. It is thus possible that

coping styles influence self-management behavior via mental health. Based on the above, the absence or presence of diabetes, anxiety, depression, and copying styles are assumed as influential factors for motivation for self-management.

3.3.2 Basic Attributes of Patients

As basic attributes of patients, questions were asked about their age, sex, dialysis history, occupational status, residential status (living alone vs. living with a family member), marital status, educational status, and underlying diseases (including the presence or absence of diabetes).

3.3.3 Perceived Autonomy Support

For the measurement of perceived autonomy support, the Health-Care Climate Questionnaire (HCCQ) was used, which is a scale developed and created by Deci et al. for measuring whether patients perceive that they are given autonomy support. The HCCQ is a 6-item and 7-point scale with 1-factor structure which includes questions such as “I feel my nurse understands how I see things with respect to my fluid management”, “My nurse tries to understand how I see my fluid management before suggesting any changes”, and “My nurse listens to how I would like to do things regarding my fluid management”. Yamamoto et al. [4] have already created its Japanese version and verified the reliability and validity of the version. The Cronbach’s α coefficient for the scale was 0.92 in this study.

3.3.4 Motivation for Self-management

For the measurement of motivation for self-management, the Treatment Self-Regulation Questionnaire (TSRQ) was used, which assesses reasons for patients’ performance of self-management behaviors, or the locus of causality, developed and created by Deci et al. In the TSRQ, each question asks whether a reason it describes is a reason for a respondent to perform better fluid management. The TSRQ is a 15-item and 7-point scale with 3-factor structure comprising “autonomous motivation,” exemplified by “because I want to take responsibility

for my own health”, “controlled motivation”, exemplified by “because I feel pressure from others to perform fluid management”, and “amotivation”, exemplified by “I really don’t think about it.” Yamamoto et al. [4] have created its Japanese version and verified its reliability and validity. The Cronbach’s α coefficient for each factor in this study was 0.83 for autonomous motivation, 0.82 for controlled motivation, and 0.67 for amotivation.

3.3.5 Sense of Competence for Self-management

For the measurement of the sense of competence for self-management, the Perceived Competence Scale (PCS) was used, which is a scale that measures the sense of competence, feelings about being able to bring about a change in behaviors, also developed and created by Deci et al. The PCS is a 4-item and 7-point scale with 1-factor structure composed of the following questions: “I feel confident in my ability to continue fluid management”, “I feel able to continue fluid management from now on”, “I am capable of maintain fluid management permanently”, and “I am able to achieve my goals in fluid management”. The Cronbach’s α coefficient for the scale was 0.95 in this study.

3.3.6 Anxiety (State and Trait Anxiety)

For the measurement of anxiety, a new version of the State-Trait Anxiety Inventory (STAI) was used. This is a scale developed by Spielberger and adapted by Hidano et al. [21] to the Japanese culture to measure anxiety as an individual’s emotional state and anxiety as personality trait of each individual, which are called state anxiety and trait anxiety, respectively. State anxiety is a transitory situational response to an event arousing anxiety, and trait anxiety is a relatively stable characteristic of an individual as a tendency to respond with anxiety.

3.3.7 Stress Coping Styles

For the measurement of stress coping styles, the Stress Coping Inventory (SCI) was used, which is a scale developed for grasping what dispositions there are to respond to and cope with stress adapted to

Japanese by Motoaki et al. This is based on Lazarus's theory of stress [22] and classifies how individuals respond to stressful situations into 2 coping strategies (problem-focused and emotion-focused) and 8 coping styles (planful problem solving, confrontive coping, seeking social support, accepting responsibility, self-controlling, escape-avoidance, distancing, and positive reappraisal) to confirm which coping strategy and coping style tend to be the strongest [23]. It has 64 questions answered by a 3-point scale, with 2 for "agree", 1 for "somewhat agree", and 0 for "disagree". According to the SCI, it is considered desirable to have sufficient flexibility for using all coping methods freely.

3.3.8 Mental Health

For the measurement of mental health, the General Health Questionnaire-28 (GHQ-28) was used. The GHQ-28 questions use a 4-point scale, a respondent is supposed to answer questions such as "Been managing to keep yourself busy and occupied?" or "Been able to enjoy your normal day-to-day activities?" by "Much more than usual", or "rather more than usual" (0 assigned to either response) or "no more than usual", or "not at all" (1 to either response) and questions such as "Felt that life isn't worth living?" or "Been feeling nervous and strung-up all the time?" by "not at all" or "no more than usual" (0 to either) or "rather more than usual", or "much more than usual" (1 to either). The higher the score is, the greater a decline in the patient's mental health is. The GHQ-28 is divided into four subscales: "somatic symptoms", "anxiety and insomnia", "social dysfunction", and "severe depression".

3.3.9 Self-management Behaviors

For the measurement of self-management behaviors, the "weekly weight gain rate" was used, which is obtained by dividing a weight gain after one week of dialysis, which is considered to be less affected by the dialysis method and medication and thus reflect self-management behaviors, by the patient's dry weight.

3.4 Data Analysis

First of all, in order to clarify the relation between the weekly weight gain rate, which is an indicator of self-management behaviors, and the score for each scale and basic attributes, relevant variables and their dispositions were confirmed by confirming correlation coefficients. Descriptive statistics, *t*-test, and correlation coefficients were confirmed for the attributes and motivation scales.

Subsequently, the goodness-of-fit of the predicted path diagram created based on the result of the multiple regression analysis taking autonomous and controlled motivation as dependent variables was examined by covariance structure analysis. The comparative fit index (CFI), the normed fit index (NFI), and the root mean square error of approximation (RMSEA) were used for evaluating models, and a model was judged to fit well if CFI and NFI are 0.90 or above and RMSEA is 0.05 or less. For statistical programs, SPSS 23.0 J for Windows and AMOS 23.0 were used. All tests were two-sided and applied at a significance level of 5%.

3.5 Ethical Considerations

This study was conducted upon approval by the ethics committee of the university the author belongs to and the head of cooperating facilities. In written and oral form, the investigator explained to patients subject to the study the significance and objective, content, and method of the study, freedom from disadvantage due to non-participation, freedom to withdraw, the protection of personal information, a possibility of publishing the result, etc. A consent was deemed to have been obtained when a subject signs the consent form after confirming their intent to participate in the survey.

4. Results

4.1 Profile of Subjects

The total number of patients at cooperating

facilities (3 dialysis units in general hospitals and 6 dialysis clinics) subject to the study was 413. Questionnaire booklets were distributed to 337 of them from whom a consent was obtained after briefing and collected from 260 patients. The response rate was 77.15%. Among them, 250 respondents with no missing value in the TSRQ, which measures motivation for self-management, were subjected to analysis (effective response rate: 60.53%). Details of attributes are shown in Table 1, and the score per each scale is shown in Table 2 for influential factors.

4.2 Relation between Motivation and Self-management Behaviors

In examining the relation between the score for each self-determination theory measurement scale and the weekly weight gain rate, because “autonomous motivation” and “controlled motivation” were in a weak correlation with age ($r = 0.22, p = 0.001$) and

dialysis history ($r = 0.17, p = 0.001$), respectively, partial correlation coefficients were confirmed by controlling these two variables (Table 3). As a result, autonomy support correlated positively with “autonomous motivation”. “Autonomous motivation” correlated positively with the sense of competence. The sense of competence correlated negatively with the weight gain rate. Because relationships proposed by the self-determination theory were thus confirmed, it was judged possible to proceed with further investigations based on the ideas of this theory.

4.3 Relations between Motivation and Attributes or Different Scales

No significant relation was found between motivation and sex, marital status, or residential status. Only “amotivation” exhibited a significantly high value (t -test, $p = 0.004$) in the group without occupation. “Autonomous motivation” also had a moderate level

Table 1 Details of Attributes.

Demographics	Item	Frequency	%
Sex	Male	174	69.6
	Female	73	29.2
	No answer	3	1.2
Primary diagnosis (cause of renal failure)	Diabetes	70	28.0
	Others	180	72.0
Occupational status	Employed	110	44.0
	Unemployed	135	54.0
	No answer	5	2.0
Residential status	With Family	206	82.4
	Alone	39	15.6
	No answer	5	2.0
Educational status	Primary school	32	12.3
	High School	80	30.8
	Vocational school	24	9.2
	Associate Degree	12	4.6
	Graduate	92	35.4
	Postgraduate	14	5.4
	No answer	6	2.3
Marital status	Not married	83	31.9
	Married	170	65.4
	No answer	7	2.7
Age (average)		62.87 ± 11.83 years	
Length of time on dialysis (average)		11.35 ± 9.14 years	
Weekly weight gain rate (average)		11.72 ± 3.97 %/week	

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Table 2 The score per each scale.

	Subscale	Mean (\pm SD)	Minimum to maximum	Range	
STAI	State anxiety	40.25 \pm 10.65	20~78	20~80	
	Trait anxiety	41.00 \pm 11.73	20~77	20~80	
	Somatic symptoms	2.29 \pm 1.81	0~7	0~7	
	Anxiety/insomnia	1.96 \pm 1.96	0~7	0~7	
GHQ-28	Social dysfunction	1.15 \pm 1.66	0~7	0~7	
	Severe depression	0.88 \pm 1.69	0~7	0~7	
	Total scale	6.29 \pm 5.67	0~27	0~28	
	Problem-focused	24.21 \pm 12.55	0~59	0~64	
	Emotion-focused	22.59 \pm 10.56	0~45	0~64	
	Planful problem-solving	7.14 \pm 4.08	0~16	0~16	
	Confrontive coping	4.44 \pm 2.61	0~11	0~16	
	Seeking social support	4.12 \pm 2.70	0~15	0~16	
	SCI	Accepting responsibility	6.63 \pm 4.03	0~16	0~16
		Self-controlling	6.66 \pm 3.67	0~16	0~16
Escape-avoidance		4.12 \pm 2.70	0~12	0~16	
Distancing		6.55 \pm 3.30	0~16	0~16	
Positive Reappraisal		7.24 \pm 4.11	0~16	0~16	

Table 3 Partial correlation coefficient between motivation and self-management behavior (control variable: age, dialysis history) $n = 250$.

		Autonomous motivation	Control motivation	Amotivation	PCS	Weightgain rate
HCCQ	Perceived autonomy-support	0.40***	0.35**	0.06	0.11	-0.07
TSRQ	Autonomous motivation	1	0.27***	-0.10	0.49***	-0.14
	control motivation		1	0.35***	0.05	0.10
	amotivation			1	-0.09	0.08
PCS	Competence				1	-0.24***
Weekly weight gain rate from DW						1

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

of correlation with problem-focused coping ($r = 0.37$ $p = 0.000$), emotion-focused coping ($r = 0.38$ $p = 0.000$), and positive reappraisal coping ($r = 0.43$ $p = 0.000$). “Controlled motivation” did not correlate with any of coping items.

4.4 Confirmation of Influential Factors for Autonomous Motivation and Controlled Motivation

In order to confirm factors affecting motivation for self-management, a multiple regression analysis was conducted by using the stepwise method, taking scores for autonomous and controlled motivation, subscales of the TSRQ, as dependent variables and patients' attributes and scores for other scales

(excluding the sense of competence and the weight gain rate in light of the phenomenal context) as independent variables (Tables 4-7). First, an analysis was conducted by taking “autonomous motivation” as a dependent variable, and “perceived autonomy support” and “positive reappraisal coping” were variables that remained. Furthermore, a multiple regression analysis was conducted by taking “perceived autonomy support” as a dependent variable, and “dialysis starting age” and “social dysfunction” remained. As “positive reappraisal coping” is considered as a thinking pattern which patients themselves have an element of their individuality, no further analysis was conducted.

Table 4 Multiple regression analysis with “autonomous motivation” as a dependent variable.

Independent variable	Standardised partial regression coefficient (β)	VIF
Perceived autonomy support	0.460***	1.025
Positive reappraisal coping	0.342***	1.025
R ²	0.378	F
Adjusted R ²	0.366	33.103

*** < 0.001 the stepwise method.

Table 5 Multiple regression analysis with “perceived autonomous support” as a dependent variable.

Independent variable	Standardised partial regression coefficient (β)	VIF
Dialysis starting age	0.352***	1.000
Social dysfunction	-0.216*	1.000
R ²	0.172	F
Adjusted R ²	0.157	11.246

* < 0.05; *** < 0.001 the stepwise method.

Table 6 Multiple regression analysis with “controlled motivation” as a dependent variable.

Independent variable	Standardised partial regression coefficient (β)	VIF
Perceived autonomy support	0.401***	1.085
Trait anxiety	0.242**	1.060
Amotivation	0.223**	1.026
R ²	0.252	F
Adjusted R ²	0.230	11.460

** < 0.01; *** < 0.001 the stepwise method.

Table 7 Multiple regression analysis with “amotivation” as a dependent variable.

Independent variable	Standardised partial regression coefficient (β)	VIF
Educational status	-0.267**	1.029
Presence of diabetes	0.224**	1.029
R ²	0.142	F
Adjusted R ²	0.125	8.513

** < 0.01 the stepwise method.

Next, a multiple regression analysis was conducted following the same procedure with regard to “controlled motivation”, which is said to be different in nature from “autonomous motivation”, and “perceived autonomy support”, “trait anxiety”, and “amotivation” remained. Because, among them, “perceived autonomy support” had already been analyzed and “trait anxiety” is considered as a relatively stable characteristic of an individual, a further analysis was conducted only with regard to “amotivation.” Variables that remained were

“educational status” and “presence or absence of diabetes.”

4.5 Examination of Causal Relations among Factors for Motivation for Self-management

Taking into account variables that remained after multiple regression in the preceding subsection, a path diagram was created representing relations leading to “autonomous motivation” and those leading to “controlled motivation”, and the one with the best goodness-of-fit was adopted (Figs. 1-3). In the path

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diagram of relations leading to “autonomous motivation”, a model with variables remaining after stepwise regression, which had the best goodness-of-fit, was adopted without any modification or addition (Fig. 1). On the other hand, with relations leading to “controlled motivation”, the trait anxiety and social dysfunction ($r = 0.54, p = 0.000$), the presence or absence of diabetes (dummy variable used), and the dialysis

starting age ($r = 0.33, p = 0.000$) were in a correlation. A model was thus created which included relations with those variables in addition to variables remaining after stepwise regression (Fig. 2). The exclusion of the dialysis starting age, confirmed as a factor for perceived autonomy support in the preceding subsection, enhanced the overall goodness-of-fit, however, even though it did not make the influence of

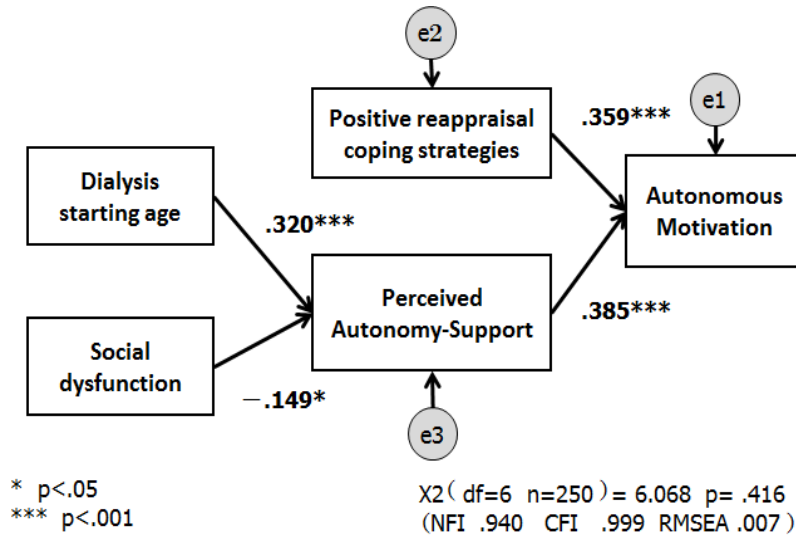


Fig. 1 Path diagram of relations leading to “autonomous motivation”.

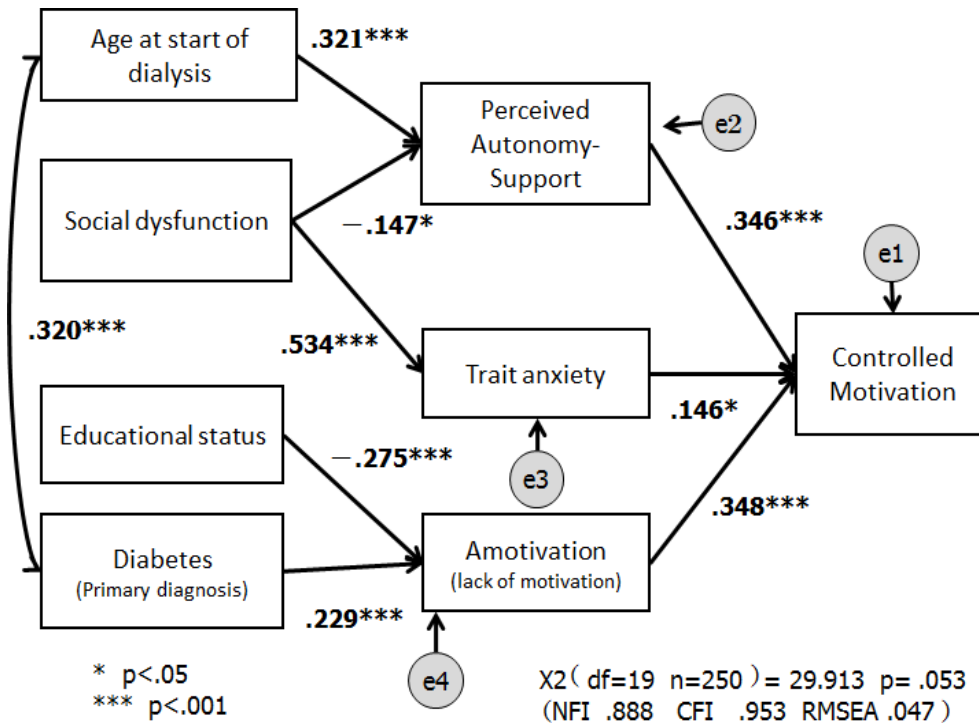


Fig. 2 Path diagram of relations leading to “controlled motivation” initial analysis.

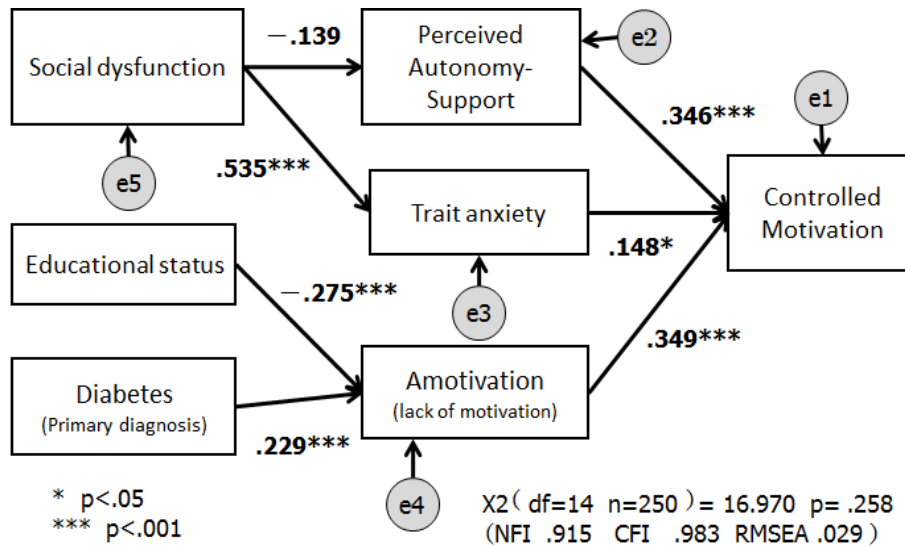


Fig. 3 Path diagram of relations leading to “controlled motivation” final version.

social dysfunction on perceived autonomy support significant. Therefore, the result shown in Fig. 3 was adopted.

5. Discussion

5.1 “Perceived Autonomy Support” as a Factor for Motivation for Self-management

As factors for motivation for self-management, a multiple regression analysis was conducted for both autonomous motivation and controlled motivation, and perceived autonomy support was confirmed as a variable remaining after multiple regression by the step-wise method. As it was confirmed as the factor with the greatest impact on each type of motivation in terms of contribution rate, perceived autonomy support was revealed to be an important concept for motivation for performing self-management.

Autonomous motivation and controlled motivation are both conceived as extrinsic motivation, however, as opposed to intrinsic motivation [24], and these two types of extrinsic motivation which are distinguished by the degree of self-determination are located along the continuum axis of the concept of self-determination [24]. As people can take in a value or regulation for self-management if their desire for autonomy or relatedness is satisfied (internalization),

controlled motivation is thus considered to change to autonomous motivation [25]. In this study, however, controlled motivation, too, was facilitated by perceived autonomy support. This is considered to be because autonomy support facilitates people in a state where they have less motivation for self-management or are very non-self-determined to begin to have motivation for self-management even if in controlled forms. A possibility was thus suggested that autonomy support not only facilitates motivated people to act more autonomously but also provides an important support to patients who find themselves difficult to be motivated.

Furthermore, the result showed that perceived autonomy support is facilitated by a higher dialysis starting age and less social dysfunction. This is inferred to be because patients starting dialysis at a higher age tend to tell their ideas about self-management and their requests to health professionals positively because they are in an environment enabling them to concentrate on self-management more than patients starting dialysis at a younger age, as the former often have less social roles for reasons including that they have already retired, and because aged individuals cannot easily change life habits they have followed so far. In addition, this can also be influenced by the fact that patients who started dialysis young and thus came

to have a long dialysis history tend to have the sense that they are supported by health professionals less because their self-management has become stable to result in less opportunities to discuss self-management again with health professionals. It was, however, associated with a patient's dialysis starting age that diabetes is among their underlying diseases, which may have caused a difference in the goodness-of-fit of the analysis of a path leading to controlled motivation.

While social dysfunction is measured by the question asking if you have "been able to enjoy your normal day-to-day activities" and "been managing to keep yourself busy and occupied", it is often the case that day-to-day activities (daily life) have been hampered by self-management entailed by dialysis. Consequently, it is possible that patients cannot genuinely accept support concerning self-management. "Social dysfunction" is a subscale of the GHQ-28 and associated with depression (subscale "severe depression"). There is a report that an improvement in the sense of self-efficacy is not found in patients with depression even if their anxiety or depressive mood is reduced [26], trying to respect autonomy may make such patients impatient or strain themselves. Therefore, it is considered important that healthcare professionals provide autonomy support rather to long-term dialysis patients who tend to be perceived as stable owing to their long dialysis history by evaluating the magnitude of dialysis's impact on patients' daily life and paying attention to the presence or absence of depression in them.

5.2 Difference between Autonomous and Controlled Motivation

In this survey, in comparison with the fact that autonomous motivation is positively correlated with the sense of competence facilitating self-management behaviors, controlled motivation is in a positive correlation with amotivation and not associated with the sense of competence which in turn associated with the weight gain rate. It can, therefore, be said to be

effective to facilitate autonomous motivation in order to facilitate self-management. What cases then lead to autonomous or controlled motivation?

In this survey, other than perceived autonomy support, the factor of positive reappraisal coping resulted in an increase in autonomous motivation. On the other hand, controlled motivation increased in cases where there are many elements of anxiety or amotivation. While a preceding study on coping by dialysis patients [13] reported that escape-avoidance coping was used more often than problem-focused coping, this survey reveals that autonomous motivation is in correlations with three kinds of coping. Patients with high autonomous motivation are considered to cope with problems by positively using many kinds of coping strategies. While Welch et al. [27] say that dialysis patients using emotion-focused coping strongly felt psychological stress, this survey showed that the use of positive reappraisal coping, whereby patients believed, "Difficulty led to my experience and growth," particularly led to autonomous motivation and suggested a possibility that prompting even emotive patients to take coping behaviors with a more positive image enhances autonomous motivation.

On the other hand, trait anxiety was found to be in a facilitating relationship with controlled motivation while being affected by social dysfunction. Although trait anxiety is originally construed as a state of affairs where a patient has a tendency to respond with anxiety regardless of situations, it is frequently accompanied with depression in dialysis patients [16, 28, 29]. It is highly likely that they have a tendency to feel anxiety as a symptom of depression or feel uncertainty about the future due to impacts on work and daily life. If a patient conceived dialysis as a "situation in which you cannot place certain value on events or purposes," anxiety is considered to have increased and turned into a factor facilitating controlled motivation.

Amotivation and controlled motivation are in a correlation, and amotivation is said to be in a

contacting relation with controlled motivation in a uniaxial structure [24]. While humans, in general, acquire and follow the values and norms/regulations of a group they belong to, if this process is incomplete, such values and norms/regulations are taken in via statements involving “should” or “must” [26]. While, for dialysis patients, it is desirable that norms/regulations enable them to acquire self-management necessary for dialysis and that they are motivated to engage in self-management, behaviors caused by coercion or obedience tend to make them focus on pleasing others instead of finding out what is right for themselves [30]. Through such a process, amotivation is considered to increase controlled motivation.

Furthermore, in this survey, factors for amotivation were low educational status and the underlying disease’s being diabetes. As it is not easy for dialysis patients to continue working as regular employees partly due to time constraints by treatment, dialysis patients are in a severe employment situation [31], but there is a report that employment opportunities are maintained for relatively highly educated patients [32]. Patients having an occupation are considered to be in situations that force them not to remain amotivated since they are naturally required to pay attention to managing their physical conditions and continuing working. In addition, highly educated patients are considered to be accustomed to obtaining and interpreting information and have a tendency to solve problems by themselves; thus low educational status is considered to lead to results associated with amotivation. It also affected amotivation that a patient presently has diabetes. It was reported that diabetic nephropathy patients feel the sense of helplessness and resignation that their efforts have not been rewarded when it becomes necessary to start dialysis [33]. It is possible that patients with diabetes as an underlying disease receive dialysis treatment with the sense of loss, unseen in other diseases, that they started dialysis because “they failed in diabetes

management,” which is considered to lead to amotivation.

5.3 Orientation of Nursing Support Facilitating Autonomous Motivation

Based on the above, in order to facilitate self-management and autonomous motivation of patients, it is important to provide patients with autonomy support by, first of all, paying attention to patients with a long dialysis history and evaluating the magnitude of the impact of dialysis on their daily life while attending to the presence or absence of depression as well. It was also revealed that, in order to address difficulties felt by patients, it is effective to encourage patients to be able to use more coping styles, particularly the positive reappraisal coping style. Furthermore, since the presence of an amotivational tendency or anxiety leads to controlled motivation, in light of the fact that such a risk is high in patients with low educational status or diabetes, it is necessary to assess fully whether patients’ idea of self-management is based on coercion or obedience. It was also suggested to be necessary to pay attention to whether patients feel difficult in daily life, leading to anxiety, and to provide support so that controlled motivation will not increase, such as being engaged in self-management for the sake of healthcare professionals.

6. Limits and Issues for the Study

As this study is based on a cross-sectional survey and targets dialysis patients in certain areas who can visit medical institutions as an outpatient, it does not shed light on the perception of patients whose physical functions declined due to complications and other reasons. Dialysis facilities are in diverse situations, and it cannot be said that subjects of this survey cover all kinds of instances. It is necessary to survey the characteristics of the perceptions of patients in more diverse situations and the effect of support for them in the future.

7. Conclusion

(1) As is suggested by the self-determination theory, autonomy support was found to be a major facilitating factor for autonomous motivation.

(2) It was suggested that autonomy support is, at the same time, a factor facilitating controlled motivation and plays an important role for an individual in amotivated state to acquire motivation.

(3) The frequent use of the positive reappraisal coping strategy facilitated autonomous motivation.

(4) Trait anxiety and social dysfunction were factors for controlled motivation.

(5) Factors for amotivation were low educational status and diabetes's being an underlying disease.

(6) It was suggested that, in order to facilitate autonomous motivation of patients, it is effective to assess typical factors leading to amotivation, such as the presence or absence of diabetes and educational status, to evaluate anxiety and the presence or absence of depression, to provide autonomy support, and to encourage patients to be able to use the positive appraisal coping style.

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