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Perceived Clinical Stressors among Saudi Nursing Students

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Abstract

Purpose: Nursing profession is considered as a stressful and demanding job. The purpose of this research was to determine stressors types and degrees over two data collection periods in 2015-2016. **Methods:** This is a quantitative descriptive research study. A purposive sample of 55 female nursing students (complete 4th year cohort) from Princess Nourah University took part in this study. **Results:** The results highlight that the most influential cause of stress were factors related to taking care of patients, teachers and nursing staff. Moreover, nursing students reported increased level of stress comparing them in two different time periods. **Conclusions:** To overcome these clinical stressors, it requires students to be equipped with competent knowledge, skills and experience in dealing with the changing needs of patients' condition. Future research should explore nursing students' beliefs and causes of stress and how it can be avoided by conducting a qualitative research study.

Keywords

Stress, Nursing Education, Nursing Student, Clinical Practice, Saudi Arabia

1. Introduction

Nursing profession is considered as a stressful and demanding job [1]. Many schoolers reported that nurses face stress in their clinical environment which results in burnout, depression and sleeping disorders [1] [2]. Hence, nursing students need to be prepared in order to face such challenging job. One big challenge for nursing students is to cope with stress associated with training during their clinical placements [3]. Such stress can be defined as a relationship between a person and surrounding environment and it is evaluated by the person own feelings of the situation as being challenging, demanding and outside their available resources [4]. It was reported by many schoolers, that nursing

students are exposed to stress from clinical placements, and they refer it as "clinical stressors" [3] [5] [6] [7]. Clinical stressors among nursing students can result from many factors namely; initial hospital placements experience, clinical assignments and coursework, nursing skills procedures, assessment and clinical exams, and relationship with patients, families and allied health professionals [3] [5] [6] [7] [8].

Bachelor of Science in Nursing in Saudi Arabia

Undergraduate students in Saudi Arabia who wish to undertake nursing as a career have to enroll to a 5-year Bachelor of Science in Nursing (BSN) program. This 5-year program consists of 4 academic years in nursing program and one-year internship training program. Each academic year in the nursing program consists of two levels. For example; year one consists of (level 1 and level 2), year 2 consists of (level 3 and 4), year 3 consists of (level 5 and 6), year 4 consists of (year 7 and 8), and year 5 consists of level 9 [9]. Nursing students in Saudi Arabia have to undertake both theoretical and clinical requirements during their BSN programme. As each academic year consists of two academic terms, each academic term consists of 17 weeks of study. Theoretical and clinical teaching last up to week 15 and week 16 and exam periods commence in week 17. The number of days spent in the clinical placements varies from one course to another. Despite this, all nursing courses share the same vision for clinical placements. This includes applying a unique nursing process for each individual patient; attending nursing handovers, attending medical rounds, observing and assisting in nursing treatments skills, and keeping records and notes regarding the progress of patients' clinical situation. Clinical assessment for nursing students is done by different ways. This may include; using clinical evaluation sheet to address students' competencies according to the course module, Objective Structure Clinical Examination (OSCE), daily homework's, written case studies and completing clinical handbooks.

According to the literature, nursing students in Saudi Arabia faces stress from their clinical environment's [3] [10] [11]. This negative experience, due to stress, can limit students learning and teaching and affect the overall quality of patient care [12]. The aim of this research study was to determine stressors types, and degrees among nursing students during two clinical periods in their final (4^{th}) year of nursing program study. This is an important research study to conduct as it will shed some light on Saudi experience. It will also add more insight about the topic and it will enrich the existing literature.

2. Aim of the Study and Research Questions

The aim of the research study was to determine stressors types and degrees during two clinical periods among nursing students in their final (4^{th}) year of nursing program study. The research question was as the following:

- What are the clinical stressors degrees and types among nursing undergraduate students at each of the data collection periods in 2015 and 2016?

3. Methods

3.1. Design

This is a quantitative research study by using a descriptive research design. Data collection took place after students completed their training placements in two times periods in the first and second academic terms of 2015-2016 academic year.

3.2. Setting

This study took place at Princess Nourah Bint Abdulrahman University (PNU) in Saudi Arabia. PNU is the largest women's University in the world and is a female only university. The maximum students' capacity is 60,000 students [13]. Data collection took place in the college of nursing.

3.3. Study Participants

The study sample included female undergraduate nursing students in their 4th year of the nursing program. The complete year 4 cohort (n = 55) in 2015-2016 academic year were invited to participate in this study. A purposeful sampling technique was employed to recruited participants [14]. Therefore there is no need to do power calculation because the complete cohort of year 4 students was included. The first data collection period started between November and December in 2015, and the second data collection took place between April and May in 2016.

3.4. Instrument

The study employed a validated questionnaire namely; the perceived stress scale [15]. This questionnaire was translated into Arabic language and published by Alzayyat and AlGamal in 2014 [5]. The Arabic version questionnaire was used as it is the mother tongue language for Saudi nursing students. Permission to use the questionnaires was approved by both original authors.

3.5. Demographic Data

Demographic data of nursing students included the following; Age, Academic cumulative score, academic credit hours, marital status employment status, and interest in studying nursing. Hence, all participants were females and speak fluent Arabic as it is the official language in Saudi Arabia.

3.6. Perceived Stress Scale Questionnaire (Sheu *et al.*, 1997)

In order to measure stress among nursing students in their clinical placements, perceived stress scale [15] questionnaire were employed. This questionnaire measures both the degrees and types of stressors [15]. The questionnaire is divided into 6 themes with five Likert scale. The scoring numbers ranged from 0 to 116. A low total score indicates lower level of stress and vise versa. The subscale themes are divided as the following; taking care of patients consists of 8 ques-

tions, stress linked to clinical tutors and staff nurses consists of 6 questions, stress related to coursework and home works consist of 5 questions, stress linked to everyday life and peers consist of 4 questions, stress linked to insufficient clinical knowledge and nursing skills consist of 3 questions, and stress linked to the clinical placemats consist of 3 questions. The total number of questions was 29 questions. Both total scores, and individual subscale scores, were considered. The scoring numbers ranged from 0 to 116. A low total score indicates lower level of stress and vise versa.

3.7. Ethical Consideration

Ethical approval was obtained from the PNU-IRB ethics committee before starting the data collection process. Students' responses via questionnaires were maintained anonymous and confidential. An explanation of the research and answering questions session was given prior to signing the consent form. Moreover, information sheets were given to participants. Participants' names and any other personal information were maintained confidential throughout the study. In cases were students felt uncomfortable in filling up the questionnaires, students were advised to discontinue in filling the questionnaire. However, there were no reported cases found during data collection in both periods.

3.8. Data Analysis

The Statistical Package for Social Science (SPSS version 22.0; SPSS, Chicago, IL, USA) was used to analysis the gathered data. Descriptive statistics and inferential statistical tests were used. The descriptive statistics used were frequency, percentage, mean, standard deviation, median, minimum and maximum. The paired sample t-test, was used to measure the differences between the results collected in the two different time periods. The normality assumption was checked by using the Shapiro-Wilk (SW) statistical test. All stress variables were normally distributed ($P > 0.05$), except of stress from taking care of patients, stress related to teachers and nursing staff. Therefore, the base-10 logarithm transformation was conducted to these variables to obtain more normally-distributed scores.

4. Results

4.1. Demographic Data

Table 1 shows the characteristics of the study sample. Nursing student mean age was 22.65 years (standard deviation (SD) = 0.77), with a range of 21 - 25 years. The academic cumulative score was mean average 3.94 (SD= 0.70), with a range from 3 - 5, half of the students had an average score of 4 (n = 24, 51.1%), average score of 3 (n = 13, 27.7%) and an average score of almost 5 (n = 10, 21.3%). It also shows that 47 of the nursing students were single (n = 47, 85.5%), married (n = 7, 12.7%) and just one divorced (1.8%). In addition, 45 (86.5%) were interested in studying nursing, while just 7 (13.5%) were not. Table 1 also shows that, all students had 17 registered credit hours, and they were unemployed.

Table 1. Demographic data of undergraduate nursing students.

Variable	Frequency (%)	Mean (SD)	Median	Minimum	Maximum
Age					
21	3 (5.5)				
22	16 (29.1)	22.65 (0.77)	23	21	25
23	34 (61.8)				
24	1(1.8)				
25	1(1.8)				
Academic cumulative score average*					
3	13 (27.7)	3.94 (0.70)	4	3	4.90
4	24 (51.1)				
4.90	10 (21.3)				
Academic credit hours	All 17 hrs.	17 (0.00)	17	17	17
Marital status					
• Single	47 (85.5)	0.16 (0.42)	0	0	2
• Married	7 (12.7)				
• Divorced	1 (1.8)				
Employment status	All students unemployed	2 (0.00)	2	2	2
Current university year	All students year 4, level 7	4 (0.00)	4	4	4
Interest in studying nursing					
• Yes	45 (86.5)	0.87 (0.35)	1	0	1
• No	7 (13.5)				

*Academic cumulative score average is equivalent to Grade point average (GPA)

4.2. Degrees of Perceived Stress and Types of Stressors

4.2.1. Stress and Types of Stressors among Level 7 Nursing Students (Term 1)

According to Table 2, nursing students in their 7th level clinical training scored a range from 20 to 102 (mean = 55.93, SD = 15.37) degrees on the scale of perceived stress. Table 2 shows the subscales results of the perceived stress scale. The results showed that, taking care of patients' subscale (mean = 12.67, SD = 4.60), the stress related to teachers and nursing staff subscale (mean = 12.82, SD = 4.15), the stress from assignments and workloads subscale (mean = 11.95, SD = 3.67), the stress from peers and daily life subscale (mean = 7.56, SD = 2.89), the stress from lack of professional knowledge and skills subscale (mean = 5.05, SD = 2.10) and the stress from the clinical environment subscale (mean = 5.87, SD = 2.49). It also shows the ranking of the subscales of the perceived stress and the stress from teachers and nursing staff stress was the highest and lack of professional knowledge and skills stress was the lowest.

4.2.2. Stress and Types of Stressors among Level 8 Nursing Students (Term 2)

According to Table 2, nursing students in their 8th level reported that their degrees of perceived stress in clinical placements period ranged from 38 to 87

Table 2. Perceived stress among nursing students during clinical placements (n = 55).

	Level 7/year 4 (Term 1)			Level 8/year 4 (Term 2)		
Subscale	Ranking	Mean	SD	Ranking	Mean	SD
Taking care of patients	2	12.67	4.60	1	14.55	3.36
Teachers and nursing staff	1	12.82	4.15	2	13.82	4.06
Assignments and workloads	3	11.95	3.67	3	12.16	3.57
Peers and daily life	4	7.56	2.89	4	9.09	4.62
Clinical environment	5	5.87	2.49	5	6.31	2.84
Lack of professional knowledge and skills	6	5.05	2.10	6	4.73	2.16

(mean = 60.55, SD = 12.23). The results showed that, taking care of patients' subscale (mean = 14.55, SD = 3.36), stress related to teachers and nursing staff subscale (mean = 13.82, SD = 4.06), and stress from assignments and workloads subscale (mean = 12.16, SD = 3.57). Moreover, stress from peers and daily life subscale (mean = 9.09, SD = 4.62), stress from lack of professional knowledge and skills subscale (mean = 4.73, SD = 2.16) and stress from the clinical environment subscale (mean = 6.31, SD = 2.84). Table 2 shows that taking care of patients was the highest source of stress and lack of professional knowledge and skills was the lowest stress source.

4.3. Differences in the Perceived Stress Degrees and Types

Using paired t-test analysis, the results revealed that the mean of the total perceived stress scale and the six perceived stress subscale scores were higher among students in level 8 clinical placements than in level 7 clinical placements. The results showed that there was no statistically-significant difference at the level of 0.05 in the total perceived stress scale score and all subscales scores among nursing students in level 7 and level 8 clinical periods except for taking care of patients' subscale and clinical environment subscale see Table 3.

5. Discussion

5.1. Clinical Stressors among Undergraduate Students

According to the results, the most perceived stress among undergraduate nurses in level 7 were stress related to teachers and nursing staff followed by stress from taking care of patients. While in level 8, the most perceived stress among undergraduate nurses were stress from taking care of patients followed by stress related to teachers and nursing staff. A possible explanation on students switching form ranking teachers and nursing staff as the highest source of stressors to stress from taking care of patients in both data collection periods is that students were getting more involved in patient care. This requires students to have competent knowledge, skills and experience in dealing with the changing needs of patients' condition. When student nurses lack these competencies whether because of unclear clinical guidelines and policies or even lack of knowledge, skills and experience, students suffer from stress. Indeed, this is the responsibility of the clinical teachers and educators to asses' students' competencies and readi-

Table 3. Comparing nursing students' perceived stress scores using paired t-test statistics.

Scale/Subscale	Mean(SD)	T	d.f	P-value
Total Perceived Stress Scale				
• Pre	55.93 (15.37)	-1.59-	54	0.12
• Post	60.55(12.23)			
Taking care of patient's subscale				
• Pre	12.67 (4.60)	-2.35-	54	0.02*
• Post	14.55 (3.36)			
Teachers and nursing staff subscale				
• Pre	12.82(4.15)	-1.19-	54	0.24
• Post	13.82 (4.06)			
Lack of professional knowledge and skills subscale				
• Pre	11.95 (3.67)	-0.29-	54	0.78
• Post	12.16 (3.57)			
Clinical environment subscale				
• Pre	7.56 (2.89)	-2.12-	54	0.04*
• Post	9.09 (4.62)			
Assignments and workloads subscale				
• Pre	5.05 (2.10)	0.86	54	0.39
• Post	4.73 (2.16)			
Peers and daily life subscale				
• Pre	5.83 (2.49)	-0.96-	53	0.34
• Post	6.31 (2.84)			

ness to cope with challenging clinical situations. One solution of this is the implementation of simulation in undergraduate teaching and learning. Simulation teaching is an effective teaching method to improve students' competencies, skills and knowledge for learning patient quality of care and safety [16]. This result was consistent with other studies [2] [5] [17] that reported stress for patient care was the most influential factor for stress among undergraduate students.

Also, undergraduate nurses reported high level of stress caused by the nursing staff and teachers. This result was similar to Alzayyat and AlGamal results in 2014 [5]. It seems like students'-teachers' relationship is an influential contributing factor for stress. This can be due to the unclear expectations between teachers and students. Indeed, it is the responsibility of the teachers to set out a clear, defined and well establish learning outcomes, objectives and goals for any clinical placement. This will avoid teachers to have negative expectation of their students, and thus causes stress for students. Moreover, the relationship of nursing staff and students were reported as a high source of stress and it had students to have a negative experience of belongingness in their clinical learning setting [18]. Staff nurses who are uncooperative, unwilling to help and unsupported causes students to be stressed. Again, it is the responsibility of clinical teacher to improve students- staff nurses' relationship by employing different strategies. For example; improve communication channels between the univer-

sity and hospital and the implementation of preceptor education program before starting the clinical placements of nursing students.

Despite these differences in ranking the most perceived stress, students ranking in assignments and workloads, peers and daily life, clinical environment and lack of professional knowledge and skills were consistent in both periods. These results were similar to [2] [5] [17]. In this study, the amount of overloaded coursework's, completing clinical log books and assignments given to students were ranked as one of the top sources of stress.

In summary, program directors, course coordinators, and clinical teachers have a great responsibility in creating a stress free environment for their students. This is done by providing students with a well established foundation of knowledge, nursing skills, ethics and values. This will ensure on providing an effective clinical learning experience and hence its effect on the overall patient quality of care and safety.

5.2. Differences in the Perceived Stress Degrees

In this study, nursing students reported increased level of stress comparing them in two different time periods. The increase level of stress indicates that students were not coping well in their clinical placements. This will have a negative clinical learning experience on students. The increase level of stress with the progress level of undergraduate nursing program was also reported by Alzayyat and Al-Gamal [8]. Again, it is the program director, course coordinator and clinical teacher responsibility to reduce the contributing factors which causes stress among nursing student in clinical placements. There are many strategies to overcome this. For example; improving nursing program by getting students and clinical instructors feedback and expectations, improve clinical teaching by employing simulation, set a clear and well defined learning objectives for each clinical day and finally improve communication channels between the university and the hospital setting.

6. Conclusion

This descriptive research study identifies types and degrees of clinical stressors among Saudi nursing students. The result highlights that the most cause of stress from the clinical practice were factors related to taking care of patients, teachers and nursing staff and assignments and workloads. Making use of the results regarding identifying types and degrees of clinical stressors among undergraduate nursing, the nursing clinical instructors, course coordinators, and program directors can take action to reduce level of stress. This can be done by preparing students with knowledge, skills, and experience needed in clinical practice settings, also, reviewing the nursing program and training clinical instructors. It is recommended to do more research on nursing student competencies before starting the clinical placements. This will help in addressing their needs and equipping them with all needed knowledge and skills before starting their clinical placements.

Limitations

The study sample included purposive sampling technique which has its limitations. This may include some students being absent and not participating in completing the questionnaire. This could have some impact on students' response which in turn may slightly change the results.

It is recommended to have a qualitative study which may shed some light into students deep feelingly and intentions regarding clinical stressors.

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Application of Palliative Care in Improving the Quality of Life of Patients with Cancer Pain

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Abstract

Objective: To explore the effect of palliative care on the quality of life of patients with cancer pain. **Methods:** For May 2015 to May 2016 hospitalized 57 patients with advanced cancer pain carry out palliative care. At the same time, the quality of life questionnaire, including physical function, role function, emotional function, cognitive function and social function, were investigated at the time of admission and 6 weeks after admission. **Results:** Patients with various functions have significantly improved after palliative care ($P < 0.05$). **Conclusions:** Palliative care can effectively improve the quality of life of patients with cancer pain. It is worth in clinical promotion.

Keywords

Cancer Pain, Palliative Care, Quality of Life, Nurse

1. Introduction

Cancer pain is a common symptom in cancer patients [1] [2] [3], more than 50% of cancer patients have pain, of which 30% of intolerable severe pain [4], seriously affect the quality of life of patients, and easy to make patients lose the courage and confidence of life. Palliative care is an active, holistic approach to care for patients with incurable diseases. The main approach is to control pain and other symptoms, manage mental, social, and spiritual problems, and improve the lives of patients and their families Quality [5]. The department from May 2015 to May 2016 for 57 patients with cancer pain in patients with palliative care, and achieved good results, the report is as follows.

2. Materials and Methods

2.1. Study Design

This study adopted a quasi-experimental one-group pretest/posttest design and a

convenience sampling method. Study participants, who were first admitted to the hospital for cancer patients with pain, participated in a 6-week palliative care in this study.

2.2. Participants and Setting

Participants were recruited between May 2015 and May 2016 a total of 60 hospitalized patients, The inclusion criteria were as follows: 1) Initial diagnosis of advanced cancer patients and first admitted to the hospital, admission pain score of 5 - 10 points; 2) Use of oral opioid or analgesic Oxy Contin for titration after admission, the titration success, pain score control in 3 points or less; 3) Informed and consent to participate voluntarily. Exclusion criteria: 1) Patients with non-cancer pain; 2) Titration is not successful, pain score control in more than 3 points; 3) Cannot cooperate with the investigation of patients.

The initial recruited 60 cancer patients with pain accepted the invitation; however, after 2- 4 weeks, three patients left the program. The reason of withdrawal from the study was death. In addition, because the patient source is less, and in order to reduce the study of the interference factors, strictly set the inclusion criteria and exclusion criteria, causing a small sample size in this study. Finally, only 57 patients completed the study.

2.3. Palliative Care Method

2.3.1. Provide a Good Ward Environment

Nurses should pay attention to the ward environment, keep the room fresh air. Arrange the ward according to the severity of the patient's condition, such as: the disease phase, or in accordance with the wishes of patients choose a single room to facilitate family members. For stable and more susceptible to disturbed patients may be appropriate to reduce the night patrol, try to remove the factors that cause discomfort.

2.3.2. Life and Nutritional Care

patients with advanced cancer have varying degrees of malnutrition, encourage patients to eat high-calorie, high protein, high vitamin, digestible food, according to the patient preferences, do not stress taboos, wards prepared microwave oven to facilitate patients at any time snacks. For patients who cannot eat, should be prescribed to enteral nutrition or intravenous nutrition therapy.

2.3.3. Psychological Care

Palliative care is to help patients with a positive attitude as possible to face life. Nurses should promptly detect and deal with the psychological problems of patients, and family members to support patients with the correct face of the disease, maintain an optimistic attitude.

2.3.4. Pain Treatment and Care

1) Church of patients with mild pain relief of common methods such as deep breathing, rhythmic massage, relaxation, to participate in activities, music and rehabilitation exercises; psychological suggestion such as words suggestive, drug

suggestion, sedative, hypnotic and so on. 2) Respect the patient's response to pain: focus on language and physical communication with the patient, to prevent improper language on the psychological harm caused by patients. Often accompanied by the patient, listen to the voices and needs of patients, to create a warm and appropriate ward environment, as much as possible to meet the needs of patients in all aspects. 3) To promote patient comfort measures: to avoid constipation, can eat crude fiber, nutrient-rich food. Once the nausea, vomiting, constipation, etc., adverse reactions to timely and effective treatment. 4) Pain assessment standardization, assessment of nurses and doctors in a timely manner, according to the patient's pain and changes in condition, timely adjustment of drug dose (dose titration), or change the way of pain, if necessary, use analgesia pump. At the same time, assess the family members and relatives of patients with pain treatment knowledge, attitude and role in the treatment to understand their difficulties. 5) To strengthen the education of nurses, to avoid the behavior of non-timely medication, to pain medication as far as possible to do medication to the mouth. Close observation of the use of analgesics adverse reactions, asked whether the patient because of adverse reactions to self-decrement or refusal of medication behavior. Strengthen the education of patients and their families, to avoid leakage medication, not on time medication, self-decrement or withdrawal behavior. Informing patients and their families of the common cause of outbreaks of pain are changes in position, activities, meals, etc., at the same time, to help patients find as much as possible to control the incentive for the outbreak of pain caused by the method. If the patient due to examination, fasting and other reasons not to take medicine on time, nurses should promptly contact the doctor, according to the disease to give other ways of pain medication.

2.3.5. Respect the Patient's Right to Know and Privacy

Nurses and family members first unanimous, and patients or families to discuss care plans and measures, patients can choose to accept or refuse care. In the nursing process, the privacy of patients is protected.

2.3.6. Death Intervention

Understanding of life, respect for life, enhance the value of life, the death of patients education, so that patients understand the Western culture to treat the death of the basic views and attitudes. Patients with advanced cancer are no longer satisfied with how to prolong life, no longer pray for too much treatment, more is to consider how to alleviate the pain. First, patients create a family-style ward environment, respect for the wishes of patients and families, concerned about and meet the patient's personality, dignity, allowing patients to retain their lifestyle, To take active palliative and supportive therapy, control symptoms, eliminate pain, get rid of the fear of death and anxiety of patients, to understand the death is the objective law of life. Only know about death, a correct understanding of death can be a positive view of life, aware of the meaning of life, bearing the responsibility of survival.

2.4. Instruments

The study tools comprised a structured questionnaire designed in this study, including basic information, disease characteristics, the quality of life Checklist EORTC QLQ-C30 [6].

Basic Information: The basic information obtained was age, height, Gender, religion, marital status, education level, economical status.

Disease characteristics: Diagnosed disease, pain score, pain treatment.

EORTC QLQ-C30: The scale includes 30 entries, including 1 overall quality of life scale and 5 functional scales, that is, physical function, role function, emotional function, cognitive function, social function, The scale score of 0 to 100 points, the higher the score that the better the function, the higher the quality of life.

Study Tools and Tests of Reliability and Validity: The scales adopted in this study were widely used domestic and international scales, all of which exhibit good reliability. In this study, EORTC QLQ-C30 was 0.85.

2.5. Ethical Considerations

This study was approved by the institutional review board of the hospital where the study was conducted. The purpose and process were explained to the participants, and after signing an informed consent form, they were enrolled in the study. In addition, participants were informed that they could withdraw from the study at any time without a loss of benefits. The patients were assured that involvement in the study would not affect their medical care and that all information obtained from the questionnaire would be treated confidentially and used only for research purposes.

2.6. Data Collection Procedure

Investigation method Interview of basic information and disease characteristics, Quality of life investigation, using EORTC QLQ-C30, respectively interview, on admission and 6 weeks after admission of patients with quality of life score comparison.

2.7. Data Analysis

SPSS version 19.0 was used to analyze data and significant level was set as 0.05 (SPSS, Chicago, IL, USA). Participants' basic information was exhibited according to frequency, percentage, mean, and standard deviation (SD).

3. Results

3.1. Basic Information and Disease Characteristics of Participants

The basic information of study participants is shown in Table 1; and the disease characteristics of participants are shown in Table 2.

3.2. The Quality of Life of Participants

The quality of life score before and after the palliative care was significant dif-

ference ($P < 0.05$), the score of 5 functions and overall quality of life shown in Table 3.

4. Discussion

Quality of life is an individual in the social and daily activities of the functional power and subjective feelings, is biological, medical and social psychological

Table 1. Basic information of participants (N = 57).

Characteristics	Categories	n	%	
Age (N = 57)				M ± SD 50.16 ± 14.19
	25 ~ 40	18	31.58	
	41 ~ 60	26	45.61	
	61 ~ 80	10	17.54	
	>80	3	5.26	
Gender	Male	37	64.91	
	Female	20	35.09	
Religion	Christianity	2	3.51	
	Buddhism	9	15.79	
	None	46	80.7	
Marital status	married	37	64.91	
	Not-married	16	28.07	
	Widowed	4	7.02	
Education level	Elementary	3	5.26	
	Middle	18	31.58	
	Senior	21	36.84	
	University	15	26.32	
Economical status	High	17	29.82	
	Middle	36	63.16	
	Low	4	7.02	

Table 2. Disease characteristics of participants (N = 57).

Characteristics	Categories	n	%
Diagnosed disease	gastric cancer	8	14.03
	liver cancer	3	5.26
	breast cancer	5	8.77
	colon cancer	12	21.05
	esophageal cancer	2	3.51
	pancreatic cancer	7	12.28
	prostate cancer	5	8.77
	ovarian cancer	7	12.28
	lung cancer	8	14.04
Pain score(on admission)	5 - 7	39	68.42
	7 - 10	18	31.58
Pain treatment	Oral morphine tablets	52	91.23
	TTS-Fentanyl	5	8.77

Table 3. Comparison of quality of life scores before and after palliative care scores, x ± s.

The category of function	Dimensions and subscales			
	On admission	After 6 weeks	t-value	P-value
body function	61.23 ± 6.31	68.53 ± 4.75	−13.50	0.000
role function	59.03 ± 4.68	65.20 ± 4.50	−14.66	0.000
emotional function	59.56 ± 4.74	69.27 ± 2.82	−16.65	0.000
cognitive unction	50.60 ± 2.51	59.20 ± 3.19	−19.74	0.000
social function	61.56 ± 2.94	68.07 ± 2.94	−10.65	0.000
overall quality of life	61.06 ± 2.49	67.57 ± 3.84	−13.81	0.000

collection concept [7]. The cancer pain as a tumor patient's fifth vital signs, both physical and psychological, will be deeply troubled by the patient, which seriously affects the quality of life of patients.

Palliative care in developed countries has formed a more complete system [8]. In this study, palliative care was used in the care of cancer pain patients, strengthen the nutritional intervention of patients, psychological care and humanistic concern, attention to the control of pain and complications of treatment, attention to the death education for patients and their families. Tumor is a high-consumption disease, pain treatment can also cause gastrointestinal reactions, therefore, cancer pain patients usually malnutrition. In the process of palliative care, through nutritional evaluation and intervention care, to improve the nutritional status of patients, reducing the patient malnutrition caused by fatigue, edema, and thus improve the patient's body function (T = −13.50, P = 0.000); When patients know that they are diagnosed with cancer, they often produce a series of psychological reactions, and because of painful torture, the patient is more likely to produce anxiety, fear of emotions. In this study, through the effective control of pain, attention to psychological care and humanistic concern, to reduce the patient's negative emotions, increased confidence in life, so that the patient's emotional function improved (t = −16.64, P = 0.000); Any social role needs to have a process of adaptation, the patient role is no exception. Through the communication with the patient, respect for the patient's right to informed consent, and with the patient to develop care plans and care measures, thus improving the patient's treatment and care compliance, so that patients more easily adapt to the patient's role function (t = −14.66, P = 0.000); Studies have shown that: nurses on cancer patients with pain management education is more conducive to the patient to reduce the pain and pain medication use obstacles, improve the effectiveness of cancer pain management [9], In this study, in addition to active treatment of pain, but also to strengthen the nurses, patients and their families on the pain-related knowledge of education, improve the patient's cognitive function (t = −17.74, P = 0.000); In the process of palliative care, death education is strengthened, so that patients and their families establish the correct attitude and cognition of death, take a positive attitude to live and improve the social function of patients (t = −10.65, P = 0.000); All in all, after a se-

ries of palliative care, the patient was fully cared for from the body and mind, improving the overall quality of life of the patient (t = −13.81, P = 0.000). All in all, after a series of palliative care, the patient was fully cared for from the body and mind, improving the overall quality of life of the patient (t = −13.81, P = 0.000).

In summary, palliative care to improve the quality of life of cancer pain patients have a role, it is worth in clinical application. Nurses should strengthen the professional training and education of palliative care, learn from foreign successful experience, take the initiative to cooperate with doctors, and provide relevant objective symptom assessment and patient subjective assessment, to strengthen disease-related knowledge education, palliative care applied to cancer patients Care, to better improve the quality of life of patients.

5. Conclusion

The results of this study show that palliative care can improve the quality of life of cancer patients. However, the results of this study are limited by the single-group pretest/posttest design, a study length of only 6 weeks, and a small sample size; therefore, the results should be generalized with caution. In addition, palliative care is still at the beginning of the country, it involves patients, families, all aspects of society, but also involves science and culture, ideology, economy, law and other fields, we need further exploration and practice. Therefore, recruiting more cancer pain patients, increasing the number of samples, further research that adopts a quasi-experimental design and involves a control group to enable comparing the effectiveness, to improve the generalizability of the results is necessary.

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Enhancing Holistic Identity through Yoga: Investigating Body-Mind-Spirit Interventions on Mental Illness Stigma across Culture—A Case Study

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Abstract

Objective: Mental illness stigma plagues many individuals with mental health issues such as depression. Labels attributed to the mentally ill focus on meeting diagnostic criterion, increase association with mental illness identities, and do not always promote greater wellbeing. Body-Mind-Spirit (BMS) interventions for depression address mental health without promoting stigmatizing labels. This study identifies how yoga can help to reduce mental illness stigma, and examines the effectiveness of a yoga intervention conducted by an expatriate in a cross-cultural context. **Methods:** This study took a qualitative research approach to examine the effectiveness of a four-week yoga class as an alternative Body-Mind-Spirit (BMS) intervention on participant Jenny (pseudonym) by a licensed yoga instructor and expatriate. Interpretive content analysis of post-intervention interviews, and subjective observational analysis throughout the yoga classes captured the movements of Body-Mind-Spirit as well as their impacts on the participant's perceptions of mental illness and the change through yoga practice. **Results:** Some specific themes from the participant's narratives were identified that could give light to the mechanism of change through yoga that stifles mental illness stigma, transforms identity, and enhances attention. **Conclusion and implications for practice:** Most notably, changes occurred through the physical to psychological axis of well-being, indicating some symbolic mechanism in yoga that facilitates the flow of information from the body to the mind. As Jenny's awareness of her body deepened, her association with a stigmatizing mental illness identity decreased. Although this study was limited in its generalizability, it shows an increased understanding of how identity is an important link between BMS interventions and mental illness stigma. Furthermore these findings suggest that there is a need for rigorous research in the effectiveness of yoga on mental ill-

nesses such as depression.

Keywords

Clay Art Therapy (CAT), Depression, Expressive Therapies Continuum, Alternative and Complementary Medicine, Emotion

1. Introduction

Mental illness stigma has profound effects upon the wellbeing of those who suffer from mental health problems. Identifying with a stigmatizing label can buffer negative in-group/out-group dynamics by promoting self-acceptance and normalization of otherness [1] [2]. However, identifying with mental illness identities may not have the same positive effects. Disclosure of mental illness identities emerges as an adaptive strategy, however does not bulwark relationships with non-mental illness identified individuals [3]. In other words, identifying with mental illness may create greater distance from 'normal' groups, and actually increase negative social interaction, stigma, and wellbeing [4]. In recovering from mental illness, redefining sense of self is an important factor in establishing wellness [5]. As such, identity is a key aspect in understanding experiences of recovery from mental health struggles. Since identifying with stigmatic labels can arise from mental illness diagnoses, treatment of mental illness that does not emphasize stigmatic labels could be beneficial for addressing redefinition of self-identity, self-awareness, and wellbeing for individuals with mental illnesses.

1.1. Body Mind Spirit Approach

The need for holistic approaches to mental health care has been clearly expressed in mental health research [6] [7] [8]. In particular, Body Mind Spirit (BMS) approaches to mental health care have received attention for their integrative approaches. Within this model there exist three interacting domains which contribute to the overall health of an individual: body, mind, spirit [9]. While conceptualizing what it means to have a healthy body is fairly simple, understanding the health of the mind and spirit is more complex. In this model the mind consists of psychological experiences (emotion, cognition, learning), while the spirit consists of relationship experiences (relationship with the self, people, higher power). While these three domains are understandable as separate entities, working within this model requires an understanding of the interaction of different domains. As such, many different therapies could fit into the BMS framework according to different domain combinations, and with emphasis on different aspects of the model.

Body. Much of yoga's popularity in recent years has been due to its benefits for the physical body [10]. Research shows that the physical practice of yoga is in itself a type of therapeutic approach. Yoga as a body-centered or body-based approach to therapy emphasizes the role of alignment, proprioception, and move-

ment as a means of improving psychological function [11]. Although this meta-analysis posits that the "body" aspect of yoga can be an effective supplement to traditional psychotherapy, other research supports the significance of yoga's role in embodiment and symbolic processes [12] [13]. Broadly speaking, the physical aspects of yoga help to improve proprioception, a body awareness that also improves awareness of non-physical queues [14]. Reference [12] suggests that yoga increases awareness of physical sensations, and that this process of embodiment could explain the link between yoga and psychological health. Reference [13] further supports this claim in showing that awareness of body sensations helps facilitate self-monitoring and self-awareness. This research supports the idea that engaging in physical health practices may be able to promote awareness of a symbolic connection between body and mind. As a nonverbal means of communicating and understanding the self, yoga may serve to reduce threat responses such as self-shame in depressed individuals.

Mind. When considering the definition of "mind" it is important to consider both cognitive and emotional aspects of psychological ability. Cognition and emotion work interchangeably on psychosocial and biological levels [15], and thus inherently influence one another, particularly when considering mental health. Yoga has been shown to improve executive function, planning, and control abilities [16]. People who practice yoga are also shown to have greater emotional moderation due to increased attention resources [17]. As a mindfulness practice, yoga incorporates many awareness-focused aspects. The practice of yoga is fundamentally based on self-examination, which is a cognitive process that involves becoming aware of both physical and psychological experiences. Re-focusing of mental energy and cognitive reappraisal may help in moderating severe negative emotional responses. Women with major depressive disorder who completed an 8-week Hatha Yoga intervention were shown to have lower levels of depressive symptoms, and ruminate less on negative events [18]. In preventing emotional states that cloud the points of one's attention, yoga may aid in alleviating depressive symptoms by channeling cognitive and emotional energies into productive states that are advantageous for subjective well-being.

Spirit. In recent years, research has demonstrated that yoga may play a role in developing spiritual relationships. Spirituality, as a relationship construct, can be sought through relationships with a higher power, but also through the relationship with the self [19] [20] [21]. As a facet of spirituality, self-understanding seems to be an important for mental health care, stigma, and yoga [22]. Research shows that education about mental illness helps reduce experiences with stigma in certain populations [23], thus with further self-understanding, greater mental health can be attained. In a qualitative examination of different forms of yoga, participants were able to actualize their capacities, that is to say that yoga aided in promoting relationships with the self [24]. In promoting connection to sense of self, yoga has the capacity to counteract low self-esteem, which is closely associated with mental illness and mental illness stigma. Furthermore, self-efficacy serves as a predictor of physical, psychological and spiritual health [25]. As such,

yoga provides a means for individuals to gain agency over their own health practices.

1.2. Yoga for Mental Illness Stigma

Evidently, previous research indicates that yoga as a health practice helps to target several different health domains. Through the physical practice of yoga, practitioners engage in embodiment, and explore the symbolic connections between the body, mind, and spirit. Yoga promotes self-awareness, facilitates psychologically productive attention, manages negative affective states, and promotes sense of connection. It appears that yoga maintains a holistic approach to healthcare that does not define health based on stigmatizing medical-model definitions. Despite these findings, there is little research that explores how yoga as a BMS intervention could impact perceptions of mental illness.

Previous research has indicated that yoga is efficacious in domains such as the body, the mind, and the spirit respectively [10] [17] [24]. While research has shown the benefits of yoga on these three domains, little research exists which explores yoga as a practice that combines or integrates these three areas of health. In order to pursue further understanding of yoga as a holistic health practice, understanding how yoga supports the BMS paradigm, and connects the three domains can assist in further research and application in clinical settings. Furthermore, no research has specifically addressed how yoga may impact mental illness stigma. As a holistic approach to mental healthcare, it seems logical that a multifaceted approach to healthcare may reduce stigmatic attitudes, and encourage positive self-perceptions in the face of mental illness.

1.3. Purpose

Exploring the ways in which yoga fits the BMS model could help to elucidate how holistic health practices effect perceptions of mental illness. Finding new methods of treatment that do not promote stigma could increase treatment adherence, and help-seeking behaviors in those who suffer from mental illness. Furthermore, understanding the relationships between the body, mind, and spirit in mental illness treatment can enable a deeper understanding of how mental illnesses such as depression manifest in all aspects of a person's life. In its totality, this research seeks to examine the potential mechanisms through which yoga can reduce stigma, and promote holistic health.

The data in this article comes from a master's dissertation that explored yoga as a BMS intervention from a cross-cultural perspective. The dissertation research was conducted by a licensed yoga instructor from the US with 4 years prior teaching experience. In that study, a 4-week clinical yoga intervention for depression was instituted for a single participant of Hong Kong Chinese background. This research sought to explore the potential for yoga to serve as a means of impacting experiences with mental illness stigma across cultures. The physical, psychological, and spiritual aspects of yoga as a BMS were explored in addition to yoga's effects of mental illness stigma. While yoga as a BMS inter-

vention could potentially break down cultural barriers, the cross cultural nature of it could also exacerbate differences in cultural perceptions of mental illness.

2. Hypothesis

In order to address the aforementioned objectives, two hypotheses were developed which attempted to answer two essential questions: did yoga promote change in perceptions of mental illness and did yoga help facilitate the interconnectedness of the body, the mind and the spirit that benefitted wellbeing?

3. Methods

This study used qualitative research methods to investigate both the process and outcome of yoga as BMS intervention.

3.1. Sampling & Samples

Due to the exploratory nature of this research, a specific clinical population with mood disorders was selected to investigate the effects of yoga. As a pilot study, a convenience sample with eight to twelve samples with diagnosed mild to moderate levels of depression and/or anxiety, aged 18 - 65, were aimed to be recruited between December 15th, 2015 and January 15th, 2016. All participants were recruited by the collaborator – the OCD & Anxiety Group Hong Kong, a newly established nongovernmental organization that did not have a specific site in which the research could be conducted. Extent of depressive symptoms and appropriateness of intervention were evaluated based on long-term behavioral observation from the OCD & Anxiety Group Hong Kong. The founder of the organization, as the only administrative staff member, would take part by recruiting participants from the organization. The exclusion criteria of participants included those who were: 1) on psychoactive medication, 2) with or have suicidal tendency, or 3) unable or unsuitable to take part in group work setting. All measures were approved by the University of Hong Kong Research Ethics Committee.

Participants were recruited to participate in this research through both email and oral communication. An email was administered to the contact list at the OCD & Anxiety Group HK, and the recruitment message was also read aloud at a group meeting. In order to reduce recruitment bias, the recruitment message limited potentially stigmatic wording, and emphasized the importance of "mental wellness" in this research. At the time of the recruitment email a specific location was unable to be reserved, and thus a nonspecific time was given to participants such that a specific time and location for the yoga class could be arranged to accommodate participant schedules. Ultimately, the project took place at the Centre on Behavioral Health at the University of Hong Kong. Participants indicated interest in the study via phone or email.

3.2. Intervention

In this pretest/posttest design study with post-intervention interview, partici-

pants were asked to attend 4 consecutive weeks of once-weekly, hour-long yoga classes. The treatment lasted from January 23rd and February 13th. After the completion of the preliminary forms (Beck Depression Inventory, Beck Anxiety Inventory, and Attitude towards Mental Illness Scale), participants were asked to engage in a 60-minute yoga class designed in the Hatha Yoga style. Each yoga class was conducted by a RYT-200 Yoga Alliance Certified Instructor with four years prior teaching experience. The classes were conducted in English, the second language of the participants. This style of yoga was selected as it is based in traditional yoga practices that most accurately reflect Body-Mind-Spirit philosophies. After each individual yoga class, participants engaged in a 10-minute semi-structured interview that explored their experiences with yoga, mental illness, and stigma. Similar interviews have been used to extract qualitative data from yoga practitioners' experiences [26]. This approach utilized formulaic, yet free-flowing questions to help elucidate potential mechanisms through which yoga has an impact on mental illness stigma.

Each of the standard Hatha yoga classes began with an opening guided meditation that focused on a different aspect of the yoga experience (Breath, Intention, Energy, Body and Mind). Following the opening meditation, participants engaged in a series of physical postures called asana, which are considered standard beginner postures, and include foreword folds, twisting, balance, and stretching. Once all of the postures had been completed, the instructor guided a final relaxation when participants scanned their bodies and minds, and engage in self-connection practices.

3.3. Data Collection (Combined Qualitative Measures)

Data of this study was collected via qualitative measures that included content from post intervention interviews, as well as observations from the processes of each yoga class. Although this research was originally intended to be a qualitative group yoga intervention, the eventual one-on-one yoga classes actually enabled the use of several different qualitative measures in the assessment of the participant's behaviors and experiences throughout her participation in the research.

After each yoga class, a one-on-one semi-structured interview was conducted in which the researcher asked questions to target the impacts of yoga. Specifically, these questions addressed experiences and perceptions of mood disorders, stigma, and yoga. The nature of the interview was meant to become progressively more intimate as rapport was developed between interviewer and interviewee. See **Table 1** for a list of sample interview questions

Controlled observational analysis of behaviors throughout the yoga class enabled a greater understanding of in-the-moment experiences, and of the habits that participants may not be aware of, or able to articulate during interview. Observations were categorized broadly into physiological, psychological and spiritual reactions of the participant; these three domains reflect the framework of the intervention as a Body-Mind-Spirit Model. For each yoga session, the par-

Table 1. Questions on mood disorders, stigma, and yoga.

	Questions
1	What did you notice about yourself during the class?
2	Would you recommend yoga to other people with anxiety or depression? Why?
3	How do you think other people perceive taking yoga for depression and anxiety?
4	How would you summarize your experience in the yoga class?
5	What in particular did you enjoy more?
6	How would you define relaxation? How does yoga help with anxiety and depression?
7	Why do you think that people might not want to go to yoga for depression/anxiety?
8	How do you motivate yourself to come to this yoga class?
9	Now, how do you feel about anxiety and depression?

ticipants' physical reactions to specific postures, as well as her verbalizations of her inner experience are recorded and categorized to inform later data analysis.

3.4. Data Analysis

Audio-recorded transcripts of semi-structured interviews were assessed utilizing interpretive content analysis. Through content analysis, ambiguous statements were given structure by interpreting word choice in a variety of broad categories [27]. In the context of this research, the content was analyzed based on their applicability to two major constructs; body-mind-spirit, and stigma. Comments pertaining to the physical self were categorized under "body." Comments pertaining to the psychological self (ex. cognition, emotion) will be categorized under the "mind." Comments pertaining to self-awareness or self-connection will be categorized under the "spirit."

The themes of "body," "mind," and "spirit" as categorizations were derived from controlled observation during the yoga class and were adopted for data interpretation. Despite the fact that interpretive content analysis from interviews and controlled observation during yoga practice were analyzed separately, the results of the analyses were triangulated by comparing the contents that were derived from each data source and between researchers. The combined process – outcome data collection and analyses methods could function to examine the effectiveness of yoga on the designated objectives and provide facts to how yoga could potentially impact body-mind-spirit that could expand and give hints to the mechanism of change in yoga.

4. Results

4.1. Sample

After the recruitment period completed, five participants showed interest in the study and a preliminary phone-interview was conducted, after which three out of five prospective participants wished to continue with the study. The participant did not complete demographic data, for she was not willing to disclose

personal particulars and specific information about herself, for fear that might label her as mentally ill, thus suggesting mental illness stigma. She appeared to be between 50 and 65 years of age, Hong Kong Chinese, of medium height and thin figure. The participant did not attend one of the four required sessions, and thus there is only data from three yoga classes.

4.2. Controlled Observational Analysis

Controlled observational analysis was measured across the three domains of Body, Mind, and Spirit, which are represented in Table 2. In the aspect of Mind, through each of the sessions, the participant showed progress in concentration, higher frustration and disturbance tolerance, and decline in trivial preoccupations. In the aspect of Body, the participant showed gradual mastery of physical balance, higher endurance and flexibility in making different yoga postures, improved breathing practice, and a sustained siting posture for meditation. In the aspect of Spirit, the participant had progress from not showing any distinct change, to the awareness of focusing experience and mindful practice throughout yoga practice. Overall, the combined observational analyses exhibited that the participant could psychologically attune to the routine of a yoga practice. It was speculated that if more sessions were available, there could have been be a clearer demonstration of the flow of changes in state of being. Additionally, the participant demonstrated improvement in balance, flexibility, and maintenance of postures.

Table 2. Experiences with mind, body, and spirit during yoga class.

Session	Mind	Body	Spirit
1	• Flustered upon entering the yoga classroom • Preoccupation with the orientation of her yoga mat, and cleaned the mat twice before beginning the class • Continually asking questions despite being told to refrain, showing skepticism • Frustration at not being as "good at yoga as I once was"	• Frequent opening of the eyes • Requiring a bathroom break after 30 minutes • Difficulty balancing • Holding postures longer than instructed to	• No indication
2	• Cleaned her yoga mat twice prior to the beginning of class • Distracted and disengaged from the yoga practice for the first 10 minutes • Asked fewer questions during the class and showed greater concentration	• Improvement in balancing during vriksasana • Asked for a restroom break in the middle of class because "otherwise [she] won't be able to relax" • Deeper breath • Able to sit silently and stilly for almost 3x as long as the initial meditation	• Improved self-awareness and connection to her personal experience, "I do better when I am more focused"
3	• Not perplexed or flustered upon arriving • Cleaned the yoga mat twice • Increased concentration and focus – only made one comment throughout the 60 minute class	• Much deeper and more consistent breathing • Appeared more concentrated on her experience • Able to hold postures for longer • Improvement in balance and flexibility	• More mindful throughout the practice

4.3. Interpretative Content Analysis

Interpretive content analysis measured interview responses in terms of relevance to the body-mind-spirit paradigm, and to mental illness stigma, which are represented in Table 3. It can be seen that in all domains (body, mind, and spirit) the participant experienced change from a concrete and fixed self-concept to invoking change in her mental health behaviors and generating a sense of self-efficacy that could potentially helped to eliminate stigmatic attitudes.

5. Discussion

The initial aims of this study were to further explore experiences with stigma in the context of BMS interventions. Despite the fact that qualitative analyses did not directly demonstrate changes in mental illness stigma after the yoga intervention, notable changes in personal insight were observed. After the intervention Jenny attested to having improved attention resources, emotional control, and a deep interest in the pursuit of self-actualization. Most significantly, after the intervention Jenny exhibited less identification with stigmatizing labels associated with mental illness. It is possible that the discovery of new aspects of herself enabled Jenny to cultivate a greater sense of efficacy, and confidence in herself.

Table 3. Experiences with yoga and perceptions of mental illness and stigma.

Session	Body, Mind, Spirit	Qualitative Analysis of Change on Mental Health	Stigma
1	*Mind* "I'm an A-type personality" (*i.e.* faster and stronger response to stressors) "I cannot just relax and let it be" *Spirit* "the class was not very satisfying for me"	*Mind* Slight change in disturbance of negative moods from beginning to end of practice *Body – Mind* Initial attending to body/mind Diversified self-concept	*Demonstrated no stigmatic attitudes* "I would definitely tell a friend that I am doing yoga for my depression"
2	*Body* "if you don't feel the stretch, you don't feel the relaxation" relaxation considered as a physical concept *Mind* "I feel frustrated, it is difficult [to overcome depression]" "to make change I need 'motivation, determination, and hard work'" *Spirit* "I will do anything to have a more joyful, relaxed life"	*Body – Mind* Improved understanding of interconnected relationship of body-mind *Spirit* Increased enjoyment of and satisfaction in yoga practice Discovery of a way to achieve self-fulfillment	*Discovery of a potential way to actively eliminate stigma via yoga practice*
3	*Body* "after experiencing the stretching I learn a bit how to relax" "focusing on my body helps to make my mind and body to relax" noted improvement in sleep quality *Mind* "I am quite unable to contain my emotion" "I will try to take a breath when I feel this [highly emotionally reaction] again" *Spirit* "I feel great"	*Body – Mind* Continual strengthened understanding of interconnected-ness of body-mind	*An improved sense of self-efficacy as a possible means of eliminating a stigmatic attitude*

5.1. Mental Illness Stigma & Process of Change through Yoga

The participant demonstrated stigmatic attitudes towards mental illness in her repetitive statements that her personality and identity were defined by her mood problem. However, the researchers did not provide space for the participant to fully explore and express the contents of mental illness stigma. From her first session onwards Jenny closely associated her diagnoses of depression and anxiety with her personality. Jenny seemed to construct an identity based on a psychiatric diagnosis. Jenny's tenacity in repeating her diagnoses is also mirrored in the language she uses to describe her abilities. Immediately after discussing this inability she reverts to explaining that her "A-type" personality justifies why she "cannot relax." While research suggests that identity selection can buffer negative in-group/out-group dynamics [1], identifying with a mental illness identity may increase association with other mental illness sufferers and increase also negative social interaction and stigma [4], Jenny's acceptance of her mental illness may also inhibit her access to social support that is not in a mental-health centered setting.

Initially, her imposed mental illness identity made it difficult for her to accept her capacities beyond the symptoms that define anxiety and depression (in this case, stress or the inability to relax). Through a physical practice she began to dissociate her physical capacities from her psychological identity. Initially, Jenny could not define what the word "relaxed," meant to her; however after the series of yoga classes she began to define relaxation as a physical sensation. As she gained more access to understanding her physiological experience, her preoccupation with her "A-type" personality, and depressed identity began to decrease. It may be that her body became the tool through which she could access a greater psychological self-understanding, although not necessarily being aware of this phenomenon. As such, the practice of yoga as a BMS intervention uses the physical self as a symbolic tool for accessing greater psychological resources.

Throughout the three yoga classes Jenny exhibited a change in her overall ability to concentrate on present moment tasks. Her ability to concentrate on her physical experience enabled her to continue focusing, and reap greater benefits from the yoga practice. Not only did Jenny's concentration on her physical self-improve during the research, her psychological attention also shifted. During the final post-yoga interview Jenny no longer fixated on her "depressed and anxious personality." While she may not be aware of it, this phenomenon reflects a decrease in stigmatizing attitudes towards mental illness. She reduces her association with a psychiatric label, and since psychiatric labeling has been shown to increase stigma, she may be showing signs of decreased stigma [28].

5.2. Mind-Body Connectivity

From the first to the last session, the participant showed increased understanding of how the experience of physical stretching enables physical relaxation, and how focusing on the body enables psychological relaxation. She also progressively demonstrated less preoccupation from her depressed and anxious moods

with higher levels of motivation to take part in yoga practice and focus on the process. The gradual understanding of how the body and the mind are interconnected and the re-experiencing of positive emotional change via physical exercise is significant. These experiences can facilitate the participant to develop new understanding in mind – body connectivity. This new understanding signifies a new way of emotional learning that physical exercise, such as yoga, can positively impact mood. The research results to a certain extents confirms the notion that notion that cognition – emotion interrelation might not necessarily originate from only the cognitive change that influences change on emotion. As other forms of body-based therapies (e.g. arts therapy), the example of the impact of yoga practice on emotion and cognition supports the bottom-up approach that change of bodily state (e.g. physical relaxation) can impact emotion and subsequently cognition [29] [30].

5.3. Spirituality

While the participant did not explicitly discuss her experience with spirituality may suggest two possible explanations. First, spirituality is an abstract idea that individuals may not have the awareness to focus, explore and express about it. Second, the transition of the participant from not having any satisfaction from the yoga, to motivation to find satisfaction from yoga, to feeling satisfied from the yoga class, suggests that she demonstrated a progressively strengthening of connection on a personal level. The process and success in making meaning of life and the demonstration of personal satisfaction are significant exhibition of the facets of spirituality [19] [20]. The experience with yoga can potentially give the client the belief in her ability to find or build up new meaning in life.

5.4. Yoga Practice Research in a Cross-Cultural Setting

Many difficulties arose throughout the course of the research. For example, difficulties affecting the sample size, recruitment processes, protocol adherence and conducting the research in English (which is a second language for the participants). The language barriers may have impacted the influence of specific nuanced language queues and prompts in the yoga class. In further research it will be tantamount to have a third party to serve as a co-facilitator who can interpret cultural and contextual queues present in both languages.

Additionally, while yoga may help to buffer cross cultural differences by accessing the BMS paradigm, underlying conflicting beliefs about mental illness could have hindered the success of the project. In particular, it is important to note that differences between eastern and western conceptualization of mental illness are significant. It is then possible that there was a mutual challenge in interpreting what the researcher or participant truly meant when talking about depression or anxiety.

Despite these challenges, this research demonstrates a very important principle of conducting cross-cultural research on sensitive topics. It demonstrates the need for contextualization and mutual understanding amongst both parties.

6. Conclusions and Limitations

Despite the brevity of intervention, the BMS intervention in yoga practice demonstrated the effectiveness in helping the participant in at least two major ways. First, yoga practice helped Jenny to positively focus on body-mind-spirit wellbeing through constant practice of yoga. The results of the practice also encouraged her to differentiate from the identity of a mental illness patient and associate herself with the "normal" pool of people. Second, the required intense attention during yoga practice as an attention-promoting behavior or focusing practice could serve as a mechanism to help divert stigmatic attitudes toward mental illness. It is unclear what the mechanism is that explains her vocalized shifts in attention and rumination, however, according to attention constructs and previous research on yoga [31].

While this research cannot conclusively state that yoga serves to reduce mental illness stigma, it has uncovered some of the mechanisms through which body-mind-spirit practices have potential to promote holistic self-understanding and wellbeing. Yoga reallocates attention resources outside of psychological preoccupations and into the physical self, thereby increasing and diversifying self-conceptualizations. In so doing, a more holistic sense of self is created, which diverts stigmatic attitudes towards mental illness, and reduces the power a mental illness diagnosis has over an individual's sense of identity. By connecting with one's physiological resources, conceptualization of psychological resources can expand. It is, however, significant, in this case study that the relationship between the body and the mind in yoga clearly has an important role in facilitating attention resources that deems further investigation.

Since the power of this study is limited by the small sample size, generalization of results should be at the focus of future research. Future research could integrate qualitative and quantitative methods with a larger sample size. In so doing, a clearer portrait can be painted of the mechanisms underlying the various benefits of a yoga practice.

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Development of a Scale to Evaluate the Depressive State among Elderly Patients in General Wards

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Abstract

This study aims to develop a scale to evaluate depressive states among elderly patients in general wards, and verify the reliability and validity of the scale. Based on the results of interviews with nurses, we developed a draft of a scale comprised of 48 questions (NDE48). The Geriatric Depression Scale short version (GDS15), and the Zung Self-rating Depression Scale (SDS) were administered to 54 elderly patients. Two groups of nurses completed the NDE48 on different days. After performing an explanatory factor analysis, the NDE48 was simplified to a 16 question item scale (NDE16), comprising three factors. The correlation coefficient between GDS15 and NDE16 was 0.41 (p = 0.00191), and between SDS and NDE16 was 0.30 (p = 0.02633). Alpha coefficient of the total score of NDE16 was 0.88. For inter-rater reliability, the correlation coefficient was 0.57 (p = 0.00005). The findings suggest that the NDE16 will be highly useful when nurses evaluate depressive states among elderly inpatients.

Keywords

Depressive States, Elderly Patients, General Ward, Non-Self-Rating Scale, Nurses

1. Introduction

As the ratio of the aged population (26.7% in 2016) in Japan [1] has increased and the life expectancy also continues to lengthen, the ratio of elderly people receiving hospital treatment (2840 inpatients/100,000 elderly people, 10,637 outpatients/100,000 elderly people) is expected to become higher. With this background the Japanese government has promoted measures to shorten the length

of hospital stays to curb medical costs, and medical institutions have also aimed to shorten the length of stays by using critical path analysis [2] to improve care efficiency and quality. However, compared to that of Australia (4.7 days) and Italy (6.8 days), the 17.2 days in Japan is long (OECD) [3]. This suggests that there are more elderly inpatients in general in Japan than in other countries. In Japan, the term "general wards" excludes wards for psychiatric medicine, infectious diseases, tuberculosis, and recuperation in clinics or hospitals.

Further, the incidence of depressive disorders among elderly patients in general wards amounted 22% to 33% of those admitted, a higher incidence than in the general community where the incidence is 5% to 15% [4]. This could suggest that the elderly experience depressive states triggered by the hospital admission, or it could offer an opportunity to determine depressive states among elderly inpatients. However, there is a risk to overlook the changes in the state of mind of elderly inpatients because attention to inpatients is primarily paid to improving the main complaint that led to the hospital admission. To verify this assumption, we first reviewed literature related to depression among the elderly related to nursing sciences in Japan, and determined that it is necessary to understand the actual conditions of the depressive states and depression, and improve nursing intervention for early detection and prevention, as well as to advance research into depressive states targeting elderly inpatients, due to the high incidence of depressive disorders [5]. Therefore, it is of significant importance to screen for early stage depressive states among elderly inpatients in Japan.

The primary feature of depressive states among the elderly is that they show many somatic symptoms (indefinite, no certain diagnosis possible complaints) [6] as well as practice thought suppression and inhibition [6], and depression among the elderly seem to be accompanied by complaints of prolonged poor health, hypochondriac symptoms, anxiety, feelings of frustration, and delusions [7]. In this way, the elderly show a wider range of conditions than those of adolescents or middle aged patients [8], and we consider that this difference makes it difficult to identify early stage depressive states among the elderly, and that it is necessary to identify factors related to depression among the elderly for early detection. Items extracted as factors related to depressive states among the elderly include physical factors that include physical states and illnesses [9]-[14], psychological factors [15] [16], and social factors [17] from studies conducted by researchers in Japan and other countries.

The Geriatric Depression Scale short version (GDS15) [18] and the Zung Self-rating Depression Scale (SDS) [19] are known as self-administered scales to measure the depressive state among the elderly. Nakane *et al.* studied knowledge and understanding of (attitudes towards) psychiatric disorders among the general population of Japan and Australia, and reported that the Japanese had more negative attitudes towards patients suffering from depression [20]. This suggests that Japanese have more negative impressions of depression. For this reason, administering a self-rated depression scale to elderly patients at hospital admission may impose a psychological burden on these patients. Therefore, it would

be preferable to have a scale that can be completed by attending nurses, to decrease the psychological burden on patients when depressive states are evaluated. The Checklist for Post Stroke Depression (CPSD) for stroke patients [21], the Delirium, Depression, Dementia Screening Tool (3DST) for elderly patients under palliative care [22], and the Nursing homes short depression inventory (NH-SDI) for elderly residents at nursing homes [23] are among scales that are completed by attending nurses. As described above, the incidence of depressive disorders among elderly patients in general wards is high, and there is a need to develop a scale exclusively for such elderly patients. However, our extensive research review found no previous studies related to such scales. Therefore, we believe it would be valuable to develop a scale to evaluate depressive states among elderly inpatients without disturbing the main object (illness) of the hospitalization of elderly patients and that the scale should minimize the burden on these patients.

Observation of hospital inpatients by nurses is also one way that would make it possible to detect depressive states among elderly inpatients, other than by using a set scale. Because nurses spend more time with patients than other health professionals attending patients, attending nurses may be able to evaluate depressive states as they develop over time, and not just at a single point in time, as nurses actually do with the CPSD [21], the 3DST [22], or the NH-SDI [23] described above. Benner classified the length of nursing experience into five stages, from novice to expert, and has reported that novice nurses regard everything as important information, but as their experience becomes more extensive, they will become better able to see situations as a complete whole [24]. This points to the situation that nurse assessment abilities vary with the length of nursing experience, and that as a result it is necessary to establish standard criteria to ensure that also novice nurses can provide a valid assessment of the state investigated. In this study we aim to develop a scale which nurses will be able to apply without complications in evaluating depressive states among elderly patients in general wards both in and outside Japan. It is expected that such a scale will facilitate an early detection of underlying depressive states among elderly inpatients, lead to opportunities for inpatients to receive appropriate treatment from physicians, and contribute to improvements in the quality of life (QOL) of those where depression is identified, including assisting in the prevention of suicides. Further, we believe that carrying out this study is meaningful because the findings will also contribute to achieving recovery from the main reasons for the hospitalization of elderly patients, as well as that this will contribute to decreases in medical outlays.

2. Objectives

The objectives of this study are to develop a scale to screen the depressive state among elderly patients in general wards.

3. Definition of Terms

As previously described, depressive states among the elderly are accompanied by

thought suppression and inhibition [6]. For this reason, Takaoka *et al.* [5] estimated that depressive states entail a high risk to pose obstacles in daily life activities. Therefore, we defined the term depressive state in this study The term depressive state in this study is defined as the level of depression where persons are depressed for a specific reason and are unable to cope with this by themselves, and which poses obstacles in daily life activities, including loss of appetite and insomnia, resulting in the need for nursing intervention. This is because the purpose of the scale is to measure the depressive state rather than to diagnose, and as we emphasize the importance of performing the measuring from the viewpoint of the attending nurses.

4. Methods

4.1. Creation of a Draft Scale to Evaluate the Depressive State among Elderly Patients in General Wards

4.1.1. Development of the Question Items

As this study emphasizes the importance of measuring the depressive states from the viewpoint of attending nurses, we decided to determine question items based on the daily observations by nurses. A semi-structured interview as one "criterion for nurse based evaluations of depressive states among elderly patients" was conducted in August, 2014. The interview was based on cases of nursing interventions that were conducted when elderly inpatients became depressed, and cases arising from follow-up observation. All the interviewees were female between 30 and 60 years of age. The nurse licenses held by 20 of the interviewees were obtained at vocational nursing schools. The mean length of experience as a nurse was 19.9 ± 7.8 years, the duration of working in the present ward 5.0 ± 3.4 years, and that of working in general wards 14.5 ± 7.8 years. The mean length of these interviews was 22.2 ± 5.7 minutes. The interviewees were 22 nurses with three years or longer clinical experience in general wards, who had been introduced to the researchers by the hospitals participating in this study. We studied the data obtained in the interviews, distinguished the information into codes with similar characteristics, and assigned names to represent the characteristics of the matter expressed by a code. We repeated this procedure and were able to categorize the codes into integrated groups; this finally yielded eleven categories detailed in 101 tertiary level codes (final codes) for use as query items.

With this procedure, it became clear that nurses evaluate depressive states among elderly inpatients based on the following eleven aspects (categories): #1 <<conditions requiring nursing intervention>>, #2 <<conditions with risks of committing suicide>>, #3 <<conditions showing lack of sufficient nutrition>>, #4 <<conditions showing lack of adequate rest>>, #5 <<conditions where physical functions are impaired>>, #6 <<conditions where the future livelihood cannot be imagined>>, #7 <<conditions motivating continued treatment not assured>>, #8 <<conditions involving negative feelings>>, #9 <<conditions specific to depressive characteristics in the elderly>>, #10 <<conditions due to the characteristics of being elderly>>, and #11 <<conditions due to hospitaliza-

tion>>. Using the tertiary level codes that are components of the categories, specific question items were developed. Further, we simplified the expressions in the wordings to enable a determination regardless of the length of the nurse working experience. From the 101 codes, we extracted 48 codes based on the following exclusion criteria: "(1) Opposite results were identified", "(2) Corresponds to all elderly", "(3) Number of segments extracted from the interviews was five or fewer", "(4) Seems difficult to evaluate", "(5) Always performed for inpatients" and "Demographic information".

4.1.2. Creation of the Scale

To create a scale that is simple to answer, we employed a "Yes, No, or Unknown" style to the answers for each question, and a higher number of "Yes" answers suggests a higher probability of the presence of a depressive state.

4.1.3. Evaluation of Content Validity

The validity of the questions in terms of the relevance and simplicity and of the ability of the criteria to identify depressive states among the elderly was evaluated by three tests: with "comments from an expert panel consisting of a psychiatrist and gerontological nurses", with "a preliminary test conducted by two novice nurses and five nurses randomly selected from among the nurses participated in the semi-structured interview", and with "comparisons with previous studies related to depressive states among the elderly". Incorporating the modifications suggested by this validity check in the question wordings, the draft of the scale comprising 48 questions was complete.

4.2. Evaluation of the Reliability and Validity of the Scale for Nurses to Evaluate Depressive States among Elderly Patients in General Wards

4.2.1. Instrument

As the instrument, we used the final draft scale to evaluate depressive states among elderly patients in general wards comprised of 48 questions created in this study. The draft scale is termed the Nurse Administered Depression Scale for Elderly Inpatients (NDE48), and Table 1 shows the question items.

4.2.2. Research Period

Data were collected from February to December, 2015.

4.2.3. Participants

Participants surveyed were 65 year or older inpatients in general wards of the participating hospitals. Inclusion criteria were patients hospitalized for 2 to 7 days after the admission who were not diagnosed with dementia or depression and who consented to participate in the study. The nurses who were asked to complete a scale developed in this study were licensed nurses in charge of the ward where participants were hospitalized (attending nurses).

4.2.4. Data Collection

A researcher conducted the interviews with the participants using the Japanese

Table 1. Questions in the scale to evaluate depressive states among elderly inpatients.

No	Question
1	Showing somatic symptoms
2	Displaying worthlessness feeling
3	Need for assistance to alleviate pain
4	Displaying physical strength weakening due to for being in bad condition or decrease in exercises
5	Appears dispirited
6	Need some assistance in daily activities
7	Presenting obstacles in daily life
8	Daily activities are limited due to treatment
9	It is difficult for patient to try to avoid risks such as falls by him/herself. (added "such as falls")
10	Need to encourage patient to do something
11	Stopped doing what he/she was able to
12	Unable to accept the present situation where activity is limited due to treatment or obstacles to daily life
13	Need to make special arrangements for food types and/or eating style to increase the ingested volume of food
14	Patient is sometimes reluctant to eat or cannot eat even when encouraged.
15	Patient is sometimes reluctant to drink water or not drinking even when encouraged.
16	Complaining of being unable to sleep
17	Showing negative attitudes toward encouragements
18	Need to have a talk as a nursing aid
19	Need encouragement to interact with others
20	Reducing interactions with others
21	Rejecting interactions with others
22	Patient complains ("anxiety, dissatisfaction, and unspecified reasons" added).
23	Patient makes many complaints ("frequent nurse calls, overly talkative, etc." added).
24	Need to identify the cause of depressed feeling
25	Unable to solve problems unassisted when depressed
26	Unstable in mood
27	Unable to switch moods unassisted
28	Being short-tempered and/or showing unstable feelings
29	Feeling irritated and/or restless
30	Showing feelings of desperation
31	Showing low self-esteem behaviors
32	Pessimistic
33	Expressionless
34	Need to maintain motivation
35	Decreasing motivation
36	Lack of comprehension

Continued

37	Unable to think about something
38	Showing suspicious attitude toward others
39	There are cases where patient does not appear to understand explanations.
40	Convinced of being unable to do something as wished
41	Involuntary
42	Patients are unable to express their feelings.
43	Muttering "want to die"
44	Having attempted suicide
45	Need assurance to feel secure and reduce anxiety or pain
46	Health condition has not been improved as he/she wished.
47	This elderly inpatient needs to think about future livelihood or way of life.
48	I am worried about how to intervene to solve problems.

versions of the GDS15 and SDS. The reliability and validity of the GDS15 for Japanese elderly has been established by Yatomi [25], and that of the SDS by Niino [26]. To obtain uniform data without missing information, one researcher collected all the data of the interviews. On the day when the GDS15 and SDS were administered, the attending nurses were asked to fill in the NDE48 after completion of the day shift, here focusing on what they had observed that day. Next, between the following and the fifth day, different attending nurses of these participants were asked to fill in the NDE48. The elderly inpatients whose data were obtained from all of the GDS15, SDS, and NDE48 by the two different nurse groups were included as participants for the further analysis.

4.2.5. Data Analysis

Data were analyzed using the statistical analysis software R, ver 3.2.3.

(1) Validity

We determined the construct validity and criterion-related validity. The construct validity was examined with an oblique rotation (oblimin) of explanatory factor analysis, determining the factor loading, commonality, accumulated proportion, and factor correlation coefficient to confirm the factor structure of the NDE48. Oblique rotation was employed as it was assumed that there would be relations among the factors of the NDE48. The number of factors was confirmed using parallel analysis. For factor loadings of 0.40 or better, we determined this item as belonging to a factor [27], and employed the number of factors where the accumulated proportion was over 50% [28]. Further, we excluded similar question items based on hierarchical and non-hierarchical cluster analyses. For the criterion-related validity, we examined the correlation coefficients of each of the total scores of the GDS15, SDS, and NDE48, and coefficients between 1.00 and 0.70 were considered as strongly correlated, between 0.70 and 0.40 as considerably correlated, and between 0.40 and 0.20 as slightly correlated [29].

(2) Reliability

For the reliability, we determined the internal consistency and inter-rater re-

liability. For internal consistency, we looked at Cronbach's alpha coefficient of all question items and each factor as Powers & Knapp (2011) have reported that: "the most common procedure for determining the internal consistency of a measuring instrument is Cronbach's alpha (p.90) [30]." The cutoff Cronbach's alpha coefficient level was set at 0.70 or higher [31], and inter-rater reliability was examined based on the correlation coefficient of the total score of NDE48 of each of the attending nurses. Standards for the correlation were the same as for the criterion-related validity.

(3) Ethical considerations

Inclusion of a hospital was made after the researcher had visited the hospital (all were hospitals with general wards in urban areas in Hokkaido) and had explained the study objectives and methods to the nursing directors in person. Hospitals that submitted a consent form after having obtained approval from their institutional review board were included as participating hospitals. After inclusion in the study the researcher explained the details of the study including the absence of any enforcement to participate, anonymity issues, and the confidentiality of the data to the elderly inpatients and attending nurses in writing, and obtained the consent to participate orally and in writing. Study data were kept in a secure locked location. Data input for the analysis were stored in a USB flash memory protected with a password. At the end of the study, all data to be destroyed after the research results have been published. It was decided that the data would be handled anonymously with unique codes by only the researchers, and when results of this study are presented at academic meetings or published in scientific journals, expressions that may identify participants and hospitals would not be used. The authors declare that they have no conflicts of interest. The protocol for the study was approved by the ethics committee of the university the authors belong to (No. 2014-098).

5. Results

5.1. Demographic Characteristics of Study Participants and Attending Nurses

Table 2 shows the demographic characteristics of the study participants and the attending nurses of the participants.

5.1.1. Elderly Inpatients

Thirty-two hospitals were invited to participate in the study, and of these seven hospitals agreed to cooperate, and introduced 58 elderly inpatients. Excluding four patients who did not express consent (n = 2) or whose data were not collected following the procedures detailed here (n = 2); 54 patients (93.1%) were included as participants of the study (35 female, 64.8%; 19 male, 35.2%). The mean age was 81.3 years old (SD, 7.56). None of the participants had a history of dementia or depression, one had unidentified complaints (1.9%), and one suffered from dehydration (1.9%). Twenty-five participants (46.3%) had experienced losing a spouse, 28 (51.9%) had no such experience, and for one this

Table 2. Details of the participating elderly inpatients and attending nurses.

Item		Number	%
Elderly inpatients		n = 54	
Age	81.3 ± 7.51 years		
Sex	Female	35	64.8
	Male	19	35.2
Dementia	No	54	100.0
	Yes	0	0.0
Depression	No	54	100.0
	Yes	0	0.0
Unidentified complaints	No	53	98.1
	Yes	1	1.9
Dehydration	No	53	98.1
	Yes	1	1.9
Loss of spouse	No	28	51.9
	Yes	25	46.3
Diseases	Diseases of the musculoskeletal system and connective tissue	15	27.8
	Injury, poisoning, and certain other consequences of external causes	14	25.9
	Diseases of the respiratory system	6	11.1
	Diseases of the circulatory system	5	9.3
	Diseases of the genitourinary system	4	7.4
	Neoplasms	3	5.6
	Diseases of the nervous system	2	3.7
	Endocrine, nutritional, and metabolic diseases	2	3.7
	Diseases of the digestive system	1	1.9
	Certain infectious and parasitic diseases	1	1.9
	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	1	1.9
Attending nurses		n = 59	
Sex	Female	58	98.3
	Male	1	1.7
Length of nursing experience	12.6 ± 8.65 years		
Education to obtain nurse license	Vocational schools	52	88.1
	Junior colleges	3	5.1
	Universities	4	6.8
Age	20 s	12	20.3
	30 s	25	42.4
	40 s	14	23.7
	50 s	8	13.6
Assigned ward	Rehabilitation at recovery	6	10.2
	Internal medicine	11	18.6
	Cardiovascular internal medicine	5	8.5
	Digestive surgery	14	23.7
	Orthopedic/internal medicine	21	35.6
	Internal medicine/surgery	2	3.4

item is unknown (1.9%). For the distribution of main complaints that led to the hospital admission according to the International Statistical Classification of Diseases and Related Health Problems (ICD-10, 2013) [32], 15 (27.8%) were classified as diagnosed with diseases of the musculoskeletal system, and connective tissue, and 14 (25.9%) with injury, poisoning, and other consequences of external causes. The mean score of the GDS15 was 5.77 (SD: 3.80), and 28 participants (51.8%) scored 6 or higher, the cutoff point [33]. The mean score of the SDS was 40.83 (SD: 8.66), and 29 participants scored 40 or higher, which is classified as a higher than normal score [34].

5.1.2. Attending Nurses

The number of attending nurses was 59 (58 female, 98.3%; 1 male, 1.7%). The mean length of experience as a nurse was 12.58 years (SD: 8.65). The nurse licenses held by 52 (88.1%) of the participants were obtained at vocational nursing schools, by 3 (5.1%) at junior colleges, and 4 (6.8%) at universities.

5.1.3. Data Collection from Attending Nurses

The mean duration from admission to the first data collection from the attending nurses was 4.11 days (SD: 1.32), and that between the first and the second data collection was 1.24 days (SD: 0.77). The time required to complete NDE48 was 5.24 minutes (SD: 2.99) per patient.

5.2. Validity

5.2.1. Construct Validity

To determine the construct validity, we assigned 1 point to "Yes" responses, -1 point to "No", and 0 to "Unknown" responses, with the result that a higher total score implies a higher risk of a depressive state. Preliminarily assuming that there are three factors, we performed an oblique rotation (oblimin) for explanatory factor analysis and cluster analyses (hierarchical and non-hierarchical methods) with the N-GED48 scale. An Ansari-Bradley test with a nonparametric method for dispersion yielded $p = 0.637$, showing no significant difference in dispersion, and we performed a factor analysis. Based on the assumed three factor classification, 25 of the 48 question items that appeared to measure similar conditions (eight items with low factor loadings and 17 items with factor loadings below 0.40) were excluded. For the remaining 23 items using parallel analysis, four factors were identified. Performing a factor analysis with these four factors, a further three items with factor loadings below 0.40 were excluded. From a factor analysis with the remaining 19 items, further two items with factor loadings below 0.40 were excluded. Examining the remaining 17 items using a parallel analysis, three factors were identified. This process was repeated, and one factor was found to have a factor loading below 0.40 and this was also excluded. Further, we performed a parallel analysis of the remaining 16 question items, and identified three factors. **Table 3** shows the results of an oblique rotation (oblimin) of the explanatory factor analysis of the three factors of the remaining 16 items. As there were no items with factor loadings below 0.40 among these, and

Table 3. Results of the factor analysis of the depressive state scale for elderly inpatients and Cronbach's α coefficients.

	Question items (Total $\alpha = 0.88$)	MR1	MR3	MR2	h2
MR1: a state with difficulty in suppressing emotion ($\alpha = 0.91$)					
28	Being short-tempered and/or showing unstable feeling	0.99			0.96
26	Unstable in mood	0.95			0.89
48	I am worried about how to intervene to solve problems.	0.77		0.27	0.71
29	Feeling irritated and/or restless	0.75		0.27	0.74
30	Showing feelings of desperation	0.74			0.53
16	Complaining of being unable to sleep	0.65	0.10		0.47
32	Pessimistic	0.46		0.34	0.38
MR3: expressing thought suppression ($\alpha = 0.85$)					
33	Expressionless		0.86		0.75
20	Reducing interactions with others	−0.16	0.78		0.57
39	There are cases where patient does not appear to understand explanations.		0.71	0.269	0.61
27	Unable to switch moods unassisted	0.36	0.61		0.63
5	Appears dispirited	0.16	0.61	−0.11	0.46
36	Lack of comprehension		0.59	0.20	0.42
MR2: expressing a state of lack of control ($\alpha = 0.70$)					
17	Showing negative attitudes toward encouragements			0.97	0.93
11	Stopped doing what he/she was able to	0.52		0.56	0.65
40	Convinced of being unable to do something as wished		0.43	0.55	0.53
Factor correlation					
		MR1	MR3	MR2	
	MR1	1			
	MR3	0.27	1		
	MR2	0.10	0.09	1	
	Cumulative Var		0.62		

MR1: a state with difficulty in suppressing emotion ($\alpha = 0.91$), MR2: expressing a state of lack of control ($\alpha = 0.70$), MR3: expressing thought suppression ($\alpha = 0.85$).

the accumulated proportion was 62.0%, it was decided that convergence had been reached. Finally, we determined to use these three factors and 16 question items and termed this the NDE16.The three factors were given the names "MR1: a state with difficulty in suppressing emotion", "MR2: expressing a state of lack of control", and "MR3: expressing thought suppression". The MR1 was comprised of question numbers, 16, 26, 28, 29, 30, 32 and 48; MR2 of 11, 17 and 40; and MR3 of 5, 20, 27, 33, 36 and 39. The correlation of these factors was from 0.09 to 0.27.

5.2.2. Criterion-Related Validity

As a histogram showed no normal distribution of the total score of NDE16, we used the Spearman rank correlation to calculate correlation coefficients. The

correlation coefficient (Spearman) between GDS15 and NDE16 was 0.41 (p = 0.00191), and between SDS and NDE16 was 0.30 (p = 0.02633).

5.2.3. Reliability

(1) Internal consistency

Table 3 shows Cronbach's α coefficients. Cronbach's α coefficient of the total score of NDE16 was 0.88, and those of each factor were 0.91 (MR1), 0.70 (MR2), and 0.85 (MR3).

(2) Inter-rater reliability

The correlation coefficient (Spearman) between the data of the NDE16 collected from two different nurse groups was 0.57 (p= 0.00005).

6. Discussion

In this study we developed a scale for nurses to screen for the depressive state among elderly patients in general wards, and examined the reliability and validity of the scale statistically.

6.1. Validity

6.1.1. Construct Validity

Grove and Burns state that "Examination of construct validity determines whether the instrument actually measures the theoretical construct it purports measure (p. 217) [35]." Since the results of the explanatory factor analysis show that factor loadings were 0.40 or higher, and the accumulated proportion was 62.0%, we determined that the validity of the NDE16 was verified. Further, as the correlation coefficients of the three factors were between 0.09 and 0.27, little or no correlation among the three, the three factors are assumed to be independent or with very limited correlation.

For the symptoms characteristic to depressive states among the elderly, Igarashi reported that anxiety and feelings of frustration appear more strongly than feelings of depression if the person shows many somatic symptoms (indefinite complaints in particular) [36]. Put differently, depressive states among the elderly are unique in that they appear together with somatic symptoms, anxiety, and feelings of frustration. Question items included in the MR1 Factor of NDE16 include "28. Being short-tempered and/or showing unstable feelings", and "29. Feeling irritated and/or restless" from the initially developed draft scale (Table 1). These suggest depressive states among the elderly. Igarashi also noted general depressive states as states with mainly depressed feelings, thought suppressions and inhibition [36]. Factors, "MR2: expressing a state of lack of control" and "MR3: expressing thought suppression", in the final scale are typical symptoms of depressive states, and they represent thought suppression and inhibition.

The term depressive state in this study is defined as the level of depression where persons are depressed for a specific reason and are unable to cope with this by themselves, and which poses obstacles in daily life activities, including loss of appetite and insomnia, resulting in the need for nursing intervention. In

other words, in this scale, three elements become emphasized, "being depressed", being "unable to cope with this by themselves" and being "in need of nursing intervention". As described above, we have determined that questions related to the MR1 Factor show characteristics of depressive states among the elderly, while those for the MR2 and MR3 Factors show the state of "being depressed" clearly because the characteristics of depressive states are shown in all developmental stages. These three factors all show that depressive states are equal in that they point to states that make these elderly "unable to cope with this by themselves" and "in need for nursing intervention", and therefore, we strongly feel that the scale developed in this study will actually measure depressive states in elderly inpatients.

6.1.2. Criterion-Related Validity

Powers and Knapp stated that "Criterion–related validity refers to the situation where the measures obtained are compared with some external criterion that has itself already been judged to be valid (a 'gold standard') (p. 197)" [30]. In the NDE16, the evaluating standards were examined by using GDS15 and SDS, of which the reliability and validity have been established. As a result, NDE16 is "fairly well correlated" with GDS15, and "slightly correlated" with SDS. This illustrates NDE16 is a scale more similar to GDS15 than SDS. Further, we have determined that NDE16 can measure depressive states because the correlation with GDS15 has been established. This strongly substantiates that the study aim to screen for depressive states among elderly inpatients has been achieved. Depressive states are also thought to be states where it takes a while from the time a person feels the symptoms of depression to the time others become able to observe the symptoms. The GDS15 and SDS are self-administered scales, but the scale developed here is based on observations by others. This difference may be the reason why there was no "strong correlation" between NDE16 and the other two scales.

6.2. Reliability

6.2.1. Internal Consistency

Powers and Knapp stated that "Internal consistency is a property of the reliability of a measuring instrument, and is concerned with the extent to which the parts of an instrument' hang together (p. 90)" [30]. Cronbach's α coefficient of the total score of NDE16 was 0.88, and those of each factor were from 0.70 to 0.91 (MR1). As all the values were 0.70 or higher, we are confident to have determined the reliability of the question items and that each of the factors are supported as internally consist.

6.2.2. Inter-Rater Reliability

For inter-rater reliability, Polit and Beck (2012) states that it is "measurements by two or more observers or raters using the same instrument (repetition over persons) (p. 303) [37]." In the study here, the correlation coefficient (Spearman) of the total score of NDE16 obtained from different attending nurses was 0.57 (p

= 0.00005), showing them to be "fairly well correlated", we have determined that the inter-rater reliability of the 16 question items is well supported.

6.3. Usefulness of the Scale

The scale developed here is unique in that it is completed by attending nurses, simple to fill out, and focuses specifically on depressive states among elderly inpatients. This scale is designed to enable nurses to identify early stage depressive states, as well as to contribute objective basic data to assist in interventions and medical examinations by physicians, rather than for the purpose of making a confirmed diagnosis. This scale can be used as an effective tool in countries and situations where there is a lack of knowledge of depression or where there are negative attitudes towards depression like in Japan as it is not necessarily completed by specialists who are knowledgeable of depression.

As the average time required to complete NDE48 was 5.24 minutes (SD: 2.99) for one patient, and because the total number of questions is only 16, the scale is relatively easy to use. Further, because the simplified expressions in the wordings will enable a reliable determination regardless of the length of working experience of the nurses (or others) administering the scale, the scale does not impose any particular psychological burden on patients when the depressive states are evaluated. Nurses can use this scale easily and without collecting additional specific information.

It is reported that the incidence of depressive disorders among the elderly is high and there are often cases where no one notices the physical and mental changes experienced by the elderly [38]. Therefore, it is significant to have developed a scale exclusively for screening depressive states among elderly people. We think that the scale has the potential for use by a wide range of people including care givers and family members who are daily around the elderly. This is because the question items in NDE16 excluding number "48. I am worried about how to intervene to solve problems" were developed based on daily observations, and including number "16. Complaining of being unable to sleep".

6.4. Limitations of the Present Study and Issues to be Addressed in Future Studies

Limitations of the present study and issues to be addressed in future studies may be listed as follows:

- We feel assured that both the reliability and validity of the scale have been adequately established based on the statistical evidence obtained in this study. However, the number of participants (n = 54) is insufficient for 48 question items. This suggests a low stability for the method. Therefore, it is necessary to increase the number of participants to be able to effect improvements in the stability. Therefore, it is necessary to include more participants and examine the reliability and validity to ensure the stability of the NDE16 in the future studies.
- Taking account of the small number of questions (7 for MR1, 3 for MR2, and

6 for MR3), we will work to improve the accuracy particularly paying attention to the balance among the three factors identified here.

- No participants with dementia were included in this study. However, in future studies the effectiveness of the scale in evaluating depressive states among elderly with dementia will be examined, as Byers and Yaffe (2011) state that "depressive symptoms often occur among patients with dementia" (P.324) [39].

7. Conclusion

This study set out to develop a scale for nurses to use to evaluate depressive states among elderly patients, and three factors represented by 16 question items were identified and presently comprise the scale. The three factors were named as "MR1: a state with difficulty in suppressing emotion", "MR2: expressing a state of lack of control", and "MR3: expressing thought suppression" to describe the areas highlighted by the three factors. The questions of the final scale that appear among the initially identified 48 questions in the draft scale were the following: MR1 comprised question numbers, 16, 26, 28, 29, 30, 32, and 48; MR2, 11, 17, and 40; and MR3, 5, 20, 27, 33, 36, and 39. Overall and taken together, the findings reported here suggest that the scale developed in this study is of potentially great use when nurses evaluate depressive states among elderly patients.

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