

Abstracts
Nursing

INVESTIGATION OF CRITERIA FOR OBESITY BASED ON INSULIN RESISTANCE IN JAPANESE COLLEGE ATHLETES

K. Aoishi, H. Sakakibara

Department of Nursing, Nagoya University Graduate School of Medicine

Introduction

Obesity is a morbid condition characterized by glucose intolerance, impaired lipid metabolism, and high blood pressure because of the accumulation of visceral fat or adipocyte abnormalities^[1]. In Japan, obesity is defined as a BMI of ≥ 25.0 kg/m²^[2]. Waist circumference (WC) is also included in the criteria for metabolic syndrome, and is ≥ 85 cm for Japanese men^[3].

However, criteria for obesity in athletes are widely debated. Athletes with a high BMI may be healthy and not obese because they follow healthy lifestyles with regular physical activity. Meanwhile, in other studies that examined blood biochemistry in addition to BMI and body fat, obesity in athletes was associated with a high incidence of metabolic syndrome and cardiovascular disease^[4-6]. But there is no published research that has included blood biochemical parameters that can indicate the presence of insulin resistance or glucose intolerance for young athletes.

Therefore, in this study, we investigated possible criteria for obesity in Japanese college student athletes by examining insulin resistance in athletes and non-athletes.

Methods

Design and sample: The present subjects were approximately 600 male students of the fourth grader from the first grader of a university in Aichi prefecture, Japan, to whom the purpose of this study was explained. Of these, 219 volunteered to participate in the study, including 119 athletes belonging to a sports team (mean age 20.3 ± 1.2 years) and 100 who did not (non-athletes, mean age 20.5 ± 1.3 years).

Measurements: The subjects were examined at an annual health examination performed at the university. Information collected for each student included height, body weight, WC, blood glucose, HbA1c, insulin, personal and family health history, and nature and duration of physical activities on varsity and non-varsity sports teams. BMI was calculated as body weight (kg)/height (m)². Homeostasis model assessment of insulin resistance (HOMA-IR) was calculated as fasting blood glucose level (mg/dl) \times fasting blood insulin level (μ U/ml)/405.

Data analysis: BMI was classified into four groups in this study: <25.0 , ≥ 25.0 to <27.0 , ≥ 27.0 to <30.0 and ≥ 30.0 kg/m². WC was classified into four groups in this study: <85 , ≥ 85 to <90 and ≥ 90 cm.

Data are presented as mean and standard deviation. Body composition and blood chemistry data were assessed using Student's *t* test with BMI <25.0 kg/m² or WC <85 cm as a control, followed by Bonferroni correction for comparisons reaching statistical significance. The percentage of subjects with abnormal values was compared using χ^2 analysis. For all tests, the level of statistical significance was <0.05 .

Results

Blood biochemistry data, including glucose profiles, according to each BMI group are shown in Table 1. Among non-athletes, the insulin level was significantly higher among the BMI ≥ 25.0 to <27.0 kg/m² group ($p < 0.01$) and the BMI ≥ 30.0 kg/m² group ($p < 0.01$) and non-significantly higher in the BMI ≥ 27.0 to <30.0 kg/m² group compared with the BMI <25 kg/m² group. Similarly, HOMA-IR was significantly higher in BMI ≥ 25.0 to

<27.0 kg/m² group ($p < 0.05$) and the BMI ≥ 30.0 kg/m² group ($p < 0.05$).

Among the athletes, the insulin level tended to be higher in the BMI ≥ 27.0 to <30.0 kg/m² group ($p < 0.10$) compared with the BMI <25 kg/m² group and HOMA-IR was significantly higher in the BMI ≥ 27.0 to <30.0 kg/m² group ($p < 0.05$). Fasting insulin and HOMA-IR were greater, although not significantly, in the BMI ≥ 30.0 kg/m² group than in the BMI <25 kg/m² group.

The percentages of subjects with abnormal values are also shown in Table 1. The prevalence of HOMA-IR ≥ 2.5 increased with increasing BMI and tended to be greater among non-athletes group than among athletes. About half (46%) of the non-athletes and 33% of athletes with BMI ≥ 30.0 kg/m² had HOMA-IR ≥ 2.5 .

As shown in Table 2, neither fasting blood glucose nor HbA1c increased with increasing WC. By contrast, fasting insulin was significantly higher in subjects with WC ≥ 90 cm comparison with subjects with WC <85 cm in athletes ($p < 0.01$) and non-athletes ($p < 0.001$). HOMA-IR was also significantly higher in subjects with WC ≥ 90 cm in both groups ($p < 0.01$). Among non-athletes, HOMA-IR value was also higher in subjects with WC of ≥ 85 to <90 cm ($p < 0.05$).

Abnormal fasting insulin and HOMA-IR values were seen in athletes with WC ≥ 90 cm. By contrast, among non-athletes, abnormal insulin and HOMA-IR values were found in subjects with WC of ≥ 85 to <90 cm and in those with WC <85 cm. Elevated HOMA-IR was seen in 31% of non-athletes and 26% of athletes with WC ≥ 90 cm.

Discussion

In the present study, none of the college student subjects was suspected of having diabetes mellitus based on fasting blood glucose and HbA1c, but elevated HOMA-IR (≥ 2.5) corresponding to insulin resistance was seen in about 7% of the subjects. Most of the non-athletes with elevated HOMA-IR had BMI ≥ 25.0 kg/m² and WC ≥ 85 cm, and almost all of the athletes with elevated HOMA-IR had BMI ≥ 27.0 kg/m² and WC ≥ 90 cm. These findings in Japanese college students indicate that athletes are at risk for insulin resistance when BMI exceeds 27.0 kg/m² and WC exceeds 90 cm, or that obese athletes may have impaired glucose tolerance. For non-athletic students, their risk of insulin resistance is greater at BMI ≥ 25.0 kg/m² and WC ≥ 85 cm.

In the present study, athletes were more insulin sensitive than non-athletes at the same BMI and WC, which could reflect the effects of regular physical activity on insulin resistance. However, when BMI exceeds 27.0 kg/m² and WC exceeds 90 cm, athletes are more likely to be at risk of insulin resistance.

Another study has suggested BMI ≥ 27.9 kg/m² for athletes (≥ 34.1 kg/m² for American football players) and ≥ 26.5 kg/m² for non-athletes^[7]. Their proposal was based on the optimum BMI in terms of body fat in US individuals. The present criteria for Japanese college athletes were based on HOMA-IR or insulin resistance. Considering the criteria in our study, the sensitivity and specificity were calculated to be nearly 100% (or, more precisely, 80%) and 93.0% for athletes, and 90% and 70% for non-athletes, respectively.

Because the present study population was young and

healthy, the number of subjects with insulin resistance was insufficient to establish criteria for obesity based on BMI and WC. Further studies are needed by examining a larger number of subjects.

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Author address

E-mail: keiko_ao@xa2.so-net.ne.jp

Table 1. Blood biochemical parameters and percentage of subjects with abnormal values according to categories of BMI

BMI (kg/m ²)		< 25.0	≥ 25.0 to < 27.0	≥ 27.0 to < 30.0	≥ 30.0
Athletes/non-athletes (n)		71/61	24/19	18/7	6/13
Fasting blood glucose (mg/dl)	Athletes	88.4 ± 6.0	85.3 ± 7.2	89.1 ± 6.5	86.0 ± 4.1
	Non-athletes	90.1 ± 6.8	86.5 ± 7.7	85.4 ± 6.6	90.1 ± 6.8
HbA1c (%)	Athletes	5.3 ± 0.3	5.3 ± 0.3	5.2 ± 0.2	5.2 ± 0.2
	Non-athletes	5.3 ± 0.3	5.2 ± 0.3	5.5 ± 0.3	5.4 ± 0.4
Fasting insulin (μU/ml)	Athletes	3.7 ± 1.5	4.7 ± 3.2	6.4 ± 4.1 [†]	7.7 ± 3.9
	Non-athletes	4.3 ± 2.1	6.3 ± 3.2**	8.2 ± 3.7 [†]	11.2 ± 6.6**
HOMA-IR	Athletes	0.8 ± 0.3	1.0 ± 0.7	1.4 ± 0.9*	1.7 ± 0.9
	Non-athletes	1.0 ± 0.5	1.4 ± 0.7*	1.8 ± 0.9	2.5 ± 1.6*
Fasting blood glucose ≥ 110 mg/dl	Athletes	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Non-athletes	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
HbA1c ≥ 5.9%	Athletes	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Non-athletes	1 (1.6)	0 (0.0)	1 (14.3)	2 (15.4)
Fasting insulin ≥ 15.0 μU/ml	Athletes	0 (0.0)	0 (0.0)	1 (5.6)	0 (0.0)
	Non-athletes	0 (0.0)	1 (5.3)	0 (0.0)	2 (15.4)
HOMA-IR ≥ 2.5	Athletes	0 (0.0)	1 (4.2)	2 (11.1)	2 (33.3)
	Non-athletes	1 (1.6)	1 (5.3)	2 (28.6)	6 (46.2)

Note: values are means ± standard deviation or n (%); [†]*p* < 0.10, **p* < 0.05, ***p* < 0.01 vs. BMI < 25 kg/m² (*t* test)

Abbreviations: BMI, body mass index; HbA1c, hemoglobin A1c; HOMA-IR, homeostasis model assessment of insulin resistance.

Table 2. Blood biochemical parameters and percentage of subjects with abnormal values according to categories of WC

WC (cm)		< 85	≥ 85 to < 90	≥ 90
Athletes/non-athletes (n)		85/62	15/12	19/26
Fasting blood glucose (mg/dl)	Athletes	87.6 ± 6.2	88.8 ± 9.0	87.6 ± 4.5
	Non-athletes	90.4 ± 6.6	86.5 ± 7.2	87.2 ± 7.7
HbA1c (%)	Athletes	5.3 ± 0.3	5.2 ± 0.2	5.3 ± 0.3
	Non-athletes	5.3 ± 0.3	5.2 ± 0.3	5.4 ± 0.4
Fasting insulin (μU/ml)	Athletes	3.8 ± 1.9	4.8 ± 1.8	7.6 ± 4.4**
	Non-athletes	4.4 ± 2.2	6.9 ± 3.8 [†]	8.9 ± 5.6***
HOMA-IR	Athletes	0.8 ± 0.4	1.0 ± 0.4	1.7 ± 1.0**
	Non-athletes	1.0 ± 0.5	1.5 ± 0.8*	2.0 ± 1.4**
Fasting blood glucose ≥ 110 mg/dl	Athletes	0 (0.0)	0 (0.0)	0 (0.0)
	Non-athletes	0 (0.0)	0 (0.0)	0 (0.0)
HbA1c ≥ 5.9%	Athletes	0 (0.0)	0 (0.0)	0 (0.0)
	Non-athletes	1 (1.6)	0 (0.0)	3 (11.5)
Fasting insulin ≥ 15.0 μU/ml	Athletes	0 (0.0)	0 (0.0)	1 (5.3)
	Non-athletes	0 (0.0)	1 (8.3)	2 (7.7)
HOMA-IR ≥ 2.5	Athletes	0 (0.0)	0 (0.0)	5 (26.3)
	Non-athletes	1 (1.6)	1 (8.3)	8 (30.8)

Note: values are means ± standard deviation or n (%); [†]*p* < 0.10, **p* < 0.05, ***p* < 0.01, ****p* < 0.001 vs. WC < 85 cm (*t* test)

Abbreviations: WC, waist circumference; HbA1c, hemoglobin A1c; HOMA-IR, homeostasis model assessment of insulin resistance.

FAMILY HEALTH MAINTENANCE IN A JAPANESE FAMILY WITH AN AUTISTIC TWIN

A. Furuzawa¹⁾, M.Asano²⁾

1) Department of Nursing, Graduate School of Medicine, Nagoya University Nagoya, Japan

2) Department of Nursing, School of Health Sciences, Nagoya University Nagoya, Japan

Introduction

Raising children with autism greatly impacts family functioning. In particular, mothers of adolescents with autism may experience feelings of anger towards their children that stems from continually having to care for them [1]. These mothers may also feel all-consumed by caring for their child, thus making intervention necessary. Friedman[2] considered the health care function to be particularly important. She suggests that this function can be examined by observing family health habits; specifically, it can be determined by observation at the level a nurse can provide. Furthermore, she states that family beliefs are important in promoting family health behavior and that they affect family functioning.

This study examined the chronological process of family health maintenance based on the case of a single family, which showed unique relationships between family health habits, health issues, and beliefs.

Methods

Research design: We chose the case study method because it is well suited to understanding a family case in all its depth and complexity and in its natural milieu, with a focus on relations and processes. *Intensity sampling:* A trusting relationship between the interviewer and family is crucial when selecting a family given the depth and frequency of the interviews. The family was chosen after much consideration. *Data collection:* The authors explained the purpose of the study to the family and the support group in both oral and written formats. They then contacted the family to arrange an interview and explained both the purpose of the study and ethical considerations. The interviewer conducted interviews during three visits to the family's home as well as during phone conversations between August 2009 and January 2010. We initially planned a visit once a month, but this was adjusted according to the family's situation. The interview content came from the "Interview Guide for Maintaining Family Health," but the interviews began with broad open-ended questions concerning, for example, the daily practices of the family related to family health, the respondent's thoughts on the health he or she desired for the family, and any beliefs he or she had related to health. Participants were allowed to determine the direction of the conversations and recall personal episodes during the interviews. *Interviewer:* The first author conducted the interview. *Data analysis:* We extracted and analyzed themes by looking at episodes related to (1) health issues, (2) health habits, (3) and beliefs.

Ethical considerations

This study was approved by the Ethics Committee of our institution (Approval number: 7-170). We informed the participants that they had the freedom to agree or decline to participate, data would be anonymous and stored securely, and that confidentiality would be maintained. We obtained consent from each family member for the interviews. Names of family members were changed to protect their identity.

Results

Family profile

The father of the family works as an official. The mother is a homemaker who developed depression while raising the children. Taro and Ken are 18-year-old twins, and Taro has autism.

Narratives of the three interview sessions with family members

The interviews were held in the family's living room. The mother did most of the talking, and the father mainly observed and nodded in agreement. The twins listened nearby and did not say much. The interview atmosphere was characterized by occasional laughter. There were three sessions, with an average session time of 63 minutes. The interviews began with the mother talking about the family's perception of the autistic twin's fixations. The mother explained that many of his behaviors were incomprehensible to her and she could not discern that they were part of his personality. Hospitalization of the non-autistic sibling for asthma led to poor psychological health in the mother, who subsequently suffered from depression. After the onset of depression, she became unable to prepare meals and carry out household chores. Prior to this, she had striven for perfection in the health habits of her family, but her own health problems prevented her from maintaining these habits. Of all the health habits, the mother spoke specifically of being unable to maintain the healthy eating habits of her family. She somehow managed to prepare meals while the children were still in pre-school, but her depressive state worsened once the children entered elementary school. She was unable to prepare meals for the family, even late in the evening. She did not cook rice and, before long, insects began to appear in the house. At that point, the father started purchasing pre-made meals to maintain the family's diet. However, his busy work schedule prevented him from sufficiently sharing daily household duties during the week. The mother and father both felt that the twins should go to the same elementary school. Unlike the situation at pre-school, the family now had no outward support, making dropping off and picking up the children a burden. The comments made by the children's teacher were painful for the mother to hear, perhaps because the teacher did not understand much about children with autism. During this time, the mother was hospitalized for a ligament injury, which resulted in the autistic child being sent to temporarily live at a facility.

At present, the twins are high school students, and the non-autistic sibling is preparing for college entrance examinations. There has been no change in the psychological state of the mother. Her sleep is shallow, and she is unable to escape the feeling that time is pressing upon her as she dreams. She is generally unable to prepare meals and carry out household chores. The father said that he once felt his wife was "lazy," but with a better understanding of her illness, he started to prepare meals. Seeing their father do this, the twins have begun to help

as well. There has been an observable change in how the family perceives their diet.

Turning points in the health maintenance of the family

The mother and interviewer charted the course of the family's health maintenance process from the twins' infancy to the present. Changes were observed, revealing the following prominent turning points in the health maintenance process: **(1) the mother realized that her psychological health was at its worst during the twins' infancy, (2) The stage at which the mother strongly feels the presence of the family, and realizes that they must do everything possible to support one another, (3) the family began to take action in anticipation of the future during the twins' adolescence.** These turning points occurred in the children at each developmental stage.

Infancy stage: The mother realized that her psychological health was at its worst

We identified two themes associated with the mother's realization that her psychological health was at its worst during the twins' infancy: "Confusion about understanding a child with autism" "The mother sensed an abnormality in her condition that led to changes in family health habits"

Childhood stage: The stage at which the mother strongly feels the presence of the family, and realizes that they must do everything possible to support one another.

We found three themes from this stage: "The mother's depression influenced the family's health habits and psychological state" "Changes in the father's behavior led to changes in the twins' behavior" "A lack of understanding about raising children with autism by the general public (neighbors, school staff)"

Adolescent stage: The stage at which the mother thinks about the child's future after the parents' death.

Themes identified from this turning point were: "Feelings of appreciation displayed among family members" "Thoughts on the independence of the children, affirmation of family beliefs, and the future of the family"

Discussion

This study focused on health issues, habits, and beliefs of a family with adolescent twins, one with autism. Turning points in the family's health maintenance were derived by examining the process temporally. Findings from the themes identified in these turning points are discussed below.

1. The child's health problems, such as one that results in hospitalization, places a great burden on the mother. These problems greatly affected the mother's health status and her ability to carry out household chores, ultimately influencing the family's health habits. If we were to surmise why this situation arose, it would likely be that the mother had already reached the limits of her ability to raise a child with autism. Furthermore, Ken's hospitalization pushed the mother beyond her limits, and she was thus unable to cope with the situation. The mother's plight was manifest in her inability to do housework.

2. Families with autistic children have trouble obtaining understanding from schools and others, starting from elementary school. The preschool had brought children from home to school in a bus, but when the children entered

elementary school, it became necessary to take the children to school by hand. This might appear at first to be no major challenge, but for a mother of an autistic child, it presents a very difficult situation. The mother was hurt by the school's inability to understand autistic children, and was unable to receive appropriate support from the school. Given these circumstances, mutual understanding among family members created positive changes in health habits, habits that are not easily reversed. This type of growth among family members is linked to thoughts on the future of the family.

3. In this study, the researcher visited the home of a family with an autistic child and conducted family interviews. The observations at the home allowed the researcher to understand that the family is working to maintain their day-to-day life to the best of their ability, and that a reversal of health habits that have undergone change is difficult. Furthermore, the family's efforts to maintain health habits were evident not merely in their words, but in the home environment as well.

In this sense, home nursing assistance can promote changes and is likely to become more necessary in the future. In order for this to occur, a major step will be to increase nurses' awareness of the importance of home visits. This, in turn, should lead to studies that promote family assistance skills among nurses.

Conclusion

Effective interventions by nursing professionals are regarded as important for the health care function of families. In particular, attention should be paid to the family's health habits. However, this family's health habits interacted with the mother's health issues, and changes that occurred in these habits became fixed and still remain. Although these are not ideal habits, bringing about a reversal of changes is difficult. However, both the parents and the adolescent children are thinking about the future and making preparations accordingly. In light of the actions of the family in anticipation of the future, it is important for family members to seek out and express both their family and personal beliefs.

Strengths and Limitations

A weakness of this case study is that it may not be representative of most cases of families in a similar situation. To better understand healthcare functions through family health issues, we selected a special family case in which one of the twins has autism, which although limiting the generalizability of the findings, did enable the family's experiences of the healthcare function to be explored.

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Author address

E-Mail: furuzawa.ayako@h.mbox.nagoya-u.ac.jp

CARING FOR MOTHERS OF CHILDREN WITH AUTISTIC SPECTRUM -EFFECTS OF THE SKIP-MAMMA PROGRAM-

K.Niinomi¹⁾, M.Asano¹⁾, K.Yoshida¹⁾, A.Kadoma⁴⁾, Y.Ohashi^{2,3)}, A.Furuzawa^{2,5)}, M.Yamamoto²⁾, A.Mori²⁾

1) Department of Nursing, School of Health Sciences, Nagoya University, Aichi, Japan

2) Graduate School of Medicine, Nagoya University, Aichi, Japan

3) Department of Nursing, College of Life and Health Sciences, Chubu University, Aichi, Japan

4) School of Nursing, Nagoya City University, Aichi, Japan

5) Department of Nursing, Nagoya University School of Medicine, Aichi, Japan

Introduction

Recently, the number of children with autistic spectrum disorders (ASD) has been increasing. These children show unique behavior and ways of communication, therefore families often face difficulties in parenting. Improvement in a family's QOL cannot be achieved, when such families are not offered enough support to help reduce their anxiety and stress and to develop skills required for raising these children.

Aim

The purpose of this study was to examine the effects, mostly in QOL, of the Skip-Mamma program for mothers of children with ASD.

Methods

An intervention study was conducted. The Skip-Mamma program was designed to promote a mother's life-skills for childrearing and to refresh and heal her mind and body. Interventional effects were assessed using World Health Organization QOL-26 (QOL-26), Parenting Stress Index-Short Form (PSI-SF) and Family Assessment Inventory (FAI) at 3 time points during the program as follows: before the first session, at 3 months into the program, and after the program ended (6 months). Data were analysed by the Wilcoxon test using SPSS 13.0J software.

About The Skip-Mamma Program

Purpose of the Program: To improve the QOL of families who are raising a child with ASD, through promoting the parents life skills for childrearing, refreshing and healing their mind and body and identifying the family strength and functions.

Participants of the Program: Mothers of children older than 18 months who have or may have ASD. The program is conducted in a small group session, each including 4 to 8 participants.

Staff Background: Nurses (Including Public Health Nurses and Midwife).

Idea of the Program: Provide an Approach for Increasing Strength / Promote Self Care / Family System Approach / Promote Communication / Suffer-Solutions / Collaborate.

Outline of the Program (Figure 1): The program comprise 6 sessions, 1 conducted every month. Each session is for approximately 2 hours. Each session starts with a "warm-up" exercise with a balancing ball and mini-lessons are given each time with a different theme. The session is conducted either with a "relaxation" exercise performed with balancing ball or an aroma massage. Finally, a closing ceremony is held

in which certificates are awarded to all the participants. In the first half of the program, participants were given an opportunity to observe and learn about themselves, their children, and their families. In the latter half of the program, participants are given a chance to express what they consider an ideal family to be by learning about diversity through sessions and help from peers.

1st	2nd	3rd	4th	5th	6th
15min Warming Up					
1st Survey Questionnaires	Balancing Ball	Balancing Ball	2nd Survey Questionnaires	Balancing Ball	Balancing Ball
30min Mini-Lesson					
ICE BREAKING Friend Searching BINGO! for Self Introduction	Barrier-Free for Children With ASD	"I'm OK, You're OK" Knowing About Self Basic Posture	"Small Box for Healing Oneself"	Lesson for Peer Support "Paper Plane Paper."	Discussion Looking Back about Changing in Child-Rearing & Family
15min Tea Break : Herb Teatime					Tea Party
45min Work Shop					
Brain Storming What is Your Distress?	Discussion Family Values	Discussion Child Behavior	Discussion Daily Life of Parents	Discussion Daily Life of Family	Aroma Massage
15min Relaxation					Ceremony
Balancing Ball	Aroma Massage (hand)	Aroma Massage (hand)	Aroma Massage (foot)	Aroma Massage (foot)	3rd Survey Questionnaires

Figure 1 Outline of Skip-Mamma Program

Ethical Considerations

The study was approved by the Nagoya University Ethics Committee.

Results and Discussion

The participants in this survey include 25 mothers {39.4±4.3 (Mean±SD) years old} from 5 session groups who completed the program and of 27 children {83.2±33.6, 42-150 (Mean±SD, Range) months old} with ASD. There is a mild positive transition for every questionnaire, but there is no significant change (Table 1).

Table 1 Score Change 3 points in total process of the Skip-Mamma program N=27, Mean±SD

	Before the 1st session	3 months into the program	after the program ended	p
QOL-26	79.6±8.1	77.6±9.6	81.4±10.5	ns
PSI-SF	51.8±8.6	50.6±8.4	49.2±7.0	ns
FAI	115.8±13.5	116.0±14.6	117.8±20.0	ns

Wilcoxon test
QOL-26: WHO QOL-26, PSI-SF: Parenting Stress Inventory-Short Form, FAI: Family Assessment Inventory

Next, detailed changes in QOL-26 were individually analyzed and three patterns were identified. There were classified into the QOL rising pattern group, descending pattern group or V-shaped pattern group. Most participants (n=15 / N=27) were classified into the QOL rising pattern group (Figure 2). This

increase in QOL through the program sessions observed in majority of the participants reflects the positive effect of the program.

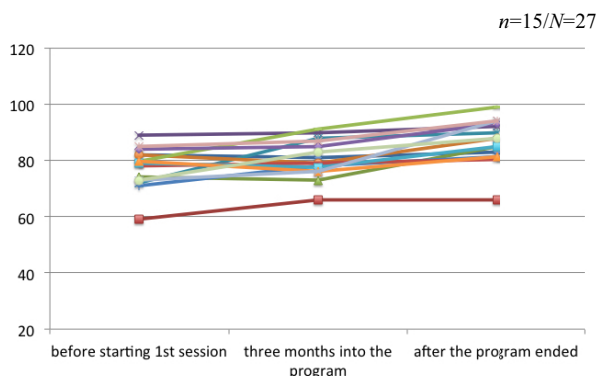


Figure 2 QOL-26 scores in each period of the Skip-Mamma Program [The QOL Rising Pattern]

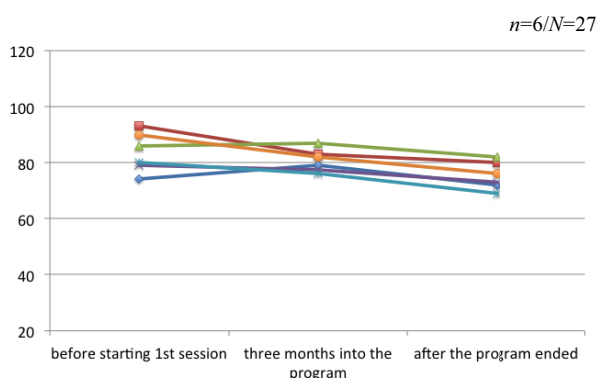


Figure 3 QOL-26 scores in each period of the Skip-Mamma Program [The QOL Descending Pattern]

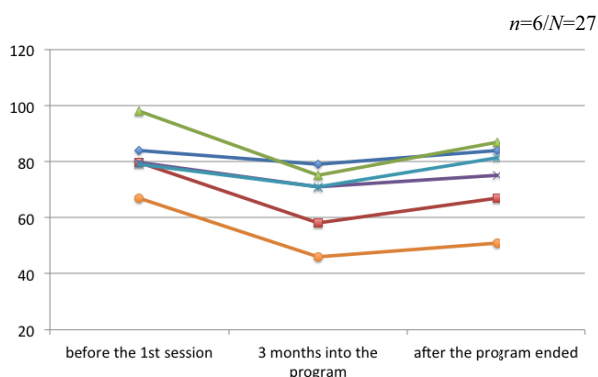


Figure 4 QOL-26 scores in each period of the Skip-Mamma Program [The QOL V-Shaped Pattern]

We paid attention to the backgrounds of participants who showed the QOL descending pattern ($n=6$) and made observations as follow (Figure 3). In the descending group, there were participants who troubled by some physical symptoms or illnesses, and in one family, many of the members were in a poor condition. Every year in Japan, the months of March through April see events such as graduation, the first day of school, or promotions; such times are stressful for children with ASD, and their families are well aware of this majority of the families who participated in the program held during these months were classified in this descending pattern group. 6 participants were classified into the V-shaped pattern group (Figure 4). Before the program started,

a participant later classified under this pattern said “These days, I’m deeply depressed.” and another said “Though I feel that I want to escape from reality, I got a chance to try and look after myself.” As previously mentioned in the outline of the Skip-Mamma program, a part of the session in the first half of the program are composed of lessons and workshops that will help participants’ observe and learn about their own mental state, and characteristics or problems of their family members. On the other hand, the latter half of the program is designed to promote a deeper understanding of what participants consider an ideal family to be by understanding group dynamics and taking help from peers. We found that the participants’ increased understanding of themselves and their family is an important aspect, and the V-shaped pattern was expected to come out beforehand to be taken. For participants who completed the program, we held regular follow-up sessions to determine whether their QOL remained the same or showed improvement. We call this follow-up session a “Skip-Salon”, and this salon started from request and hope by participants who complete the Skip-Mamma program.

Conclusion

The results suggest that the Skip-Mamma program is useful to the well-being of many mothers’, and also pay attention to an individual’s and family background as it is important for providing better care.

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Author address

E-Mail: niinomi@met.nagoya-u.ac.jp

CHANGES IN MENTAL STATUS FOLLOWING GASTROINTESTINAL SURGERY AND THEIR RELATIONSHIP WITH ADVERSE BEHAVIORS

S.Yamada¹⁾

1) Department of Nursing, Graduate School of Medicine, Nagoya University, Nagoya, Japan

Introduction

More and more elderly and comorbid patients undergo surgical treatments in accordance with the advancement of medical technology. Changes in mental status are prevalent in such patients because the changes are enhanced by pulmonary and/or cardiovascular comorbidity, visual and/or hearing impairment, and nutrition status [1]. Altered mental status often leads to adverse behaviors such as pulling at tubes and falling from the bed. It is difficult to secure safety or comfort of those patients, and the patients' postsurgical recoveries are impeded. It is important to understand temporal pattern of mental alteration in order to prevent adverse behaviors.

The purpose of this study was to examine the relationship between mental status and adverse behaviors in patients after gastrointestinal surgery.

Methods

The subjects were patients of 65 years or older without dementia and/or psychosis who underwent gastrointestinal surgery. The data were collected from June to September 2005.

Demographic data, primary diagnosis, type of surgery, and length of anesthesia were collected from hospital charts. Mental status was assessed using the Delirium Observation Screening Scale (DOSS) developed by Marieke [2]. It is a 25 item 4 point Likert type scale consisting of 8 subscales : [Consciousness] (3items), [Attention/concentration] (3items), [Thinking] (5items), [Memory/orientation] (3items), [Psychomotor activity] (4items), [Sleep/wake cycle] (3items), [Mood] (2items), and [Perception] (2items). Higher score indicates worse mental status. Adverse behavior was assessed for presence or absence of predetermined 13 behaviors including "Takes off oxygen mask" "Moves without caring of lines" "Moves restlessly" and "Suddenly gets up".

Data were collected at 6 points: preoperative period (stage I), immediately after surgery (stage II), night on the day of surgery (stage III), the next morning (stage IV), the afternoon (stage V), and the night of the day after surgery (stage VI).

Changes in mental status in the stages were determined using one-way repeated measures ANOVA, and the Dunnett test was employed for multiple comparisons. Student T-test was used to compare subscale scores of DOSS between the presence and absence of adverse behaviors at each stage. All values were two-tailed. A $p < 0.05$ was considered statistically significant. Data were analyzed using SPSS 13.0J for Windows.

The Institutional Review Board approved the study and informed consent was obtained from the patients. When the subjects complained physical or mental fatigue due to the study, the data collection was discontinued.

Results

Twelve patients (4 males, 8 females) with age of 71.3 ± 5.8 (mean \pm SD) years participated. Primary diagnosis of all subjects was colorectal carcinoma. Length of general anesthesia was 290.3 ± 89.3 minutes and mean blood loss was 488.9 ± 83.7 ml. Sigmoid colotomy and low anterior resection were performed for four patients (33.3%) respectively, right side colotomy was for three (25%), and Miles' operation was for one (8.3%).

Changes in DOSS score are shown in Table 1. Postoperative data were compared with stage I. Subscale scores except [Perception] were significantly higher than preoperative period in at least one stage. Subscales [Psychomotor activity], [Sleep/wake cycle] and [Mood] were significantly higher in all postoperative stages than preoperative period. High scores were found in items "Is sleepy/drowsy during the day" of [Sleep/wake cycle] and "Is apathetic/weary" of [Mood]. Postoperative [Attention/concentration] scores were significantly higher except stage V than preoperative period.

Adverse behaviors were observed in 4 patients (33.3%) of over seventy years old. Three patients exhibited such behaviors on stage III and one did on stage VI. Observed adverse behaviors were "Pulls at gastric tube", "Suddenly gets up", "Takes off oxygen mask" and "Moves restlessly". The DOSS scores were compared between subjects with adverse behaviors and without adverse behaviors. Significantly higher scores of DOSS were found in [Attention/concentration] on stage IV and V, [Thinking] from stage IV to VI, [Memory/orientation] from stage III to VI, and [Perception] on stage II and III in subjects with adverse behaviors (Table 2). Among those subscales, the item "Knows which part of the day it is" of [Memory/orientation] was the highest followed by "Is easily distracted by stimuli from the environment" of [Attention/concentration] and "Thinks to be somewhere else in" of [Memory/orientation].

Discussion

Postoperative changes in mental status were characterized by altered psychomotor activity, sleep-wake cycle, attention/concentration, and mood. Altered mental status sustained the next day of surgery. They were sleepy or drowsy during the daytime and fatigued. However, early ambulation is strongly recommended for postsurgical recovery [3]. It is necessary to incorporate rest as well as activities during the daytime.

The adverse behaviors were observed on the night of the surgery and the following day in this study. Although postoperative delirium has been thought to appear a few days after surgery [4], it is recommended to employ preventive measure from right after surgery. Adverse behaviors were concomitant to changes in perception, memory/orientation, attention/concentration, and thinking pattern. Use of psychometric scale may facilitate early recognition of changes in mental status.

Conclusions

In the current study, high scores in subscales [Psychomotor

activity], [Sleep-wake cycle], and [Mood] were sustained throughout the postoperative period. Adverse behaviors were observed in 4 patients (33.3%) aged 70 or over who exhibited significantly high scores for [Attention/concentration], [thinking], [Memory/orientation] and [Perception].

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Author address

E-Mail: shohkoy@yamanashi.ac.jp

Table 1. Changes in DOSS score before and after surgery n=12

Point of time subscales	stage I	stage II	stage III	stage IV	stage V	stagVI
	Mean ± SD					
Consciousness	1.0±0.1	<u>2.1±0.7</u>	<u>2.0±0.5</u>	<u>1.2±0.2</u>	1.2±0.4	1.1±0.4
Attention/concentration	1.1±0.3	<u>2.4±1.0</u>	<u>2.2±1.0</u>	<u>1.2±0.3</u>	1.4±0.4	<u>1.4±0.4</u>
Thinking	1.0±0.1	<u>1.8±0.7</u>	<u>1.5±0.7</u>	1.1±0.1	1.1±0.1	1.1±0.1
Memory/orientation	1.0±0.0	<u>2.7±1.0</u>	<u>2.3±1.1</u>	<u>1.5±0.7</u>	1.2±0.5	1.4±0.7
Psychomotor activity	1.0±0.1	<u>1.7±0.4</u>	<u>1.5±0.3</u>	<u>1.3±0.3</u>	<u>1.2±0.3</u>	<u>1.3±0.3</u>
Sleep/wake cycle	1.0±0.0	<u>2.0±0.2</u>	<u>1.9±0.3</u>	<u>1.6±0.4</u>	<u>1.7±0.5</u>	<u>1.6±0.6</u>
Mood	1.3±0.3	<u>2.5±0.1</u>	<u>2.5±0.0</u>	<u>2.2±0.6</u>	<u>2.2±0.5</u>	<u>1.8±0.4</u>
Perception	1.0±0.0	1.1±0.3	1.1±0.2	1.0±0.1	1.1±0.3	1.2±0.3

Underlined score: p<0.05 significant from Stage I

Table 2. DOSS scores of patients with and without adverse behaviors n=12

Point of time 8 subscales (Number of patients)	stage I	stage II	stage III	stage IV	stage V	stag VI
	Mean±SD					
Attention/ Concentration	P(4) 1.2±0.3 A(8) 1.1±0.2	3.3±0.6 2.0±0.9	2.8±1.0 2.0±0.8	<u>1.4±0.2</u> <u>1.1±0.2</u>	<u>1.8±0.2</u> <u>1.2±0.4</u>	1.8±0.4 1.3±0.3
Thinking	P(4) 1.1±0.1 A(8) 1.0±0.0	2.0±0.6 1.8±0.7	1.9±0.7 1.4±0.6	<u>1.2±0.0</u> <u>1.0±0.0</u>	<u>1.2±0.1</u> <u>1.0±0.1</u>	<u>1.2±0.2</u> <u>1.0±0.0</u>
Memory/ Orientation	P(4) 1.0±0.0 A(8) 1.0±0.0	3.4±0.3 2.3±1.0	<u>3.3±0.7</u> <u>1.8±0.9</u>	<u>2.2±0.8</u> <u>1.1±0.2</u>	<u>1.6±0.8</u> <u>1.0±0.0</u>	<u>1.9±0.9</u> <u>1.1±0.4</u>
Perception	P(4) 1.0±0.0 A(8) 1.0±0.0	<u>1.4±0.5</u> <u>1.0±0.0</u>	<u>1.3±0.3</u> <u>1.0±0.0</u>	1.1±0.3 1.0±0.0	1.3±0.5 1.0±0.0	1.3±0.3 1.1±0.4

P: presence of adverse behaviors A: absence of adverse behaviors
 Underlined score: p<0.05 significant between P and A

VALUABLE COMMUNICATION AND MEANING FOR MOTHER AND CHILD WITH AUTISM SPECTRUM DISORDERS (ASD): A CASE STUDY

M. Yamamoto¹⁾, M. Asano²⁾

- 1) Department of Nursing, Graduate School of Medicine, Nagoya University, Nagoya, Japan
- 2) School of Health Sciences, Nagoya University, Nagoya, Japan

Introduction

Autism spectrum disorders (ASD) is known as a communication disorder. Children with ASD exhibit difficulties with social interaction and communication skills. Since 1999, research on ASD has been increasing in Japan. Communication methods with the autistic child have been researched in the fields of psychology, pedagogy, and therapy. However, research with the focus on the mother-child relationship and the communications in daily life are very limited in Japan.

The mothers who are rearing child with ASD had the experience of connecting with child, and it was important for her. Therefore, I focused on the valuable communication whereby a mother is connected with a child.

Aim

The aim of this case study is to describe the communication between parent and ASD child. We explored what is mother's valuable communication, and what is meaning for them of the valuable communication.

Methods

Date Collection:

This study is a qualitative single case study. I used participant observation and interviews. Participant observation began in April, 2010, and it was about two hours twice a week, at a support class in which they were participating. I wrote the fieldnotes promptly after the support class. Interviews began July in 2010, it was about two and a half hours ever three or four months. Interviews were audio recorded and transcribed verbatim for analysis.

Data analysis:

I used qualitative methodology to analyze my data. After initial overviews, the fieldnotes and transcripts were read several times. The data were analyzed in terms of valuable communication and meaning.

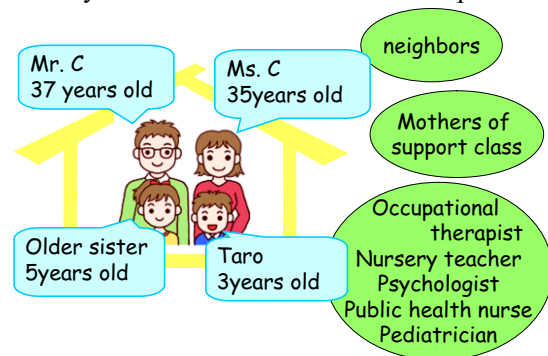
Ethical Consideration:

I received consent from Ms.C, the director of the support class and the nursery teacher. The study was approved by the University Ethics Committee.

Introduction of Ms.C and Taro:

Ms.C and Taro live with Taro's father and older sister. Taro was three years old. He struggles with verbal communication, likes to play alone, and has difficulty expressing feelings. Ms.C had the ability to talk about her idea and experience. Sometime, she talks about child rearing with other people. Frequently, Mr. C and Ms.C talk about child rearing. Some specialists are supporting the family.

Family Members and human relationship



Taro was often playing alone in daily life. At that time, he didn't change his expression and was repeating the same action. Ms.C desired to communicate with Taro, but she didn't know what to do for him. She was confused. Around that time, she noticed Taro laughing when she singing and playing hand games. So, Ms.C thought that it was likely to be possible to communicate with Taro through play in which Taro laughs. Ms.C wanted to have the chance to communicate with Taro by singing and playing hand games.

The scene in which Ms.C and Taro were laughing in the support class. Taro came to Ms.C with a smile. Ms. C began to sing, Taro was laughing, dancing, and looked at Ms.C. Ms.C looked at Taro who was laughing happily, and she was laughing, too. Their laughter reinforced mutually, and finally they laughed out loud.

One scene in the support class



Results

Valuable communication for Ms.C :

Ms. C said as follows about laughing together with Taro.
“The happy time spent with Taro is when he is smiling, and laughing. I can laugh with Taro. I can enjoy time happily with Taro.”

Ms. C often said that mutual laughter was the key to deepening relations with Taro. She wants to value the opportunities for Taro to express himself, because Taro has a delay in language development and difficulty expressing feelings. I asked Ms. C what is most enjoyable, she said laughing together. Therefore, I thought that the most valuable communication is “*Laughing together*”, and this is based on the important idea that Ms. C wants to treasure Taro’s happiness.

Meaning of “Laughing together” for Ms. C and Taro:

Ms. C talked about her feeling when she was laughing together with Taro in daily life.

“When I saw him laughing, I felt happy too, and I wanted even more for us to do things together.”

“When Taro was singing a song, I remembered his song. I sang it together with him. My song affected him, and he laughed and danced. Ah! that’s exactly what I thought. At that time, I felt connected to Taro.”

Ms. C and Taro share feelings of happiness by *Laughing together*. They feel a desire to do things together. And *Laughing together* was a way of connecting Ms. C and Taro.

Conclusions

It might be difficult for a mother and autistic child to find the methods of mutual laughter. Ms. C hoped to treasure Taro’s happiness and she produced the shared laughter using Taro’s favorite thing. The value and meaning concerning communications are different in each parent and child. It is important that we learned the mother’s values and sense of meaning.

It is necessary to connect the mother with a child who has ASD. Laughing together has developed feelings of connection between mother and child. We should pay attention to behavior connecting mother and child such as laughing together.

This study was a single case study. It is one side of the communication. Future studies should explore communication of plural pairs.

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Author address

E-Mail: yamamoto.mami@c.mbox.nagoya-u.ac.jp

Readability and Suitability of Printed Health Information Materials in Korean

Dong Eun Shin

MSN student, Graduate School, Yonsei University
Gangwon-do, Republic of Korea

SIGNIFICANCE: Health professionals use printed materials as primary teaching tools to give patients health information. Printed materials that require a high reading level may not be understandable by people with low literacy skills, or even cause unwanted consequences if individuals with low-literacy misinterpret the meaning of the materials. In addition to reading grade level, the suitability of printed materials, based on elements such as design and organization of content, can influence how much health information a reader absorbs. Not all health professionals are aware that printed materials requiring a high reading level or individuals with low literacy may present barriers to understanding printed health information.

PURPOSE: The purpose of this study was to review research studies on readability and suitability of printed health information materials in Korean.

METHODS: The databases PubMed, and electronic searches were searched for the terms printed health information materials, readability, and suitability in abstracts published from 2000 up to the present date in Korea. Data were extracted from 7 studies found to be eligible. The seven research studies were reviewed in terms of readability and suitability of the printed materials.

RESULTS: In the 7 studies evaluation was done of printed materials on hypertension, cancer, CT patient information, and diverse health information, which were developed by public healthcare institutions or the Korean Academy of Family Medicine. For readability, in all studies materials were evaluated using grade lexical items for teaching Korean (Kim, 2003). Results showed that the reading level of the materials was higher than a 6th grade reading level. For suitability, in all studies materials were evaluated using Suitability of Assessment of Materials – Korean Version (KSAM, Sung et al, 2004), which included content, literacy demand, graphics, layout and typography, learning stimulation and motivation, and cultural appropriateness. In the study by Lee et al (2011), 26% of hypertension information materials were evaluated as not suitable. In the study by Yoo (2001), 60% of CT patient information materials were evaluated as not suitable.

CONCLUSIONS: These findings suggest that as printed health information materials need to be readable and suitable for the patients and their families, it is essential to know how to evaluate readability and suitability of printed health information materials. In developing printed materials for patient teaching, appropriate readability and suitability levels must be achieved so they will be useful in enhancing understanding of health knowledge in individuals and their families.

A Mentoring Program for the Prevention of Sexual Violence among Korean Adolescents

Yang Heui Ahn, Young Mi Lim, Gi Yeon Kim, Ki Kyung Kim, Hee Young Song
Department of Nursing, Nursing Center for Women Health
Yonsei University, Wonju College of Medicine
Gangwon-do, Republic of Korea

INTRODUCTION: In Korea, Ministry of Gender Equality and Family (2011) reported that 4% of Korean women suffer sexual assault in their lifetime. It is reported that the majority of sexually violent crimes are committed against adolescents and many offenders are youth themselves in Gang-Won province. One way to prevent sexual violence could be through a mentoring, which is structured and systematic intervention. This study was designed to develop and evaluate a mentoring program to enhance sexual self-efficacy and autonomy as well as sexual knowledge and attitude of adolescents. The purpose of this study, therefore, was to determine the effects of a mentoring intervention for the prevention of sexual violence among Korean adolescents.

METHODS: A nonequivalent control group pretest-posttest design with repeated measurement was conducted. Twenty five second-grade students of the middle school in the intervention group and 35 second-grade students in the control group participated. The mentoring intervention was performed by three trained nursing students as mentors. The intervention included formal 90-minute eight group sessions, and personal and informal contacts during the 4 week period. The instruments were Sexual Knowledge Scale, Sexual Attitude Scale, Sexual Self-Efficacy Scale, and Sexual Autonomy Scale. The instruments were measured in both the intervention and control group at baseline, post-intervention, and 8-week follow-up. For data analysis, t-test was used to homogeneity between the intervention and control group at baseline. Repeated measures analysis of variance was used to determine the effect of the intervention and the effect of time on the sexual knowledge, sexual attitude, sexual self-efficacy and sexual autonomy.

RESULTS: For homogeneity testing, there were no statistically significant differences in descriptive characteristics, and dependent variables between the intervention and control group at baseline measurement. For sexual knowledge, the interaction of time and group was significant as was the effect of time ($p < .05$). The between subject test of the effect of group was also significant ($p < .05$) in sexual knowledge. For sexual attitudes, there was not a statistically significant time effect, but there was a statistically significant group effect ($p < .05$). For sexual self-efficacy, there was not a statistically significant group effect, time effect, and the interaction of time and group. For sexual autonomy, the effect of time was significant ($p < .05$) but the interaction of time and group was not a significant. In addition, the between subject test of the effect of group was also not significant.

CONCLUSION: The results show that sexual knowledge of adolescents was increased, indicating the effectiveness of the mentoring intervention for even a short period of time. The longitudinal research on a mentoring intervention needs to be further considered so that the teenagers could have the belief having the capability to control over adolescents' motivation and behavior in a sexual situation as well as the ability to make decisions about their own sexuality, which could result in decreasing victims and offenders of sexual violence.

Development of a simulation scenario of emergency care of dyspnea for use by nurses

Hye won Kang¹, Hea kung Hur¹, Hee young Song¹, and Hyun Kim²

Department of nursing¹, Department of emergency medicine²,
College of Medicine, Yonsei University, Gangwon-do, Republic of Korea

INTRODUCTION: Recently, the patients with dyspnea were increased by population aging. The causes of dyspnea are cardiac or pulmonary disease and potentially life threatening illness.

So it is essential to assess and stabilize the symptom rapidly through differential diagnosis. Many guidelines for emergency care of patient with dyspnea were suggested, but there were insufficient guidelines for nurses. And it is needed to develop the education for emergency care of dyspnea for nurses.

With development of patient simulation, simulation based education has been used in nursing education. Development of simulation scenario for emergency care of dyspnea for nurses will provide effective education and make the nurses to practice emergency care of dyspnea.

METHODS: The process for this study included the following stages. To construct the algorithm for dyspnea emergency care, a preliminary algorithm constructed based on a literature review and content validity and clinical validity were established. To develop simulation scenario, the simulation scenario template originally developed by Bay Area Simulation Collaborative(BASC) was modified and used. And to construct content validity, and clinical applicability was also established. To construct content validity, expert group consisted of 2 professors of nursing, a professor of emergency medicine, 3 nurses of emergency nursing, and a professor of a emergency medical technology wrote the translated and modified scenario validity check list which was suggested by Waxman(2010). And then collected expert's opinion, modified the scenario.

To establish clinical applicability 9 registered nurses were provided simulation scenario education used SimMan® in OSCE room of Y university. The skill performance, critical thinking, self-confidence, satisfaction which were suggested Jeffries's simulation model(2007) by open questionnaire. And then modified the scenario, confirmed the final scenario.

RESULTS: The results of this study are summarized as follows.

1. The algorithm for dyspnea emergency care consisted of 7 phases; initial assessment, immediate emergency care, reassessment of dyspnea, monitoring respiratory failure occurs, performing cardiopulmonary resuscitation if no pulse is present, or preparing for intubation if pulse is present, determining a differential diagnosis of cardiac origin, pulmonary origin or other causes based on additional assessment if dyspnea has improved.
2. Flow of the algorithm was unified into 5 paths; after the initial assessment and immediate emergency care, reassessment of current state of dyspnea requiring 3 paths were verified depending on origin of dyspnea as cardiac, pulmonary or other causes. The final 2 paths were, if dyspnea is aggravated, monitor for respiratory failure and check pulse and if no pulse, start cardiopulmonary resuscitation. If pulse is present, prepare for intubation.
3. The simulation scenario consisted of scenario overview, curricular integrity, and scenario script with case of aggravated dyspnea and another is improvement in dyspnea.

CONCLUSION: The results of this study suggest that the simulation scenario for emergency care of dyspnea provides guidelines of dyspnea emergency care for nurses and education utilizing the simulation scenario should improve nurse's knowledge, skill performance, and critical thinking.

Further studies are warranted to apply the simulation scenario to emergency care of dyspnea and to test its effectiveness.

Relationship among depression, family support, and rehabilitation motive in patient with acute or subacute hemorrhagic stroke

Moon, Hak Hee¹, Shin, Yun Hee¹, Lim, Young mi¹, Whang, kum²
Department of Nursing The Graduate School Yonsei University¹,
Department of Neurosurgery Yonsei University College of Medicine²
Gangwon-do, Republic of Korea

INTRODUCTION: After experiencing a stroke, it is possible to recover to one's normal life through rehabilitation (Madden, Hopman, Bagg, Verner & O'callaghan, 2006) Based on studies that indicate the sooner rehabilitation begins, the higher the chances are in recovery, it is recommended that patients who suffer a stroke start the rehabilitation process within 72hours of the stroke (Korean stroke society, 2009). This research aims to not only provide motives for early rehabilitation, but also to serve as a basis for development of rehabilitation nursing interventions by examining depression, family support, and rehabilitation motives in hospitalized patients with an acute or sub-acute hemorrhagic stroke.

METHODS: This is a descriptive correlational research to discover the influences that depression and family support have on rehabilitation motives. The participants were 78patients in 3general hospitals located in the Ganwon Province. The patients were between 1 to 21days since diagnosed with acue or subacute hemorrhagic stroke. The research scales consisted of 103 questions; questions regarding both general characteristics and characteristics related to strokes. The research instruments were below.

- 1)the Depression scale developed by Beck(1961) and revised by Kim Hyung-Sun(2009).
- 2)the Family support scale developed by Cobb(1976) and revised by Kang Heon-Sook(1984).
- 3)the Rehabilitation motive scale developed by hafen et al.(2001) and revised by Kweon Sam-Seok (2001).

Frequencies, percentages, means with standard deviation, t-test, ANOVA, Pearson correlation coefficients, and multiple regression analysis with the SPSS PC 12.0 for windows program were used for data analysis. Data collection was done on an one-on-one interview basis from March 15 to June 5th, 2010. 78of the 84 interviewed were valid.

RESULTS: 1. The research showed that the following factors influenced the amount of depression the participants felt: gender($t=2.809$, $p=.006$), current marital status ($F=3.211$, $p=.028$), family living arrangements($F=6.618$ $p=.001$), satisfaction with economic status($t=3.358$, $p=.040$), main care-giver ($F=3.683$, $p=.016$), number of hospital days($F=3.176$, $p=.047$), amount of hemorrhage($F=3.589$, $p=.018$), affected side of the body($F=5.437$, $p=.006$), and muscular strength on affected side($F=10.275$, $p=.000$). There were significant differences in family support according to marital status ($F=7.655$, $p=.001$), family living arrangements ($F=25.812$, $p=.001$), satisfaction with economic status($F=7.364$, $p=.001$), family's main care-giver ($F=6.797$, $p=.000$), and the amount of hemorrhage ($F=2.595$, $p=.043$). Significant differences were found in participants' rehabilitation motives related to marital status($F=3.787$, $p=.014$), family living arrangements($F=10.922$, $p=.000$), satisfaction with economic status($F=4.632$, $p=.013$), main care-giver ($F=4.746$, $p=.004$), number of hospital days($F=7.154$, $p=.000$), mount of hemorrhage($F=3.353$, $p=.023$) and muscular strength on affected side ($F=7.154$, $p=.000$).

2. Depression in patients in the incipient stage of acute or sub-acute hemorrhagic stroke showed a negative correlation with family support [$r = -.631 (p < .01)$] and rehabilitation motive [$r = .818 (p < .01)$]. Family support had a significant positive correlation with rehabilitation motive [$r = .775 (p < .01)$].

3. Three variables; depression, family support, and number of hospital days, explained 77.9% of the variance for rehabilitation motive with the F-value being 86.719. Findings showed the higher the family support ($B = .439, p < .001$), the higher the rehabilitation motive, the higher the amount of depression ($B = -.512, p < .001$), the lower the rehabilitation motive, and the longer the period of hospitalization, ($B = -.130, p < .05$) the lower the rehabilitation motive.

CONCLUSION: The findings of this study indicate that lowered depression and greater family support or patients with acute or sub-acute hemorrhagic stroke could result in stronger rehabilitation motive and greater family support could lower depression. As the main factors affecting rehabilitation motive of patients with acute or sub-acute hemorrhagic stroke were found to be depression, family support and number of hospital days, the development of nursing interventions to improve rehabilitation motive should focus on preventing depression increasing family support and reducing the number of hospital days.

Development of an Evidence-based Nursing Protocol after Neck Clipping Surgery for Patients with Cerebral Aneurysm in Intensive Care Units

Jeon, Hee Jeong

Department of Nursing Graduate School, Yonsei University
Gangwon-do, Republic of Korea

INTRODUCTION: The purpose of this study was to develop an evidence-based nursing practice protocol for intensive care unit patients with neck clipping for a subarachnoid hemorrhage due to a ruptured aneurysm. In this study, a protocol was developed to improve clinical practice and to prevent complications and thereby, through the application of the protocol, reduce neurological deficits.

METHODS: A methodological design was used for this study. The study period was from September 1 to December 16, 2010. The protocol in the current study was developed based on the "Clinical Practice Guidelines Manual Version 1.0".

For the first step, a clinical guideline, 'Care of the Patient with Subarachnoid Hemorrhage [SAH]' for postoperative care by the AANN (American Association of Neuroscience Nurses) was compared to Korean clinical practice and used to construct preliminary items. More preliminary items were added through a literature review. Second, the preliminary items were evaluated for validity by a panel of 17 experts. Third, comprehensive literature search was done to identify evidence supporting each item and to confirm that the item was up-to-date. Fourth, each summary table for the evidence of the items was created based on the literatures and the quality of research for evidence was evaluated using SIGN (Scottish Intercollegiate Guideline Network) literature evaluation tools. Fifth, recommended items were formulated and evaluated for strength of each item using the NHS R & D (National Health Service Research & Development) Center for Evidence Based Medicine. Sixth, a preliminary nursing practice protocol was developed including the strength level of each item. Seventh, the preliminary protocol was assessed for appropriateness, applicability, and conformity with nursing care in intensive care units by a panel of 25 experts using a 9-point scale. Eighth, the final items were determined for the nursing practice protocol. Ninth, the nursing practice protocol was evaluated by a panel of 5 experts using AGREE (Appraisal of Guidelines Research and Evaluation).

Frequencies, percentages, means, and standard deviation of the applicability and appropriateness of each item were analyzed using SPSS PC 18.0 for Windows.

RESULTS: The results of this study are as follows.

1. According to the described procedure, a preliminary protocol was developed and evaluated for appropriateness and applicability of each item of the preliminary protocol. With the exception of two items, all items in Nursing Assessment received over 7.5 points. The 2 items were modified and included in the protocol. Of 10 items in Nursing Intervention with less than 7.5 points, two were modified and included and eight items were deleted. Of 19 items in Nursing Evaluation with less than 7.5 points, 4 items were included after modification and 15 items were deleted. Finally, all the items of the final protocol had appropriateness and feasibility scores of more than 7.5 points.

2. The final Nursing Practice Protocol had a total of 22 areas with 163 items including 6 areas with 52 items for Nursing Assessment, 14 areas with 94 items for Nursing Intervention,

and 2 areas with 17 items for Nursing Evaluation. The six areas for Nursing Assessment were (1) neurological examination (2) assess for vital signs (3) airway maintenance and oxygenation (4) assess for increased intracranial pressure (5) assess for laboratory tests (6) assess for cardiac complications. The 14 areas for Nursing Intervention were (7) prevention of vasospasm (8) management of cerebral edema (9) management of hydrocephalus (10) keep head of bed elevation (HOB) (11) fever control (12) administration of medications (13) prevention of deep vein thrombosis (DVT) (14) care for early rehabilitation (15) ventilator care (16) prevention of aspiration (17) mouth care (18) provision of adequate nutrition (19) skin care, and (20) hand washing to prevent infection. The two areas for Nursing Evaluation were (21) patient evaluation for the results after aneurysm ligation and (22) evaluation of the process of care.

3. In this study, the final 163 items were rated. For 121 items the rating was A, for 14 items, B, and for 28 items, C indicating the strength of each item according to criteria from the NHS R & D Center for Evidence Based Medicine. Although the 28 items for C were rated low, the experts were in consensus that the items were all clinically necessary and should be included.

4. The results by AGREE were that 'editorial independence' was found to be the highest at 100% and 'participation of stakeholders' the lowest at 73%.

Percentages for the scope and purpose, the rigor, the accuracy and expression were 82%, 89%, 85% respectfully, all over 80%.

CONCLUSION: The results suggest that this protocol for care after aneurysm neck clipping in patients admitted to the ICU for postoperative care is an evidence-based guideline. Adaptation of nursing practice protocols and guidelines will contribute to further improvement of nursing practice.

Key Word : subarachnoid hemorrhage, aneurysm neck clipping

Pulmonary Rehabilitation of Korean Patients with Chronic Obstructive Pulmonary Disease (COPD)

Ji Soo Jung

MSN student, Graduate School, Yonsei University
Gangwon-do, Republic of Korea

SIGNIFICANCE: COPD has been increasing due to exacerbation of air pollution and increased rate of smoking, placing it in 5th place as a cause of death. COPD has the characteristics of chronic disease with gradual worsening and the experience of dyspnea when engaging in physical activity. The acceleration of symptoms such as fatigue, depression, anxiety, and sleep disorder cause difficulty in implementing treatment therapy and maintaining daily activity. Also, medical expenses due to COPD have been increasing. Therefore emphasis must be given to the importance of self-management to maintain patient's daily activity and decrease medical expenses, and to the importance of pulmonary rehabilitation at home for self-management.

PURPOSE: The purpose of this study was to review the intervention studies on pulmonary rehabilitation of Korean patients with COPD.

METHODS: The databases PubMed and electronic searches were used to search for the terms pulmonary rehabilitation, and COPD in abstracts published from 2000 up to the present. Data were extracted from 9 studies found to be eligible. Nine research studies were reviewed in terms of samples, interventions and outcome measurements.

RESULTS: In 5 of 9 studies, samples were reported as outpatients who were moderately severe. In 4 studies pulmonary rehabilitation was conducted, which included exercise programs, education, and breathing training. Outcomes from 2 studies showed significant changes but only in exercise programs (eg, multilevel exercise capacity test, maximum exercise oxygen level, 6-minute walk test, Borg scale), whereas in 3 other studies, outcomes that were more likely to show significant changes were in programs which including education, breathing training, exercise, and psychological interventions (eg, clinical tests, exercise capacity, dyspnea, health-related quality of life, socio-psychological measurement tool), suggesting that certain outcomes may be more difficult to maintain.

CONCLUSIONS: These findings indicate a need to further emphasize pulmonary rehabilitation, and to provide standardized protocols and home based pulmonary rehabilitation programs of Korean COPD patients.