The Development of the Japanese Psychiatric Nursing Assessment Classification System (PsyNACS©)

Hirokazu Ito[1], Misao Miyagawa[2], Kazuhiro Ozawa[3], Tetsuya Tanioka[1]*, Yuko Yasuhara[1], Mutsuko Kataoka[4], Beth King[5], Masahito Tomotake[1], Rozzano C. Locsin[1]

[1]Department of Nursing, Institute of Biomedical Sciences Tokushima University, Graduate School, Tokushima, Japan
[2]Department of Nursing, Faculty of Health and Welfare, Tokushima Bunri University, Tokushima, Japan
[3]Nursing Collaboration Center, Gifu College of Nursing, Gifu, Japan
[4]Mifune Hospital, Kagawa, Japan
[5]Christine E. Lynn College of Nursing, Florida Atlantic University, Boca Raton, Florida, USA
Email: *tanioka.tetsuya@tokushima-u.ac.jp

Abstract

The purpose of this study was to develop the Japanese Psychiatric Nursing Assessment Classification System (PsyNACS)©. This study used the on-line survey method from February to April 2015. There were 644 respondents comprised of professional nurses with minimum qualification of 3 years' experience being in a psychiatric unit of a stand-alone 200-bed or more Psychiatric Hospital in Japan. Assessment items were derived from 211 specific items selected from nursing textbooks, excluding the North-American-Nursing-Diagnosis-Association (NANDA). The questionnaire contained Cover Letter, Demographic Data Sheet, and the PsyNACS© questionnaire. There were 644 questionnaires accessed but only 435 were completed and valid. Item levels of importance were evaluated: 1) Unnecessary, 2) Not very important, 3) Important and 4) Very important. Data analysis used descriptive and multivariate statistics. Factor analysis (principal factor analysis, varimax rotation), the Kaiser-Meyer-Olkin (KMO) and the Bartlett's test of Sphericity assessed the adaptive validity of the factor analysis. Factor loadings were set at 0.4 or more for the configuration of items. Internal consistency and reliability were established using Cronbach's alpha coefficient. Mean factor points were calculated, including standard deviation, range, and confidence interval at 95%. Statistical significance was at 0.05 level. Nine Patient Assessment Data (PAD) with 2 to 5 Cluster Assessment Data (CAD) each were categorized. Thirty one CADs comprised the Patient Assessment Data: (PAD1) Psychological symptom and stress, (PAD2) Information about treatment, (PAD3) Function of eating and balance of water, (PAD4) Life and value, (PAD5) Vital signs and

---

*Corresponding author.

health assessment, (PAD6) Self-care, (PAD7) Social support, (PAD8) Activity, sleeping and mobility capability, and (PAD9) Sexual function and sexual behavior. The PsyNACS© is a classification of items assessing health care needs within the Japanese psychiatric nursing care environment, and also can be used in various psychiatric patient care situations in all psychiatric units.

Keywords

PsyNACS, Psychiatric Nursing, Patient Assessment Data, Psychiatric Hospital

1. Introduction

In 2011, the Japanese Government unveiled its health care policy focusing on five major diseases: malignant neoplasms, cerebral stroke, acute cardiac infarction, diabetes mellitus, and psychiatric diseases. The Japanese Government considers psychiatric diseases a major disease [1]. The psychiatric healthcare in-patient environment shows that the average hospital stay is longer compared to other countries [2]. Psychiatric disease does not only exhibit subjective symptomatology, but also includes functional disturbances, disability and social disadvantage [3]-[5]. Characteristics of psychiatric diseases are that the progression and remission repeatedly occur and the disease becomes chronic [6] forcing psychiatric patients to continually stay in hospitals rather than live in their communities [7] [8].

Furthermore, Japan is facing a super-aging society where the elderly population, older than 65 years old, accounts for more than 25% of the total population. This percentage is expected to increase to 40 percent by 2055 [9]. More than 50 percent of total in-patients at psychiatric hospitals are the elderly [10]. In addition, as they age, psychiatric patients, having physical complications associated with malignant neoplasms, after-effects of cerebral stroke and pneumonia, require increased nursing care practices for their physical care needs [11].

Generally, psychiatric hospitals in Japan, systematically collect patient information following methods set forth by the North American Nursing Diagnosis Association (NANDA) [12] [13] and the framework of nursing care needs from Henderson [14]. At psychiatric hospitals in Japan, the Orem's self-care theory of Nursing [15], focusing on supporting and meeting self-care needs of patients [16] [17], and the 14 basic needs according to Henderson, focusing on patients' needs, can be readily observed. However, there is no reference to a Japanese psychiatric nursing-care assessment data system reflecting the human health and nursing needs of Japanese psychiatric patients.

Patients' assessment data generated in general hospitals because aimed for somatic disorders, are not comprehensive enough or do not work well enough for psychiatric patients. Because of these inadequacies, some hospitals have added information to meet their assessment needs. To be cognizant of these diseases and cover all information necessary to respond to the demands of nursing care of psychiatric patients, it is important that a culturally-based psychiatric patients' assessment data system is designed and implemented.

Hospitals that introduce electronic health records can build a unique database of information for the assessment of patients cooperatively developed by engineers and other health care personnel of the hospital's medical information department [18]. With an electronic health record system, it is possible not only to use the database for the systematic processing of nursing-care activities, but also to comprehensively use the information which may be of relevance for other health care occupations for the purpose of assuring human health care [19]. However, in 2005, the introduction rate of electronic health records by psychiatric hospitals was under the 10 percent mark [20]. This shows that many hospitals have difficulty collecting the required information for adequately assessing patients, and developing and implementing nursing-care plans.

Therefore, in order to respond to the needs of Japanese psychiatric patients based on cultural-social backgrounds, medical treatments, nursing care, and post-discharge rehabilitation, a thorough assessment should be effortlessly and comprehensively conducted. Effective nursing-care can be provided through a method of holistic assessments of patients by clarifying their symptomatology characteristics of being a patient with psychiatric nursing care problems requiring nursing interventions.

The purpose of the study was to design and develop the Japanese Psychiatric Nursing Assessment Classifica-

tion System (PsyNACS)©.

2. Methods

2.1. Description of PsyNACS©

A descriptive correlational survey method was used to determine the clusters of assessment items that comprise the Cluster Assessment Data (CAD) and the Patient Assessment Data (PAD) of the PsyNACS©. The PsyNACS© is composed of three levels or sections: The general data set is composed of 9 PADs, with each PAD having 2 to 5 CADs. There are 31 CADs derived from selected evaluation items. In order to investigate the items necessary for a psychiatric nursing-care assessment data, 211 assessment items were derived from specific assessment items based on selected theoretical models or frameworks of self-care theory by Orem-Underwood [17], the 14 basic needs by Henderson [14], Gordon's 11 functional health patterns [21] and items from the stress adaptation model by Stuart [22]. The level of importance of each indicator was evaluated as 1) Unnecessary, 2) Not very important, 3) Important and 4) Very important.

2.2. Data Analysis

Data analysis used descriptive and multivariate statistics to determine the distribution of items within the PsyNACS©. Factor analysis (principal factor analysis, varimax rotation) was used in order to determine CAD together with the Kaiser-Meyer-Olkin (KMO) and the Bartlett's test of Sphericity to assess the adaptive validity of the factor analysis. Factor loadings were set at 0.4 or more for the configuration of items. Factor loadings of less than 0.4 were omitted because of its low-level importance.

Internal consistency and reliability of the assessment data scores was done using Cronbach's alpha coefficient. Mean factor points were calculated, including the standard deviation, range, and confidence interval (CI) at 95%. Statistical significance was set at 0.05 level. All statistical analyses were performed using the SPSS for Windows software (version 20.0; SPSS Inc., Chicago, IL).

2.3. Selection of Nurse-Practice Setting and Data Collection

The subjects of the survey were 644 professional nurses practicing at 116 psychiatric hospitals in Japan. These hospitals were stand-alone or single service hospitals with 200 beds or more. In addition, subjects had to work in psychiatric units for at least three years and the clinical experience of more than 5 years of nursing (excluding licensed practical nurse). Since the desire was to extract the specific features of psychiatric nursing in Japan, psychiatric units in general hospitals were excluded.

Initial contact with the managers of the psychiatric hospitals was done to enhance cooperation to participate with the survey. Once commitment was obtained from the managers, the password for the PsyNACS© on-line internet-based survey questionnaire was provided to them. The on-line questionnaire package contained the following items: The PsyNACS© Questionnaire, and the Demographic Data Sheet. The Demographic Data sheet required respondents to provide their personal data, e.g. age, gender, place of work, years of experience as a nurse in general and years of experience in Psychiatric Units, etc.

The time frame was from February 2015 to April 2015. Follow-up telephone calls to the managers were made to ensure timely access and completion of the questionnaire and to enhance the return rate. The survey was conducted by SurveyMonkey©.

2.4. Ethical Considerations

The University of Tokushima Hospital Clinical Study Ethical Review Board approved this study. No harm to the subjects could be identified. Return of the survey implied that the subjects gave consent. The subjects were notified that privacy would be protected; only aggregate data would be used in reporting the findings.

3. Results

3.1. Characteristics of Respondents

Of the selected hospitals with 200 or more beds, 116 nursing hospital directors were invited to approve this survey and distribute to their staff. As a result, the questionnaire was accessed by 644 Japanese psychiatric nurses,

of which 435 (67.5%) were received with valid answers. The respondents' ages, clinical experiences as a nurse, experience in psychiatric nursing, type of ward functions, and hospital bed size are shown in **Table 1**.

3.2. Factor Analysis and the Excluded Items of Each CAD

As a result of the factor analysis, 31 factors (that is CADs) were extracted to comprise nine PADs. Their alpha factors were in the range of 0.858 to 0.979. This showed that the over-all data obtained high internal consistency for each factor. The KMO sample adequacy was in the range of 0.86 - 0.96 and the Bartlett's test of sphericity was p < 0.001; therefore, this instrument was reliable.

The following CADs were extracted: (PAD1) Five CADs: Psychological symptom (17 items), Stress coping (7 items), Mood disorder and aggression (7 items), Cognition function (4 items), and Delirium and derangement capacity to register failure (3 items); (PAD2) Four CADs: Information of adherence (7 items), Nourishment management (5 items), Blood test (3 items), and Information of the psychiatry rehabilitation (4 items); (PAD3) Four CADs: Eating cognition (11 items), Function of eating (8 items), Excretion situation (5 items), and Balance of water (3 items); (PAD4) Two CADs: Intention/point of view (9 items), and Thoughts of the patient (3 items) were extracted; (PAD5) Five CADs: General health condition (10 items), Sensory organ (4 items), Respiratory and chest symptom (6 items), Vital signs (4 items), and Seeing and hearing (3 items); (PAD6) Three CADs: Egestion and cleanliness (7 items), Activities of daily living (ADL) (6 items), and Appearance (5 items); (PAD7) Four CADs: Situation of the family and social life (7 items), Relationship to the health care provider (5 items), Disease and family (3 items), and Relationships with others (3 items); (PAD8) Two CADs: Activity and sleeping (9 items), and Mobility capability (9 items); and (PAD9) Two CADs: Interest toward sexuality (6 items), and Sexual function (4 items).

Following the factor analysis the following items were excluded: (PAD1) seven items of Incoherence, Circumstantiality of thinking, Perseveration, Trance, Allotriophagy, Factors relating to stress becoming stronger, and Conscious level; (PAD2) Two items of Family history, and Infectious disease; (PAD3) Two items of Thought toward excretion, and Amount of perspiration; (PAD4) Three items of Religious faith, Characteristic, and Kinds of plays and recreations, (PAD5) Two items of Painkiller, and Daily health management; (PAD6) Two items of Degree of satisfaction for clothes, and Feeling of cleanliness; (PAD7) Two items of Address, and Social resources; (PAD8) Four items of Tension of muscles, Muscle strength, Amount of exercise, and Way to

Table 1. Demographic data (N = 435).

Personal data	Mean	SD	Min	Max
Age	44.55	7.50	26	62
Clinical experience as nurse	20.40	8.20	5	47
Clinical experience in psychiatry nursing	17.08	8.01	3	47
The types of ward functions			n	%
Psychiatric acute care unit			109	25.06
Psychiatric general care unit			75	17.24
Psychiatric long term care unit			134	30.80
Complicated disease care unit			51	11.72
Dementia care unit			66	15.17
Participated hospitals and number of beds			n	%
Total (59 hospitals)				
Over 500 beds			8	13.56
400 - 499 beds			24	40.68
300 - 399 beds			25	42.37
200 - 299 beds			2	3.39

SD = Standard Deviation, Min = Minimum, Max = Maximum.

spend a day. However, in the (PAD9) assessment item was not excluded (**Table 2**).

3.3. Evaluation Results of Important Level of Each CAD

Considering the factor loading score criteria, the factors with average scores evaluated as "3 or more than 3 points-importance" were identified.

There were 21 CADs: (PAD1) Psychological symptom (3.15 ± 0.50, 95% CI 3.11 - 3.20), Stress coping (3.38 ± 0.45, 95% CI 3.34 - 3.42), Mood disorder and aggression (3.47 ± 0.45, 95% CI 3.43 - 3.51), Cognition function (3.22 ± 0.51, 95% CI 3.17 - 3.26), Delirium and derangement capacity to register failure (3.40 ± 0.46, 95% CI 3.35 - 3.44); (PAD2) Information of adherence (3.39 ± 0.36, 95% CI 3.36 - 3.42), Information of the psychiatry rehabilitation (3.21 ± 0.41, 95% CI 3.18 - 3.25); (PAD3) Function of eating (3.31 ± 0.39, 95% CI 3.27 - 3.35), Excretion situation (3.02 ± 0.41, 95% CI 2.98 - 3.06), Balance of water (3.26 ± 0.48, 95% CI 3.22 - 3.31); (PAD4) Intention/point of view (3.06 ± 0.42, 95% CI 3.02 - 3.10), Thoughts of the patient (3.29 ± 0.52, 95% CI 3.24 - 3.34); (PAD5) General health condition (3.18 ± 0.39, 95% CI 3.15 - 3.22), Vital signs (3.12 ± 0.43, 95% CI 3.07 - 3.16); (PAD6) Egestion and cleanliness (3.12 ± 0.36, 95% CI 3.08 - 3.15); (PAD7) Situation of the family and social life (3.11 ± 0.43, 95% CI 3.07 - 3.15), Relationship to the health care providers (3.19 ± 0.46, 95% CI 3.14 - 3.23), Disease and family (3.40 ± 0.44, 95% CI 3.36 - 3.45), Relationships with others (3.30 ± 0.47, 95% CI 3.26 - 3.35); (PAD8) Activity and sleeping (3.24 ± 0.40, 95% CI 3.20 - 3.28) and Mobility capability (3.17 ± 0.39, 95% CI 3.14 - 3.21).

However, other CADs were evaluated as "not very important" (**Table 3**).

4. Discussion

This study reflected the responses of professional and experienced nurses who are skilled in psychiatric nursing care in Japan. This raised the level of accuracy of the results of the research. Sampling was considered appropriate, and the number of responses were critical statistically satisfactory. This raised the level of accuracy of the results of the research.

The results of the study demonstrated the degree of importance that the assessment data items of the PsyNACS[©] serve to distinguish the needs of patients in psychiatric care. These levels provided ways to categorize the Patient Assessment Data (PAD), and the Cluster Assessment Data (CAD). Factor loadings of "4 or more" signifying importance of the items facilitated the development of the PsyNACS[©].

Thirty one CADs were extracted in this research. However, twenty seven items were excluded based on results of factor analysis. For example, allotriophagy of psychological symptoms was one of the assessment data items excluded because this was a problem with autism and/or intellectual disability [23]. Furthermore, other items which are included in the rehabilitation care situations provided by occupational therapists were also excluded. Family support evaluation item is a psychiatric item in which social workers can often intervene. These items were also excluded because these are functions which are performed by other health care professionals. Items related to religion were considered cultural characteristics of Japanese people who are unlikely to have strong religious affiliations and were also excluded.

In PAD1, all of the factors were rated as "important". Mood disorders and dementia are increasing in Japan. The evidence is supported by increased patient admissions in psychiatric hospitals [24]. The numbers of patients admitted to the psychiatric hospitals are about 29 million patients, most often due to schizophrenia [25]. In particular, facilitation of adaptive coping with serious mental illnesses is an important part of psychiatric-mental health nursing care [26].

In PAD2, regarding Information about treatments, Information of adherence, and Information about psychiatric rehabilitation were all rated as "important". According to Bowers [27], the roles of the nurse is to provide safety for patient and others, collect valuable information about patients, monitor treatment efficacies, manage disturbed behavior, provide personal care, and manage a comfortable environment for patients. Therefore, it is considered important to patient care success that nurses acquire crucial information concerning the patient's ability to understand, the developmental stage, and treatments performed. This is particularly critical to psychiatric patients who may have relapsing condition of the psychiatric disease.

Nourishment management, and blood tests were assessment data which were evaluated as "not very important". However, blood test is included because of the average value which was in the range of 2.93 - 3.02 95% CI. These assessment data are physiological information that may have value that is vital to the patient's health condition.

Table 2. (a) Result of factor analysis (PAD 1-2); (b) Result of factor analysis (PAD 3-4); (c) Result of factor analysis (PAD 5-6); (d) Result of factor analysis (PAD 7-9).

(a)

PAD1 Psychological symptom and stress (α = 0.979)	CAD1	CAD2	CAD3	CAD4	CAD5	PAD2 Information about treatment (α = 0.858)	CAD1	CAD2	CAD3	CAD4
CAD1 Psychological symptom (α = 0.975)						**CAD1 Information of adherence (α = 0.783)**				
Thought blocking	0.851	0.200	0.173	0.201	0.256	Knowledge of the disease	0.663	0.052	−0.012	0.053
Dominant theme	0.842	0.189	0.178	0.223	0.143	Comprehension of things	0.608	0.057	0.002	0.192
Tought broadcasting	0.838	0.189	0.212	0.137	0.240	Information on the internal medicine	0.567	0.148	0.159	0.087
Inhibition of ideas	0.831	0.211	0.178	0.182	0.290	History of present illness Consultation and therapeutic situation	0.540	0.074	0.252	0.119
Delusion of control	0.829	0.214	0.189	0.190	0.120	Developmental stage	0.539	0.217	−0.013	0.214
Flight of ideas	0.795	0.219	0.189	0.184	0.310	Medical history of the person	0.428	0.234	0.179	0.069
Compulsive thought	0.789	0.223	0.254	0.177	0.217	Intellectual disability	0.427	0.148	0.001	0.385
Depersonalization	0.780	0.200	0.262	0.222	−0.010	**CAD2 Nutritional management (α = 0.786)**				
Incoherent thought	0.746	0.241	0.260	0.122	0.336	Weight	0.083	0.718	0.168	0.165
Multiple personality	0.714	0.203	0.216	0.232	−0.040	Height	0.085	0.698	0.165	0.104
Ambivalence	0.704	0.277	0.107	0.337	0.012	Body mass index (BMI)	0.121	0.592	0.231	0.194
Personality characteristics	0.611	0.229	0.330	0.249	0.150	Smoking history	0.216	0.585	0.091	0.070
Apathy	0.604	0.334	0.282	0.353	0.194	Drinking history	0.342	0.436	0.133	0.087
Affective emotional incontinence	0.536	0.353	0.230	0.398	0.200	**CAD3 Blood test (α = 0.784)**				
Hypobulia	0.514	0.391	0.193	0.420	0.202	Blood general inspection(RBC/WBC)	0.105	0.194	0.904	0.088
Illusion	0.488	0.138	0.090	0.293	0.307	Serum chemistry (TP/Alb/TG/Liver function/Electrolyte)	0.186	0.255	0.709	0.201
Fear	0.469	0.384	0.276	0.404	0.141	Blood clotting test（PT/APTT）	0.053	0.309	0.475	0.172
CAD2 Stress coping (α = 0.928)						**CAD4 Information of Psychiatry rehabilitation (α = 0.570)**				

Continued

Psychological stress	0.248	0.765	0.230	0.149	0.232	Communication disorder	0.324	0.026	0.025	0.526
Causes of stress	0.224	0.741	0.292	0.139	0.174	The contents of rehabilitation	−0.005	0.165	0.202	0.507
Psychological pain	0.299	0.733	0.282	0.201	0.170	Recent weight change	0.134	0.151	0.131	0.505
Environmental Stressor	0.150	0.715	0.182	0.188	0.215	Ingestion usage of drugs and addictive substances	0.375	0.127	0.094	0.451
Life Event Stressor	0.266	0.652	0.217	0.196	0.065					
Coping skills	0.297	0.623	0.277	0.194	0.033	Contributing rate (%)	13.60	12.15	9.84	7.47
Anxiety	0.344	0.428	0.335	0.310	0.324	Cumulative contribution ratio (%)		25.75	35.59	43.06

CAD3 Mood disorder and aggression (α = 0.939)

KMO = 0.86; Bartlett's test of sphericity = 2834.01, p < 0.001

Harming (others and/or oneself)	0.181	0.279	0.773	0.162	0.068
Assaultive behavior	0.196	0.321	0.758	0.175	0.076
Excitement	0.250	0.253	0.732	0.188	0.311
Irritability	0.299	0.295	0.646	0.189	0.277
Manic behavior	0.450	0.278	0.588	0.149	0.319
Delusion	0.318	0.244	0.553	0.107	0.441
Depressed mood	0.415	0.293	0.528	0.198	0.293

CAD4 Cognition function (α = 0.931)

Agnosia	0.337	0.231	0.211	0.786	0.197
Apraxia	0.393	0.240	0.190	0.770	0.183
Aphasia	0.345	0.254	0.171	0.751	0.120
Loitering	0.276	0.242	0.237	0.526	0.359

CAD5 Delirium and derangement capacity to register failure (α = 0.830)

Delirium	0.204	0.210	0.272	0.206	0.622
Derangement capacity to register failure	0.210	0.220	0.217	0.301	0.589
Hallucination	0.399	0.239	0.368	0.110	0.560
Contributing rate (%)	27.88	13.79	12.62	10.35	7.51
Cumulative contribution ratio (%)		41.68	54.30	64.65	72.16

KMO = 0.96; Bartlett's test of sphericity = 19,139.37, p < 0.001, Principal factor analisis (Varimax rotation). PAD: Patient Assessment Data. CAD: Cluster Assessment Data. KMO: Kaisar-Meyer-Olkin test.

(b)

PAD3 Function of eating and balance of water ($\alpha = 0.940$)	CAD1	CAD2	CAD3	CAD4
CAD1 Eating cognition ($\alpha = 0.893$)				
Sense of hunger	0.712	0.205	0.133	0.107
Sense of abdominal fullness	0.670	0.240	0.225	0.101
Change of dietary habits	0.651	0.183	0.263	0.104
Intake of between-meal eating	0.636	0.172	0.144	0.070
Number of meals	0.635	0.106	0.362	−0.044
Mealtime	0.630	0.171	0.389	−0.016
Preference	0.624	0.221	0.284	0.067
Body Image	0.622	0.023	0.040	0.228
The presence or absence of overeating	0.549	0.105	0.151	0.393
Understanding of diet	0.459	0.170	0.097	0.336
Eating action	0.434	0.353	0.246	0.241
CAD2 Function of eating ($\alpha = 0.890$)				
Swallowing function	0.099	0.868	0.071	0.158
Mastication	0.218	0.737	0.203	0.054
Presence or absence of aspiration	0.074	0.680	0.100	0.217
Oral conditions	0.344	0.592	0.279	0.054
Signs of dehydration	0.182	0.575	0.232	0.292
Fluid intake	0.182	0.515	0.314	0.334
Dietary intake	0.271	0.508	0.363	0.052
Presence or absence of dentures and condition of use	0.323	0.437	0.313	0.084
CAD3 Excretion situation ($\alpha = 0.857$)				
Symptom at having egested	0.392	0.222	0.702	0.107
Property of egesta	0.298	0.325	0.661	0.113
Frequency of urination	0.360	0.310	0.535	0.105
Frequency of urination during night	0.428	0.259	0.479	0.103
Frequency of stool	0.149	0.430	0.454	0.256
CAD4 Balance of water ($\alpha = 0.837$)				
History of water intoxication	0.122	0.190	0.061	0.872
Polyposia	0.107	0.227	0.067	0.841
Excessive urination	0.351	0.311	0.323	0.447
Contributing rate (%)	19.31	15.77	10.73	9.21
Cumulative contribution ratio (%)		35.08	45.81	55.02

PAD4 Life and value ($\alpha = 0.922$)	CAD1	CAD2
CAD1 Intention/point of view ($\alpha = 0.897$)		
Self expectation	0.729	0.285
Ethical thought	0.693	0.232
Patient's strength	0.662	0.364
Hope	0.658	0.403
Motivation	0.603	0.316
Purpose of life	0.602	0.463
Goal of life	0.601	0.398
Participation of the nursing care plan	0.573	0.170
Important belief except the religion	0.528	0.285
CAD2 Thoughts of the patient ($\alpha = 0.886$)		
Current thought of the patient	0.296	0.918
Future thought of the patient	0.340	0.841
Thought of the patient before the illness	0.438	0.572
Contributing rate (%)	33.11	24.07
Cumulative contribution ratio (%)		57.19

KMO = 0.91; Bartlett's test of sphericity = 3256.43, p < 0.001

KMO = 0.93; Bartlett's test of sphericity = 7182.11, p < 0.01, Principal factor analisis (Varimax rotation). PAD: Patient Assessment Data. CAD: Cluster Assessment Data. KMO: Kaisar-Meyer-Olkin test.

(c)

PAD5 Vital signs and health assessment (α = 0.906)	CAD1	CAD2	CAD3	CAD4	CAD5
CAD1 General health condition (α = 0.906)					
Presence or absence of nausea and vomiting	0.776	0.097	0.211	0.112	0.100
Ileus	0.698	−0.008	0.144	0.060	−0.007
Abdominal condition	0.677	0.117	0.116	0.198	0.090
Sign of infection	0.650	0.055	0.200	0.210	0.085
Tracheal secretion	0.640	0.260	0.362	0.079	0.131
Edema	0.632	0.214	0.187	0.219	0.095
Aching pain	0.605	0.347	0.151	0.318	0.136
Condition of skin	0.552	0.387	0.059	0.300	0.092
Symptoms of allergy	0.531	0.073	0.155	0.256	0.204
Sense of fatigue	0.416	0.404	0.104	0.197	0.148
CAD2 Sensory organ (α = 0.870)					
Sense of smell	0.092	0.773	0.222	0.070	0.218
Sense of taste	0.112	0.744	0.195	0.059	0.261
Sense of touch	0.186	0.736	0.232	0.080	0.290
Itching sensation	0.517	0.534	0.091	0.168	0.095
CAD3 Respiratory and chest symptom (α = 0.912)					
Oxygen saturation	0.295	0.162	0.717	0.278	0.172
Breath sounds	0.252	0.270	0.686	0.257	0.168
Presence or absence of cyanosis	0.399	0.124	0.654	0.211	0.114
Respiratory rhythm	0.156	0.368	0.605	0.381	0.134
Respiratory rate	0.427	0.212	0.523	0.255	0.184
Chest symptom	0.124	0.377	0.501	0.442	0.148
CAD4 Vital signs (α = 0.885)					
Pulse rate	0.209	0.213	0.220	0.781	0.133
Body temperature	0.318	0.084	0.259	0.725	0.092
Blood pressure	0.308	0.018	0.309	0.684	0.134
Abnormal cardiac rhythm	0.364	0.076	0.273	0.535	0.195
CAD5 Sense of hearing, Visual acuity (α = 0.873)					
Sense of hearing	0.151	0.333	0.225	0.128	0.823
Visual acuity	0.132	0.392	0.263	0.206	0.656
Use of glasses and hearing aid	0.201	0.378	0.079	0.189	0.590
Contributing rate (%)	19.30	12.81	11.89	11.37	7.53
Cumulative contribution ratio (%)		32.12	44.01	55.38	62.91

PAD6 Self-care (α = 0.915)	CAD1	CAD2	CAD3
CAD1 Egestion and cleanliness (α = 0.863)			
Egestion	0.789	0.081	0.102
Picking up after having egested	0.766	0.177	0.107
Coprophilia	0.688	0.073	0.198
Independence of the clothes of the detachable	0.656	0.265	0.279
Independence of the cleanliness	0.572	0.284	0.293
Habits of the cleanliness	0.499	0.230	0.374
Situation of oral care	0.458	0.082	0.316
CAD2 Activities of daily living (ADL) (α = 0.886)			
Performs housework independently	0.217	0.897	0.173
Performs cooking independently	0.137	0.818	0.248
Shops independently	0.204	0.814	0.221
Wash clothes independently	0.174	0.596	0.300
Wears makeup	0.055	0.498	0.433
Prepares meals independently	0.408	0.431	0.207
CAD3 Appearance (α = 0.822)			
Clothes are approriate for the season	0.207	0.263	0.687
Hair styling	0.145	0.283	0.644
Number of times of having baths	0.256	0.215	0.598
Body temperature adjustment by clothes	0.362	0.146	0.575
Appearance	0.348	0.320	0.560
Contributing rate (%)	19.93	19.45	15.62
Cumulative contribution ratio (%)		39.38	55.00

KMO = 0.91; Bartlett's test of sphericity = 4469.32, p < 0.001

KMO = 0.94; Bartlett's test of sphericity = 8441.42, p < 0.01, Principal factor analisis (Varimax rotation). PAD: Patient Assessment Data. CAD: Cluster Assessment Data. KMO: Kaisar-Meyer-Olkin test.

(d)

PAD7 Social support (α = 0.936)	CAD1	CAD2	CAD3	CAD4	PAD8 Activity, sleeping and mobility capability (α = 0.928)	CAD1	CAD2
CAD1 Situation of the family and social life (α = 0.886)					**CAD1 Activity and sleeping (α = 0.913)**		
Health status of the family	0.720	0.223	0.272	0.131	Change of a sleeping habits	0.758	0.187
Role in home and the society	0.635	0.313	0.182	0.272	Balance of activity and sleeping	0.745	0.240
Home environment	0.605	0.227	0.283	0.173	Hypnagogic state	0.736	0.224
Change in the economic situation	0.593	0.289	0.377	0.158	A sense of sound sleep	0.727	0.229
Work school	0.585	0.327	0.054	0.276	Time of sleep and awakening	0.717	0.198
Important to others	0.565	0.282	0.204	0.221	Sleep duration	0.677	0.189
Family structure	0.507	0.140	0.409	0.141	Daytime drowsiness	0.668	0.295
CAD2 Relationship to the health care providers (α = 0.870)					Presence or absence of day-night reversal	0.667	0.259
Trouble with the health care providers	0.215	0.809	0.226	0.216	Presence, absence and frequency of narcotic use	0.596	0.281
Past untoward event with the health care providers	0.308	0.740	0.118	0.231	**CAD2 Mobility capability (α = 0.907)**		
Difficulty when carrying out plans with the health care providers	0.306	0.692	0.260	0.115	Standing position of the keeping	0.254	0.783
Reliable health care providers	0.400	0.487	0.275	0.163	The need for a wheelchair	0.224	0.771
Expression for medical staff, such as his desire interest hope	0.293	0.440	0.309	0.183	The need for a walker	0.194	0.770
CAD3 Disease and Family (α = 0.802)					Use of clothing or aids to dress	0.236	0.748
Current domestic problem	0.241	0.234	0.734	0.169	Posture in the standing position	0.299	0.691
Key person in the family	0.223	0.187	0.673	0.113	Walking conditoin (gait)	0.297	0.652
Change roles due to the disease and attitude	0.431	0.262	0.503	0.227	Range of joint motion	0.160	0.642
CAD4 Relationships with others (α = 0.838)					Wasting and atrophy of disuse syndrome muscle	0.183	0.640
Conditions of withdrawal	0.192	0.188	0.087	0.851	Risk of falls and tumble	0.222	0.477
Disconnectedness	0.259	0.183	0.188	0.784			
Personalities and system supporting coping with stress	0.233	0.243	0.357	0.502	Contributing rate (%)	27.29	26.75
					Cumulative contribution ratio (%)		54.04
Contributing rate (%)	19.40	16.03	12.56	11.93	KMO = 0.93; Bartlett's test of sphericity = 4908.51, p < 0.001		
Cumulative contribution ratio (%)		35.42	47.98	59.91	**PAD9 Sexual function and sexual behavior (α = 0.939)**	CAD1	CAD2

KMO = 0.93; Bartlett's test of sphericity = 4583.51, p < 0.001

Principal factor analisis (Varimax rotation)

PAD: Patient Assessment Data CAD: Cluster Assessment Data

KMO: Kaisar-Meyer-Olkin test

PAD9 Sexual function and sexual behavior (α = 0.939)	CAD1	CAD2
CAD1 Interest toward sexuality (α = 0.939)		
Fetishism	0.809	0.343
Satyriasis	0.760	0.377
Loss of sexual desire	0.745	0.364
Abnormality of the sex aim	0.743	0.362
Interaction with the opposite sex	0.677	0.398
State of aedoeo	0.416	0.141
CAD2 Sexual function (α = 0.945)		
Menstrual coping	0.357	0.874
Menstruation	0.342	0.854
Physical reaction during menstruation	0.374	0.841
Fetal conception and contraception	0.467	0.691
Contributing rate (%)	35.74	33.79
Cumulative contribution ratio (%)		69.53
KMO = 0.92; Bartlett's test of sphericity = 3745.32, p < 0.001		

Table 3. Descriptive statistics results of each CAD.

PAD	CAD		MFP Min	Max	Mean	SD	95% CI
PAD1	CAD1	Psychological symptom	1.94	4.00	**3.15**	0.50	3.11 - 3.20
	CAD2	Stress coping	2.00	4.00	**3.38**	0.45	3.34 - 3.42
	CAD3	Mood disorder and aggression	2.00	4.00	**3.47**	0.45	3.43 - 3.51
	CAD4	Cognition function	1.50	4.00	**3.22**	0.51	3.17 - 3.26
	CAD5	Delirium and derangement capacity to register failure	2.00	4.00	**3.40**	0.46	3.35 - 3.44
PAD2	CAD1	Information of adherence	2.29	4.00	**3.39**	0.36	3.36 - 3.42
	CAD2	Nourishment management	1.60	4.00	2.77	0.44	2.73 - 2.81
	CAD3	Blood test	1.33	4.00	2.97	0.48	2.93 - 3.02
	CAD4	Information of the psychiatry rehabilitation	1.75	4.00	**3.21**	0.41	3.18 - 3.25
PAD3	CAD1	Eating cognition	1.82	4.00	2.87	0.39	2.83 - 2.90
	CAD2	Function of eating	2.25	4.00	**3.31**	0.39	3.27 - 3.35
	CAD3	Excretion situation	1.80	4.00	**3.02**	0.41	2.98 - 3.06
	CAD4	Balance of water	2.00	4.00	**3.26**	0.48	3.22 - 3.31
PAD4	CAD1	Intention/Point of view	1.33	4.00	**3.06**	0.42	3.02 - 3.10
	CAD2	Thoughts of the patient	1.00	4.00	**3.29**	0.52	3.24 - 3.34
PAD5	CAD1	General health condition	2.00	4.00	**3.18**	0.39	3.15 - 3.22
	CAD2	Sensory organ	1.25	4.00	2.65	0.50	2.60 - 2.70
	CAD3	Respiratory and chest symptom	1.00	4.00	2.87	0.51	2.82 - 2.92
	CAD4	Vital signs	1.75	4.00	**3.12**	0.43	3.07 - 3.16
	CAD5	Seeing and hearing	1.33	4.00	2.81	0.47	2.77 - 2.86
PAD6	CAD1	Egestion and cleanliness	2.00	4.00	**3.12**	0.36	3.08 - 3.15
	CAD2	ADL (activity of daily living)	1.00	4.00	2.78	0.50	2.74 - 2.83
	CAD3	Appearance	1.20	4.00	2.78	0.41	2.74 - 2.81
PAD7	CAD1	Situation of the family and social life	1.29	4.00	**3.11**	0.43	3.07 - 3.15
	CAD2	Relationship to the health care providers	1.40	4.00	**3.19**	0.46	3.14 - 3.23
	CAD3	Disease and family	2.00	4.00	**3.40**	0.44	3.36 - 3.45
	CAD4	Relationships with others	2.00	4.00	**3.30**	0.47	3.26 - 3.35
PAD8	CAD1	Activity and sleeping	2.00	4.00	**3.24**	0.40	3.20 - 3.28
	CAD2	Mobility capability	1.67	4.00	**3.17**	0.39	3.14 - 3.21
PAD9	CAD1	Interest toward sexuality	1.00	4.00	2.58	0.53	2.53 - 2.63
	CAD2	Sexual function	1.00	4.00	2.66	0.72	2.59 - 2.72

PAD: Psychiatric Assessment Data. CAD: Cluster Assessment Data. MFP: Mean Factor Point. Min: Minimum. Max: Maximum. n.s.: not significant. SD = Standard Deviation. CI: Confidence Interval.

In PAD3, Function of eating, Excretion situations, and Balance of water were rated as "important". Excretion situation included the items concerning the symptom and personal situations at the time of excretion. This was considered to be an observation item necessary for the assessment of physical symptoms. Disturbance in the balance of fluid intake including water is considered to cause physiological problems that can directly and indirectly influence the whole-body management, and the consequent pharmacological effects of psychoactive drugs

for long term effects. Balance of water was rated "important" by respondents. However, in Japan, in-patients with schizophrenia accounts for about 60%, while the number of patients with eating disorders are few. This may explain why "Eating cognition" was evaluated as "not very important."

In PAD4, all factors influencing human life were considered valuable, including Intention/point of view, and thoughts of the patient. These were evaluated as important. In a study by Kataoka *et al*. [28], Japanese nurses' involvement in patient situations included four factors based on the assessment which focused on social resources; holistic assessment, person's way of living, and the strengths of individuals with mental disability. It is considered that, in order to understand patients [29] responses to care involving appreciation of human wholeness occur in a momentary resolution often from their viewpoints on nursing care, and thoughts of the patient as an "important" factor.

In PAD5, assessing Vital signs and General health condition, respondents evaluated these items as 'important'. However, items such as Sensory organ, Respiratory and chest symptom, and Seeing and hearing were evaluated as "not very important". While these are items related to the five senses, visual acuity and sense of hearing, was evaluated as "not very important" as well. This was also observed in the case of Respiratory and chest symptoms, as these were treated efficiently by moving the patient to a ward or hospital which has a physician.

In PAD6, in the area of Self-care, Egestion and cleanliness was evaluated as "very important". ADL and Appearance however, were evaluated as "not very important". The ADL was also evaluated by the capability to be mobile in PAD8. In some cases, a patient with schizophrenia may lose all interest in his or her personal grooming because negative symptoms of schizophrenia, which involve a loss of function, may include lack of motivation, social avoidance, and lack of emotional response [30]. Support for a person's Appearance may be important for social activities. However, for long term hospitalization, this might not be important by the nurses.

In PAD7, Situations of the family and social life, Disease and family, Relationship to the health care provider and Relationship with others were found to be "important". A study by Sawada *et al*. [31] reported that the roles of psychiatric nursing care as "basic activities of daily living, psychological support/interpersonal skills, medical support, monitoring, family support and miscellaneous" may be required interventions for patients in acute psychiatric hospitals in Japan.

In PAD8, Activity and sleeping and Mobility capability, includes items concerning "Risk of falls and tumble". The risks of tumbling down and falling are not caused by purely psychiatric symptoms. The research by Sano *et al*. [32] indicated that every antipsychotic pill drug increases the risk of tumbling and falling at the rate of 2.63 times as the result of side effects of internally administered medicines. Stenhagen M. *et al*. [33] explained that the lowering of Cognition function; and the condition of Instrumental Activities of Daily Living caused by aging are related to the risks of tumbling and falling. In the research by Soderqvist A. *et al*. [34], assessments of "Cognition function" by nurses were lower than in actual conditions. Psychiatric hospitals in Japan are considered to put emphasis on the risk assessments for tumbling and falling particularly for the advancing population of the aged.

In PAD9, Interest toward sexuality and Sexual function were evaluated as "not very important". Antipsychotic polypharmacy was associated with increased side effect burden, increasing rates of Parkinsonian side effects, anticholinergic symptoms, hyperprolactinemia, sexual dysfunction, hypersalivation, sedation/somnolence, cognitive impairment, and diabetes [35]. Although the events concerning sexuality tends to be considered less serious in the hospital than in the community society, "Interest toward sexuality" was regarded as "important" not only for the young, but also by the elderly; therefore, it is necessary to include "Sexual behavior problems" as a very important assessment data as this condition sometimes occur because of inappropriate judgments owing to the psychiatric symptom in psychiatric wards. According to the research by Steven *et al*. [36], many of the patients with chronic psychiatric disease were sexually active. Therefore, it is appropriate that PsyNACS© include sexual behavior of patients as critical assessment data, recognizing the importance of sexuality human living without ignoring their desire [37].

5. Limitations

The researcher used theoretically-based assessment data from selected theoretical sources such as textbooks on nursing theory and models. Furthermore, the survey items had included symptoms and names of diseases in part, and some synonyms. In the PAD9 of Sexual function and sexual behavior, the most asked commonly questions were concerning female sexual behavior and those concerning male sexual activities were few.

6. Conclusion

Assessment items of the PsyNACS© were evaluated "important" by professional nurses who practiced in psychiatric hospitals in Japan. Through the dissemination of the PsyNACS with publications in a clinical nursing journal and distribution to staff in psychiatric hospitals, patient care will be improved. The PsyNACS© will provide an excellent assessment data classification system specific to Japanese psychiatric health care environment. It can be used for psychiatric nursing care practice, from acute to chronic care; also it can facilitate the implementation of an efficient and practical psychiatric patient care plan.

Acknowledgements

We would like to express our deep gratitude to the Japanese psychiatric nurses and nursing administrators who participated in this study. And we also would like to express our deep gratitude to the academic supervisors.

References

[1] The Part of Disorder's Health Welfare, Ministry of Health, Lavour and Welfare (2015) About Health Care Planning (Mental Disease). (In Japanese)
http://www.mhlw.go.jp/seisakunitsuite/bunya/kenkou_iryou/iryou/iryou_keikaku/dl/shiryou_a-3.pdf

[2] Organization of Economics and Development (OECD) (2014) Japan Trails Other Countries in 'Deinstitutionalization', But There Are Signs of Progress, Says OECD.
http://www.oecd.org/els/health-systems/MMHC-Country-Press-Note-Japan.pdf.

[3] Corrigan, P.W., Green, A., Lundin, R., Kubiak, M.A. and Penn, D.L. (2001) Familiarity with and Social Distance from People Who Have Serious Mental Illness. *Psychiatric Services*, **52**, 953-958. http://dx.doi.org/10.1176/appi.ps.52.7.953

[4] Crisp, A.H., Gelder, M.G., Rix, S., Meltzer, H.I. and Rowlands, O.J. (2000) Stigmatisation of People with Mental Illnesses. *The British Journal of Psychiatry*, **177**, 4-7. http://dx.doi.org/10.1192/bjp.177.1.4

[5] WHO Media Center Fact Sheet No. 352 (2014) Disability and Health.
http://www.who.int/mediacentre/factsheets/fs352/en/

[6] Jobe, T.H. and Harrow, M. (2005) Long-Term Outcome of Patients with Schizophrenia, A Review. *Canadian Journal of Psychiatry*, **50**, 892-900.

[7] Gastal, F.L., Andreoli, S.B., Quintana, M.I., Gameiroa, M.A., Leitea, S.O. and McGrathc, J. (2000) Predicting the Revolving Door Phenomenon among Patients with Schizophrenic, Affective Disorders and Non-Organic Psychoses. *Revista de Saúde Pública*, **34**, 280-285. http://dx.doi.org/10.1590/S0034-89102000000300011

[8] Frick, U., Frick, H., Langguth, B., Landgrebe, M., Hübner-Liebermann, B. and Hajak, G. (2013) The Revolving Door Phenomenon Revisited. Time to Readmission in 17'415 Patients with 37'697 Hospitalisations at a German Psychiatric Hospital. *PLoS One*, **8**, e75612. http://dx.doi.org/10.1371/journal.pone.0075612

[9] Long-Term Care, Health and Welfare Services for the Elderly Ministry of Health, Lavour and Welfare (2015) Elderly Person Care of 2015—For Establishment of the Care to Support the Dignity of the Elderly Person. (In Japanese)
http://www.mhlw.go.jp/topics/kaigo/kentou/15kourei/3a.html

[10] Incorporated Administrative Agency National Statistics Center (2013) 2008 Patient Investigation. (In Japanese)
http://www.e-stat.go.jp/SG1/estat/NewList.do?tid=000001031167

[11] Nakajima, N., Aiba, M., Fukuda, Y., BokuSoushin, B., Isomura, H., Tuda, H. and Hayashida, Y. (2009) Causes of Death in Hospitalized Elderly Patients. *Nihon Ronen Igakkai Zasshi* (*Japanese Journal of Geriatrics*), **46**, 71-78. (In Japanese) http://dx.doi.org/10.3143/geriatrics.46.71

[12] NANDA International (2011) Nursing Diagnoses 2012-14 Definitions and Classification. Wiley-Blackwell, Hoboken.

[13] Ogasawara, C., Hasegawa, T., Kume, Y., Takahashi, I., Katayama, Y., Furuhashi, Y., Andoh, M., Yamamoto, Y., Okazaki, S. and Tanabe, M. (2005) Nursing Diagnoses and Interventions of Japanese Patients with End-Stage Breast Cancer Admitted for Different Care Purposes. *International Journal of Nursing Terminologies and Classifications*, **16**, 54-64. http://dx.doi.org/10.1111/j.1744-618X.2005.00014.x

[14] Henderson, V. (1997) Basic Principles of Nursing Care. American Nurses Publishing, Ltd., Washington DC.

[15] Chenitz, W.C. and Swanson, J.M. (1986) From Practice to Grounded Theory: Qualitative Research in Nursing. Addison-Wesley Publishing Company, Menlo Park.

[16] Dorothea, E. and Orem, D.E. (1985) Nursing Concepts of Practice. 3rd Edition, McGraw-Hill, New York.

[17] Minami, H. and Inaoka, F. (1987) A Concept of the Self-Care and Nursing Practice—From a Viewpoint of Dr. P.R. Underwood. Health Publishing Company, Tokyo.

[18] Okagaki, A., Koretsune, Y., Todo, R. and Kusuoka, H. (2007) Clinical Supporting System in Large-Scaled General Hospital with Customized Interface Layer between Electronic Patient Record System and Filemaker Pro. *Proceedings of International Conference on Complex Medical Engineering*, Beijing, 23-27 May 2007, 287-290. http://dx.doi.org/10.1109/iccme.2007.4381740

[19] Staggers, N., Weir, C. and Phansalkar, S. (2008) Chapter 47. Patient Safety and Health Information Technology: Role of the Electronic Health Record. In: Hughes, R.G., Ed., *Patient Safety and Quality*: *An Evidence-Based Handbook for Nurses*, Agency for Healthcare Research and Quality, Rockville, 251-265.

[20] Population Dynamics, Health Statistics Section Ministry of Health, Lavour and Welfare (2005) The General Condition of 2005 Medical Facilities (Static Condition, Change) Investigation. The Hospital Report. http://www.mhlw.go.jp/toukei/saikin/hw/iryosd/05/kekka1-3.html

[21] Nin, K. (2009) Nursing Process Development Guide—According to Henderson, Gordon, a Framework of NANDA. 2nd Edition, Shorinsha, Tokyo.

[22] Stuart, G.W. and Laraia, M.T. (2005) Principles and Practice of Psychiatric Nursing. 8th Edition, Mosby, Inc., St. Louis.

[23] Matson, J.L., Hattier, M.A., Belva, B. and Matson, M.L. (2013) Pica in Persons with Developmental Disabilities: Approaches to Treatment. *Research in Developmental Disabilities*, **34**, 2564-2571. http://dx.doi.org/10.1016/j.ridd.2013.05.018

[24] Ministry of Health, Labour and Welfare (2007) Health Statistics in Japan 2007. (In Japanese) http://www.mhlw.go.jp/english/database/db-hss/dl/hs2007a.pdf

[25] Central Medical Council, Ministry of Health, Labour and Welfare (2013) About Mind Medical Care. (In Japanese) http://www.mhlw.go.jp/file/05-Shingikai-12404000-Hokenkyoku-Iryouka/0000031076.pdf

[26] Rudnick, A. and Martins, J. (2009) Coping and Schizophrenia: A Re-Analysis. *Archives of Psychiatric Nursing*, **23**, 11-15. http://dx.doi.org/10.1016/j.apnu.2008.02.009

[27] Bowers, L. (2005) Reasons for Admission and Their Implications for the Nature of Acute Inpatient Psychiatric Nursing. *Journal of Psychiatric and Mental Health Nursing*, **12**, 231-236. http://dx.doi.org/10.1111/j.1365-2850.2004.00825.x

[28] Kataoka, M., Ozawa, K., Tanioka, T. and Locsin, R. (2015) Clarifying the Strengths-Oriented Attitude among Nurses in Psychiatric Hospitals in Japan. *Health*, **7**, 776-787. http://dx.doi.org/10.4236/health.2015.76092

[29] Boykin, A. and Schoenhofer, S.O. (2001) Caring: A Model for Transforming Practice. Jones & Bartlett Learning, Burlington.

[30] Evansa, J.D., Heatona, R.K., Paulsenc, J.S., Palmera, B.W., Pattersona, T. and Jestea, D.V. (2003) The Relationship of Neuropsychological Abilities to Specific Domains of Functional Capacity in Older Schizophrenia Patients. *Biological Psychiatry*, **53**, 422-430. http://dx.doi.org/10.1016/S0006-3223(02)01476-2

[31] Sawada, A., Porter, S.E., Kayama, M., Setoya, N. and Miyamoto, Y. (2006) Nursing Care Delivery in Japanese Psychiatric Units. *British Journal in Nursing*, **15**, 920-925. http://dx.doi.org/10.12968/bjon.2006.15.17.21906

[32] Sano, T., Harada, M., Sugawara, T., Isaka, N., Masuoka, A., Mikami, A., Shimamori, Y. and Kurosawa, N. (2013) Use of Psychotropics and the Risk of Falls in Hospitalized Psychiatric Patients. *Yakugaku Zasshi*, **133**, 897-903. (In Japanese) http://dx.doi.org/10.1248/yakushi.13-00003

[33] Stenhagen, M., Ekström, H., Nordell, E. and Elmståhl, S. (2014) Both Deterioration and Improvement in Activities of Daily Living Are Related to Falls: A 6-Year Follow-Up of the General Elderly Population Study Good Aging in Skåne. *Clinical Interventions in Aging*, **9**, 1839-1846. http://dx.doi.org/10.2147/CIA.S70075

[34] Soderqvist, A., Stromberg, L., Ponzer, S. and Tidermark, J. (2006) Documenting the Cognitive Status of Hip Fracture Patients Using the Short Portable Mental Status Questionnaire. *Journal of Clinical Nursing*, **15**, 308-314. http://dx.doi.org/10.1111/j.1365-2702.2006.01296.x

[35] Gallego, A.J., Nielsen, J., Hert, D.M., Kane, J.M. and Correll, C.U. (2012) Safety and Tolerability of Antipsychotic Polypharmacy. *Expert Opinion on Drug Safety*, **11**, 527-542. http://dx.doi.org/10.1517/14740338.2012.683523

[36] Steven, J.W. and Gerrit, W.C. (1996) Development of a Policy on Sexuality for Hospitalized Chronic Psychiatric Patients. *Canadian Journal of Psychiatry*, **41**, 273-279.

[37] Tanioka, T., Mano, M., Takasaka, Y., Tada, T. and Kawanishi, C. (2006) Challenge of Psychiatric Rehabilitation for Patients with Long-Term Hospitalizations Using the Nirje's Normalization Principles as a Valuation Standard: Two Case Studies. *The Journal of Medical Investigation*, **53**, 209-217. http://dx.doi.org/10.2152/jmi.53.209