
Nursing (13:30 ~16:00 Lecture Room 1)

*Session chairs: Prof. Makoto Hirai
Prof. Midori Asano*

Health Status and Health Care Utilization by Marriage-based Women Immigrants in Korea and Policy Directions: Focus on Mental Health

Yang-Heui Ahn¹⁾

1) Department of Nursing, Wonju College of Medicine, Yonsei University, Wonju, Korea

Introduction

One of the challenges of the 21st century is providing care to increasingly multicultural societies. Foreigners living in Korea have increased since 1990s. As of December 31, 2009, 2.4% (1,268,477 persons) of the total Korean population were foreigners. Of importance is the rate of increase every year. Korean society is becoming a multicultural society. The rate of international marriage increased in 2005 compared to 2000, but the number of international marriages decreased in 2006 compared to 2005. However it has stood at over 10% of total marriages. Marriage-based women make up 75.5% of couples, which means there are 3 times more foreign women than men in interracial marriages. Most come from China, Vietnam, Philippines. The Ministry of Justice and the Ministry of Gender Equality and Family have a central part in making policies to support marriage-based immigrants. Various services including Korean language, culture, and other services for marriage-based immigrants have been delivered through multi-cultural family centres based on the "Multicultural Families Support Act". However health care policies for these women are relatively scarce. This ever-increasing multicultural population in Korea poses a significant challenge to nurses offering individualized care to their clients. The author reviewed articles and reports related to health status, behaviours, and health care service utilization by marriage-based immigrant women in Korea, and proposed policy directions.

Conceptual framework and Methods

Conceptual framework of this research: 1) National policies and the health care system related to marriage-based immigrants; 2) cultural competence of nurses; 3) cultural adaptation and mental health of marriage-based immigrant women were reviewed based on health determinants of WHO (2005), and behavioural model of Anderson (2008).

Methods: Narrative review was done through 3 nationwide reports and 10 research studies published since 2005.

Results

National policies and health care system related to marriage-based immigrants: In 2006 the government instituted a plan consisting of multicultural policies for immigrants to facilitate integration into their communities. First 38 Marriage Immigrant and Family Support Centres were established across the country in 2007, and increased to 171 centres as of 2010. The name was changed to multicultural family support centres according to the "Multicultural Families Support Act [MFSA]" which was enacted on March 21, 2008 by the Ministry of Justice. Maternal and child care are delivered for immigrant women and their children based on MFSA. Examples are provision of helpers after delivery, health screening, and interpreters for health examinations, and medical expenses when a woman delivers a premature baby. These services are supported by the Public Health Centres (PHCs) in 2010.

Cultural competence of nurses: There was only one research study on cultural competencies of nurses and care

providers. Cultural competence including cultural behaviour and cultural sensitivity was measured using the Cultural Competence Scale. Scores on cultural behaviour for Public Health Nurses were lower than for care providers at multi-cultural family centres. However scores for cultural sensitivity were not significantly different between the two groups. Public Health Nurses have no educational experience on culture in caring for multi-cultural families.

Acculturation, mental health status, and health care utilization by marriage-based immigrant women: Demographic characteristics of marriage-based immigrant women were as follows. The average age of the first marriage for immigrant women was older compared to Korean women (33.3 years of age for immigrant women, 28.7 for Korean women). The average age difference between immigrant women and their partners was 9.9 years, while for Korean couples it was 2.7. In terms of nationality, immigrant women in their twenties at the first marriage came from Vietnam or Cambodia. The average age difference between them and their partners was 17~18 years. Most immigrant women were high school graduates, but 20~30% of women coming from Vietnam or Cambodia had less than elementary school graduation. Regarding length of residence, 90% of women coming from Vietnam or Cambodia had under 5 years and 21.5% of immigrant women's household monthly income was under 1,000,000won (about 73,800 ¥). Medical aid benefits were received by 7.9% of immigrant women, which is higher than the rate for Korean people (3.7%). Regarding of their acculturation, the greatest difficulty was language difference. The overall level of acculturation stress was moderate, and cultural shock had the highest score. Taking their health into account, 52.1%~53.8% of the women had a perceived general health status as good which is higher than the 38.7%, rate for Korean women who are over 19 years of age. The prevalence rate for depression was 26.5%~40.6%, also higher than the 18.9%, prevalence rate of depression among Korean women of the same age. The rate of alcohol consumption and smoking was lower than for Korean women of this age. The rate of visits to clinics or hospitals when they felt ill was 73.3~78.6%, while to Public Health Centres was 3.3~8.7%.

Policy directions

Based on these results, four policy directions are proposed. *A health care system integrated with language, culture, and health literacy is needed:* Language is a body of words and systems of meaning for the use of the words that is common to a people who are of the same cultural tradition or nation. Limited Korean proficiency is to be restricted in the ability to read, speak, write, or understand Korean, so that language difference can cause difficulty in interrelationships among people. The language differences themselves are barriers to effective communication. The inability to communicate with a health care provider not only limits access to health care but also affects the quality of medical care received and appropriateness of follow-up. Culture refers to the learned, shared and transmitted knowledge of values, beliefs and life ways of a particular ethnic group that are generally transmitted inter-generationally and influence thinking, decisions and actions in

patterns or in certain ways (Leininger, 1991). This pattern of beliefs influences how symptoms are recognized and how they are interpreted and affects how and when health services are sought. The level of acculturation results in differences in the use of health care services. One's culture affects one's understanding of a word or sentence and even one's perception of the world. Cultural differences, which are often associated with language differences, are barriers to communication with health care providers. Health literacy is defined as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health care decisions (IOM, 2004). Language and culture provide the experiential context for comprehension of health information. The culturally bound beliefs, values, and preferences a person holds influence how a person interprets health care information. Knowing about a client's language and culture is a key to assessing the health literacy of the client in a given situation. Reducing unnecessary diagnostic testing or inappropriate use of services by providing culturally and linguistically appropriate care through improvements in health literacy leads to efficiency of care. Therefore a health care system integrated with culture and linguistics and giving consideration to health literacy is necessary for quality of care and improvement in the health of immigrant women.

Development of national standards on culturally and linguistically appropriate services & in-service education on culturally competent health care for public health nurses (PHNs): Cultural competence is important considering PHNs diverse cultural backgrounds. PHNs often serve as advocates for multicultural families through health promotion interventions and community-based disease control and prevention activities. Being culturally competent allows PHNs to more effectively engage in practice, advocacy activities, and to decrease of health disparities. Nurses are accountable for considering cultural differences when developing care approaches specific to these multicultural individuals and families. Cultural awareness reflects knowledge of the differences among individuals and families. Cultural sensitivity includes one's attitudes towards others and one's openness to knowledge within multiple cultural dimensions. Cultural competence includes actions taken in response to cultural awareness and sensitivity. It involves the ability of individualized care for multicultural women's health. Therefore, local and national public health care systems have to be mandated to provide culturally and linguistically appropriate services through the development of national standards. PHNs and other hospital nurses need to be offered in-service education programs on cultural competency skills. Furthermore, nursing education needs to include trans-cultural nursing in the curriculum. The curriculum in trans-cultural nursing should teach the knowledge and skills needed to provide culturally competent nursing care.

Development of an assessment instrument for high-risk immigrant women & provision of individualized intervention programs: The development of an accurate assessment instrument for immigrant women within the community is essential to culturally competent care. An assessment instrument needs to develop to discriminate primarily what is high-risk or not. The instrument including language, culture and health literacy and should be valid and reliable. Based on the literature review, immigrant women's health and health behaviour were found to differ by demographic characteristics, nationality, length of stay in Korea, Korean

language proficiency, and the level of acculturation. Therefore individualized care is needed.

Vitalizing functions of the Public Health Centres (PHCs): PHCs provide primary health care. This care is very important for immigrant women. Resolution of the three policies above must precede providing cultural and linguistic competent care with health literacy at PHCs. Health care of marriage-based immigrant women is needed at PHCs including care from the time of entry into Korea, and by life cycle, and according to level of acculturation. PHCs need to play a key role with the network of multi-cultural family centres and other community resources to enhance the health of these women.

Conclusions

In an increasingly multilingual, multicultural society, providing high-quality health care requires overcoming barriers such as language, culture, and low health literacy. For the implementation of high-quality health care practices, there is need for redesign in the health care delivery system. The government should also support an integrated health care system that is effective, reliable, and sustainable.

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Author address

E-Mail: ahn57@yonsei.ac.kr

Association of Underweight with Low Lymphocyte Count and Prealbumin as Indicator of Malnutrition in Japanese Women

T.Nishida¹⁾, Y.Okamura²⁾, H.Sakakibara²⁾

1) Aichi Health Plaza Comprehensive Health Science Center
2) Department of Nursing, Nagoya University Graduate School of Medicine

Introduction

Underweight women in their 20s and 30s appear healthy, but may have potential health problems. Previously, we reported that severely underweight Japanese women in their 20s and 30s tended to have decreased lymphocyte counts.^[1] The lymphocyte count is known to decrease in a poor nutritional state, due especially to protein-energy malnutrition, and it is regarded as a nutritional state indicator.^[2] Hence, low lymphocyte counts in underweight women might reflect their potential malnutrition. In our previous study, we only examined lymphocyte counts, not albumin or prealbumin. All three are regarded as indicators of malnutrition,^[2] and are used as popular markers of nutrition screening for hospital inpatients. The aim of the present study was to investigate the health problems of Japanese underweight women in their 20s and 30s who underwent a health check-up by measuring albumin, prealbumin and lymphocyte count as indicators of their nutritional status.

Methods

Design and sample

A cross-sectional study was conducted with population-based samples. The subjects were recruited from females aged 18-39 years who participated in an annual health check-up from November 6 to 27, 2008, for residents of a city in Aichi prefecture, Japan. Women who were under medical treatment, pregnant or currently breast-feeding were excluded from the present analysis. This left 912 participants (mean age (SD): 33.6 (4.0) years, range 19-39 years) eligible for the present analysis.

Measurements

The health check-up included a questionnaire about clinical history and lifestyle, body height and weight measurements, and blood examinations. BMI (kg/m^2) was calculated as weight in kilograms divided by the square of height in meters. The self-administered questionnaire included questions on smoking, drinking habits, pregnancy, breast-feeding and weight change.

Data analysis

BMI was categorized as underweight ($\text{BMI} < 18.5 \text{ kg/m}^2$), normal weight ($18.5 \leq \text{BMI} < 25 \text{ kg/m}^2$) and obese ($\text{BMI} \geq 25 \text{ kg/m}^2$). Weight change in the last 3 months was categorized as weight loss (of 1 kg and over), no change (within 1 kg) and weight gain (of 1 kg and over). Nutritional assessments were done on the basis of the cut-off values: albumin of $< 3.5 \text{ g/dl}$, prealbumin of $< 20 \text{ mg/dl}$ and a lymphocyte count of $< 1500 /\mu\text{l}$.

This study was approved by the ethics committee of the Nagoya University School of Medicine.

Results

The prevalence of underweight ($\text{BMI} < 18.5 \text{ kg/m}^2$) was 23.0% ($n = 210$); normal weight ($18.5 \leq \text{BMI} < 25 \text{ kg/m}^2$) was 68.3% ($n = 623$); and obese ($\text{BMI} \geq 25 \text{ kg/m}^2$) was 8.7% ($n = 79$). As for blood examinations, the leukocyte ($p < 0.001$), neutrophil ($p = 0.001$), monocyte ($p = 0.004$), and lymphocyte counts ($p < 0.001$) declined with a decrease in BMI. Serum prealbumin also decreased with lower BMI ($p < 0.001$). The prevalence of low lymphocyte counts of less than $1500 /\mu\text{l}$ was higher in the underweight group ($p = 0.001$). The prevalence of a low prealbumin level of less than 20 mg/dl tended to be greater among the underweight group, though not significantly ($p = 0.098$). Serum albumin increased with lower BMI ($p = 0.009$), but no one displayed a low albumin level of less than 3.5 g/dl . Serum total protein did not differ among the BMI groups.

In a comparison among the weight change groups, BMI tended to be lower in the weight loss group ($p < 0.001$). Lymphocyte counts ($p < 0.001$) and serum prealbumin ($p < 0.001$) were lower in the weight loss group, while serum albumin was higher in the weight loss group ($p = 0.012$). The prevalence of low prealbumin of less than 20 mg/dl increased with weight loss ($p = 0.038$), while that of low lymphocyte counts of less than $1500 /\mu\text{l}$ did not differ among the weight change groups.

The possible association of being underweight and weight loss with a low lymphocyte count of less than $1500 /\mu\text{l}$ or low prealbumin of less than 20 mg/dl was examined by multivariate logistic regression analysis after adjusting for age, smoking and drinking habits. The multivariate logistic regression analysis showed an association of low lymphocyte counts ($< 1500 /\mu\text{l}$) with being underweight (odds ratio (OR) 1.96, 95% confidence interval (CI) 1.35–2.83), but not with weight loss in the last 3 months. On the other hand, low prealbumin ($< 20 \text{ mg/dl}$) was associated with weight loss (OR 1.42, 95%CI 1.00–2.02), but not with being underweight.

In relation to the BMI and weight loss groups, the prevalence of low lymphocyte counts and that of low prealbumin levels were examined among 647 subjects who had neither smoking nor drinking habits to exclude the influence of the two habits (Table 1). Low lymphocyte counts ($< 1500 /\mu\text{l}$) were most frequently found in 7 (35%) in the underweight plus weight loss groups ($n = 20$). Further, 4 (50.0%) had low lymphocyte counts ($< 1500 /\mu\text{l}$) among 8 underweight women who lost weight of 2 kg or more in the last 3 months. The prevalence of low lymphocyte counts tended to be higher with lower BMI in the weight loss subjects ($p = 0.077$) or those without weight change ($p = 0.039$). On the other hand, the prevalence of low prealbumin ($< 20 \text{ mg/dl}$) was not at its highest in the underweight plus weight loss groups. The prevalence tended to be higher in the weight loss group in the normal weight ($p = 0.010$) and obese subjects ($p = 0.023$).

Discussion

The present study showed that underweight women were likely to have lower lymphocyte counts. The prevalence of a low lymphocyte count (<1500 / μ l) tended to be higher in the underweight subjects. In addition, the prevalence was higher by 35% among underweight women who lost weight of 1 kg or more in the past three months, and higher by 50% among those who lost weight of over 2 kg. Protein-energy malnutrition (PEM) is known to decrease lymphocyte counts, and lymphocyte counts are used as an indicator of PEM.^[2] These findings suggested that underweight women in their 20s and 30s can be at risk for low lymphocyte count or potential malnutrition. The risk for malnutrition is thought to be particularly high in underweight women who have lost weight recently.

In our present study, albumin and prealbumin showed no clear association with being underweight. It may be difficult to assess malnutrition by albumin and prealbumin. Earlier studies have reported that concentrations of albumin and prealbumin were within the normal range even in patients with anorexia nervosa.^[3,4] Other studies have also demonstrated that albumin and prealbumin concentrations did not differ between patients with anorexia nervosa and the controls.^[5] The present study suggested that lymphocyte counts could serve as a more sensitive indicator of nutritional status in underweight women than either serum prealbumin or albumin. This manuscript has been published in the Journal of Women's Health.^[6]

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Author address

E-mail: sbara@met.nagoya-u.ac.jp

TABLE 1. FREQUENCY (%) OF LOW LYMPHOCYTE COUNT OR LOW PREALBUMIN ACCORDING TO UNDERWEIGHT AND WEIGHT CHANGE GROUPS

| | <i>Underweight</i> | | <i>Normal weight</i> | | <i>Obese</i> | | <i>p</i> ^a |
|-------------------|-----------------------|-------|----------------------|-------|--------------|-------|-----------------------|
| | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % | |
| Weight loss | | | | | | | |
| Low lymphocyte | 7 | 35.0 | 7 | 13.0 | 1 | 16.7 | 0.077 |
| Normal lymphocyte | 13 | 65.0 | 47 | 87.0 | 5 | 83.3 | |
| No change | | | | | | | |
| Low lymphocyte | 20 | 17.5 | 43 | 14.1 | 1 | 2.6 | 0.039 |
| Normal lymphocyte | 94 | 82.5 | 261 | 85.9 | 38 | 97.4 | |
| Weight gain | | | | | | | |
| Low lymphocyte | 2 | 16.7 | 14 | 16.5 | 0 | 0.0 | 0.226 |
| Normal lymphocyte | 10 | 83.3 | 71 | 83.5 | 13 | 100.0 | |
| | <i>p</i> ^b | 0.129 | | 0.540 | | 0.113 | |
| Weight loss | | | | | | | |
| Low prealbumin | 4 | 20.0 | 12 | 22.2 | 2 | 33.3 | 0.573 |
| Normal prealbumin | 16 | 80.0 | 42 | 77.8 | 4 | 66.7 | |
| No change | | | | | | | |
| Low prealbumin | 20 | 17.5 | 57 | 18.8 | 2 | 5.1 | 0.262 |
| Normal prealbumin | 94 | 82.5 | 247 | 81.3 | 37 | 94.9 | |
| Weight gain | | | | | | | |
| Low prealbumin | 2 | 16.7 | 6 | 7.1 | 0 | 0.0 | 0.112 |
| Normal prealbumin | 10 | 83.3 | 79 | 92.9 | 13 | 100.0 | |
| | <i>p</i> ^b | 0.790 | | 0.010 | | 0.023 | |

647 subjects with no habits of smoking and alcohol consumption were used for analysis.

Underweight (BMI <18.5 kg/m²), Normal (18.5 ≤ BMI <25 kg/m²), Obese (BMI ≥25 kg/m²). Weight change was classified according to weight changes in the previous three months. Low lymphocyte (<1500 / μ l), Normal lymphocyte (≥1500 / μ l). Low prealbumin (<20 mg/dl), Normal prealbumin (≥20 mg/dl).

^a *p* values by chi-square for trend between indicators of malnutrition with BMI in each weight change group.

^b *p* values by chi-square for trend between indicators of malnutrition with weight changes in each BMI group.

Comparison of Salivary Cortisol, Heart Rate, and Oxygen Saturation Between Early Skin-to-Skin Contact Methods with Different Initiation and Duration Times in Healthy, Full-Term Infants

Y. Takahashi¹⁾, K. Tamakoshi¹⁾

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

Introduction

Skin-to-skin contact (SSC) is a well-known caring method to facilitate the neurobehavioral self-regulatory responses of the infant after delivery. However, there are few studies that compare the physiological and biological efficacies between different early skin to skin contact (SSC) methods postbirth. The aim of the present study was to investigate how two different SSC methods based on initiation time and duration influenced indicators of stress as measured by salivary cortisol besides time to stability of HR and SpO₂ among healthy full-term infants.

Materials and Methods

Subjects: We conducted an observational study of 147 consecutive newborn infants who were born spontaneously at two maternity hospitals in Aichi Prefecture, Japan, from January to October in 2009. The subjects were healthy full-term infants who were selected according to the criteria below: Maternal inclusion criteria were spontaneous vaginal delivery, singleton full-term infant, and uncomplicated pregnancy and delivery courses. Maternal exclusion criteria were dysfunctional labor, dystocia, sign of fetal distress during labor, general anesthesia during delivery, multiple birth, and cesarean section. In addition, infants had to be healthy and full term. Infant exclusion criteria were any congenital anomaly, and obvious birth asphyxia as assessed by either 1- or 5-minute' apgar of seven or less. Furthermore, the infants for whom the salivary cortisol levels were obtained at 1min, 60 min, and 120 min were eligible for this study. Finally, the current analysis was restricted to 79 healthy full-term infants, 68 for whom data were obtained on both heart rate and oxygen saturation (figure 1). This study protocol was approved by the Ethics Review Committee of the Nagoya University School of Medicine, Nagoya, Japan.

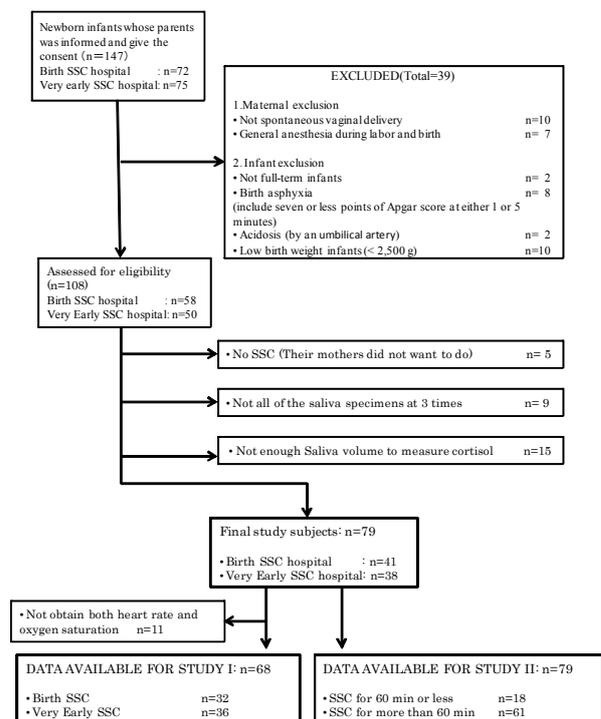
Salivary Cortisol: Saliva specimens were collected a total of 3 times; at 1 min after checking 1-min apgar score, and 60 min and 120 min after birth, respectively. Saliva was collected from infants using the Sorbette (Salimetrics, LLC, Pennsylvania, USA). After collection, the saliva was stored at - 83°C. Salivary cortisol concentration was determined using a commercial high sensitivity EIA kit (Salimetrics, LLC, Pennsylvania, USA).

Heart Rate and Oxygen Saturation: Pulse oximetry measurements were carried out using a NELLCOR Oxisensor N-25 and a NELLCOR™ OxiMax™ N-600™ Pulse Oximeter (Covidien-Nellcor and Puritan Bennett, Boulder, USA). We placed a pulse oximetry probe over the newborn's right sole as soon as possible after birth. The pulse oximeter recorded arterial SpO₂ and HR every 10 seconds for 120 min after birth.

Study 1: To determine whether or not the difference in the initiation time of SSC influences the time to stability of HR and SpO₂ for almost 30 min after birth. The time to stability of HR and SpO₂ were defined as the first of 3 consecutive HR readings of 120-160 beats per minute (bpm) and SpO₂ reading of 96% =<, respectively. The first time of 3 consecutive SpO₂ reading of 92% =< was also evaluated.

Study 2: To assess whether or not the difference in the duration of SSC influences salivary cortisol levels over the first 2 hours after birth.

Figure 1 Flow of the participants through the study and date collection.



Data analysis: In study 1, study infants were divided into two groups: those who began SSC 5 min or less ($n=32$) after birth and those who did so more than 5 min ($n=36$) after birth. In the present study, the former group was defined as 'birth SSC' and the latter group as 'Very early SSC' based on the classification of early SSC by Moore et al.² Kaplan-Meier curves were generated for time to HR and SpO₂ stability. The difference between groups was assessed with log-rank test. Next, we used Cox proportional hazard model to relate the time of HR or SpO₂ stability to a number of explanatory variables including SSC initiation time category, umbilical artery pH, labor induction, meconium staining, birth weight, and total length of first-stage and second-stage labor in minutes. The exponent of the parameter estimate of SSC initiation time category [EXP(parameter estimate)] indicates the efficacy of Birth SSC group compared with the reference category (Very early SSC group). Additionally, mean HRs were calculated at 1-min intervals from 3 to 30 min after birth.

In Study 2, we divided the subjects into two groups: those who underwent SSC for 60 min or less ($n=18$) and those who did so for more than 60 min ($n=61$). As we measured salivary cortisol levels a total of 3 times for 120 min after birth, the

general linear model (GLM) in SPSS that is used in repeated measures designs (two-way repeated measures ANOVA) was used to compare the effect on salivary cortisol levels between the two groups and calculate each mean cortisol level 3 times by 2 groups while adjusting for the initiation time of SSC, umbilical artery pH, labor induction, meconium staining, birth weight, and total length of first-stage and second-stage labor in minutes. Data were analyzed using the SPSS statistical package for Windows Version 17.0 (SPSS, Chicago, USA). Differences were considered significant when $P < 0.05$ for the two tails.

Results

HRs showed a lower tendency among the birth SSC group than the very early SSC group. There were significant differences at 5, 10, 15, and 20 min ($P < 0.05$, $P < 0.01$, $P < 0.01$, $P < 0.05$, respectively). Kaplan–Meier analysis showed a significant difference in the cumulative probability of HR stability of 120–160 bpm between the subgroups ($P < 0.01$). In Cox model analysis, the birth SSC group showed 2.52 times the efficacy of HR stability compared with the very early SSC group [EXP(0.925)=2.52 (95% CI: 1.41–4.51), $P < 0.02$]. Also, the cumulative probability of the SpO₂ stability of 92% = \leq and 96% = \leq using Kaplan–Meier analysis. It did not show any significant difference in cumulative probabilities of either 92% = \leq nor 96% = \leq between the subgroups ($P = 0.69$ and 0.39, respectively). Cox model analysis also showed no significant associations between initiation time of SSC and SpO₂ stability [SpO₂ stability of 92% = \leq as dependent variable; EXP (parameter estimate)=EXP(0.062)=1.06 (95% confidence interval: 0.609–1.86), $P = 0.872$ and SpO₂ stability of 96% = \leq as dependent variable; EXP(0.111)=1.12 (95% CI: 0.652–1.92), $P = 0.652$]. Crude means (standard error: SE) of salivary cortisol were 6.10 (0.74) $\mu\text{g/dl}$ at 1 min, 4.72 (0.50) $\mu\text{g/dl}$ at 60 min, and 2.71 (0.41) $\mu\text{g/dl}$ at 120 min in the infants who underwent SSC for 60 min or less, and 6.29 (0.40) $\mu\text{g/dl}$ at 1 min, 4.04 (0.27) $\mu\text{g/dl}$ at 60 min, and 2.09 (0.22) $\mu\text{g/dl}$ at 120 min in those who did so for more than 60 min. The cortisol level for 1 min was not significantly different between the subgroups ($P = 0.824$). Salivary cortisol levels showed decreasing trends in both groups and no significant difference between two groups ($P = 0.429$). After multivariate adjustment, the adjusted means (SE) were 5.03 (0.46) $\mu\text{g/dl}$ at 60 min and 2.71 (0.40) $\mu\text{g/dl}$ at 120 min among the infants who underwent SSC for 60 min or less, and 3.94 (0.24) $\mu\text{g/dl}$ at 60 min, and 2.08 (0.21) $\mu\text{g/dl}$ at 120 min among those who did so for more than 60 min. SSC continuing for more than 60 min significantly decreased salivary cortisol levels between 60 and 120 min after birth compared with SSC for 60 min or less ($P < 0.05$).

Discussion

In our study of healthy full-term infants, we found that birth SSC lead to the stability of HR earlier than very early SSC. All of measured body temperatures postbirth kept in normal range though they were significantly lower in the birth SSC group than the very early SSC group. In addition, SSC continuing for 60= \leq min significantly decreased salivary cortisol levels as a marker for stress at 2 hours postbirth compared with SSC for only < 60 min. The present study proposed further evidences of early SSC for full-term infants.

Most of the studies also compared the infants with SSC with control infants who were separated from their mothers. To our knowledge, there were only a few randomized control studies that compared behavioral and physiological change of infants or mothers between dyads with different initiation

times and/or duration of SSC. In the study by Christensson et al.¹, 44 healthy full-term infants were observed during the first 90 min after birth in terms of duration of crying when infants were cared with: 1) 76–85 min of SSC with mother. 2) In a cot for the first 45 min of 90 min observation period and then SSC with the mother for 45 min. 3) In a cot for 76–85 min. The cumulative amount of crying during the first 90 min after birth was significantly less in the SSC group than in the mixed cot/SSC group. The findings of this previous study seemed likely to support ours. In the previous studies examining the efficacy of SSC during the early period after birth, infant temperature, HR, respiratory rate, and blood glucose have been used as study outcomes. So we paid due attention to salivary cortisol. We found a significant difference in the effects of SSC on salivary cortisol immediately after birth between infants with SSC of 60 min or less and those with more than 60 min. It is difficult to explain the unitary mechanism underlying the various efficacies of SSC. SSC is suggested to facilitate the neurobehavioral self-regulatory responses of the infants who persist in more labile imbalance and fluctuation of autonomic, motor, state, and attention/interaction subsystem. Our findings are supposed to be due to the postbirth development of self-regulation of each subsystem by SSC. Self-regulation is considered as infant adaptation to various internal and external stimuli and to unstable situations, and is in great demand immediately after delivery. Early SSC may be a ‘nature way’ of antagonizing the ‘stress of being bone’ like the other mammals. Therefore, ‘When should SSC start after birth?’ and ‘How long should SSC be underwent?’ are the important problems in establishing the effective SSC. Additionally, it is also necessary to establish the safety SSC method.

There are two limitations in our study. One limitation was that our study was observational. Thus, subjects must be randomized to confirm our results even enough, though the characteristics of SSC groups were almost comparable and multivariate adjustment was performed. Another limitation arises from the fact that healthy and full-term infants were the subjects of our study. Hence, our results may not apply to preterm infants and infants with any complication.

Conclusions

Birth SSC lead to the stability of HR earlier than very early SSC. All of measured body temperatures postbirth kept in normal range though they were significantly lower in the birth SSC group than the very early SSC group. In addition, SSC continuing for 60= \leq min significantly decreased salivary cortisol levels as a marker for stress at 2 hours postbirth compared with SSC for only < 60 min.

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Author address

E-Mail: takahashi.yuki@a.mbox.nagoya-u.ac.jp

Evidence-Based Nursing Strategy for Acute Ischemic Stroke Patients Management in the Emergency Department

Ji-Eun Baek¹⁾

1) Department of Nursing, Yonsei University Wonju College of Medicine, Wonju, Korea

Introduction

Stroke, a sudden loss of neurologic function resulting from an acute disruption of blood flow, is the leading cause of long-term disability and the second leading cause of death in South Korea.

Emergency nurses are often the first health professionals to come into contact with stroke patients on arrival at hospital, but their understanding of the basic management of acute stroke is often limited[1]. An important part of acute stroke management and decreasing stroke-related mortality is preventing complications within the first 24–48 hours[2].

The purpose of this study was to establish an evidence-based nursing strategy for Emergency Department nurses to aid in understanding basic management and preventing of complications of acute ischemic stroke.

Method

This study was performed using a methodological design. Referring to four Stroke Guidelines by the Clinical Research Center For Stroke in South Korea. And the Detailed Nursing Strategy was obtained through the procedure of critical literature analysis.

Nursing Strategies: ABCDs of Acute Stroke Management

A IS FOR AIRWAYS

Obstruction or dysfunction of the airway is not uncommon in acute stroke. To ensure that the patient's airway is maintained during acute ischemic stroke, nurses should be prepared to suction, control the airway, and prevent aspiration. Patients unable to handle secretions need to be intubated to protect the airway. Initially, if the level of consciousness is decreased, but the ability to swallow is intact, the patient may only need an oral or nasal aid to maintain the airway.

Emergency department nurses are asked frequently to give medications or fluids to a stroke patient. Dysphagia is a sign of a potentially dysfunctional airway and an obvious risk for aspiration. In one study of 30 patients with acute stroke, dysphagia was noted in 57%. These patients had longer hospital stays, more complications, and a higher rate of morbidity[3]. Assessment of swallowing ability should be carried out according to institutional procedure guidelines. Following a dysphagia screening protocol, or algorithm, is recommended as standard practice in the evaluation of patients with acute stroke[4]. Should the patient choke, gag, or gasp for breath before or during screening, he or she should be kept nothing by mouth (NPO). Brain stem infarcts increase the risk that the patient will have speech and swallowing difficulty. Patients passing the swallowing screen can start nutrition early, but reassessment of swallowing is recommended because symptoms may worsen or fluctuate with time.

B IS FOR BREATHING

The penumbra consists of potentially salvageable brain cells, so it is critical that oxygen-saturated blood is provided to that area early during a stroke. As little as 2 L/min of supplemental nasal oxygen can raise oxygen saturation from 90% to more than 95%, which in turn may improve tissue oxygenation[5]. If breathing effort is inadequate the patient will require ventilatory assistance to supply sufficient oxygen to the brain. If a patient is experiencing a rapid deterioration secondary to increased intracranial pressure it may be useful to hyperventilate the patient to lower the partial pressure of carbon dioxide (pCO₂). Carbon dioxide is a potent vasodilator and lowering its concentration may aid in constriction of the vascular compartment and rapidly reduce intracranial pressure. However, excessive lowering of pCO₂ can lead to increased ischemia. The goal therefore is to lower pCO₂ to 25 mm Hg.

Breathing rate and rhythm is controlled within the brainstem and can be affected by brain swelling. Downward displacement of the brain and brain stem can be caused by edema, increased blood flow, or blood from a hemorrhage. This can lead to ventilatory pattern changes as the body tries to decrease the size of the vascular bed by blowing off carbon dioxide. Abnormal ventilatory patterns and yawning are signs of increasing pressure in the brain and on the vagus nerve(that controls respiratory muscles) as the nerve is squeezed through the foramen magnum(herniation). A stroke occurring within the arterial blood flow of the brainstem or cerebellum can also lead to respiratory pattern changes. In addition to oxygen saturation, patients should be monitored for respiratory rate and rhythm.

C IS FOR CIRCULATION

The irreversible neurologic deficits of a stroke result when blood flow to an area of the brain is reduced to approximately 25% of the normal value[6]. This loss of perfusion leads to a lack of oxygen and glucose to the cells, resulting in cell death[7]. Cells in the surrounding penumbra may still be viable[8]. Because blood flow in the penumbra is also decreased, perfusion to this ischemic area needs to be reestablished quickly. Action taken during this critical early phase of a stroke can improve or maintain circulation, which allows sufficient oxygen and glucose to reach the neurons in this vulnerable area.

In acute stroke, circulation can be hindered by the increasing mass(eg, from edema) within the skull[9]. A normal response to the lack of oxygen within the brain is a rise in blood pressure. Although rising blood pressure can increase perfusion to the brain for a short time, it may lead to edema, increased intracranial pressure, and an increase in the size of brain mass and potential herniation[10].

Rapidly lowering blood pressure in the ischemic stroke patient can lead to decreased perfusion of the already stressed brain cells. Nurses involved in stroke care need to be aware that cerebral perfusion pressure(the difference between mean arterial pressure and intracranial pressure) should be maintained at a level above 40 mm Hg to obtain adequate blood flow to brain tissue. Systolic, diastolic, and mean arterial blood pressure (MAP) will be higher than usual, as MAP below 100 mm Hg have been shown to correlate with poorer outcomes[11]. The

exception is in patients who receive rt-PA: blood pressure will need to be lowered to prevent complications from the medication during reperfusion.

Classically, in patients with impairment of cerebral circulation due to a clot, reperfusion is attempted using fibrinolytic therapy (eg, rt-PA). Nurses should know the inclusion criteria to identify patients for such therapy, as rapid evaluation for appropriateness and initiation of administration of fibrinolytic therapy is critical in preventing cell death [12]. It is important to remember that there is only a 3-hour window from onset of symptoms in which intravenous rt-PA can be given, after which the risk of bleeding increases. Nurses should also facilitate obtaining appropriate lab tests and a brain CT scan, with the highest priority placed on rapidly securing the scan. The CT scan must be completed and results obtained before a patient with suspected ischemic stroke can be treated with fibrinolytic therapy. Time is critical, and all members of the stroke care team need to expedite the process. Communication among pre-hospital personnel, ED nurses and doctors, and radiology staff can produce a door-to-CT time of just a few minutes.

D IS FOR DISABILITY AND DEXTROSE

Because stroke is a leading cause of long-term disability, nurses should be able to quickly identify the patient with stroke symptoms. Assessment tools that can quickly identify the patient at risk for stroke are the Face Arm Speech Test (FAST) and the Los Angeles Prehospital Stroke Scale (LAPSS). Either can be administered by the ED nurse in triage or by paramedics before reaching the emergency department. Patient information from these assessment tools can be re-verified by the ED nurse, physician, or critical care nurse using the more comprehensive National Institutes of Health Stroke Scale (NIHSS) [13]. The NIHSS provides a standardized baseline and consistent set of parameters that can be repeated throughout the hospital stay. Some stroke centers order a CT scan based on results of the FAST or LAPSS and then carry out the NIHSS assessment on the patient's return to the ED after imaging is complete.

Many have seen how the neurologic effects of low serum glucose (dextrose) levels can mimic the symptoms of acute stroke. A finger-stick glucose test should be done early to rule out hypoglycemia. In fact, if the glucose level was done pre-hospital and results were marginal, a repeat finger-stick test might be in order.

In the acute stroke patient, hyperglycemia is a predictor of poor outcome. Stress of a stroke has been seen to increase blood sugar even in the nondiabetic. Hyperglycemia is associated with longer hospital stays (7.2 days vs. 6 days), increased risk of bleeding into the penumbra, and an increased risk for death at 30 days [14]. The stroke patients who have their blood sugar tightly controlled early on with hourly blood glucose checks and intravenous insulin, seem to have less bleeding into the penumbra, and better outcomes.

Conclusions

Public awareness of stroke symptoms as well as rapid and effective assessment of suspected stroke is critical for optimum patient outcomes.

Rapid and accurate assessment of patients with suspected stroke by emergency nursing personnel is essential. The early stages of patient stabilization and diagnosis are critical to brain function; thus, it is imperative to assess, monitor, and correct the ABCDs during emergency stroke management. These initial steps are not only crucial for maintaining brain function, but are invaluable for salvaging penumbral cells. Moreover, the prompt recognition of stroke will lead to

quicker implementation of treatment and to effectively treating this disease as a high-priority emergency. Additionally, continued monitoring of the ABCDs can lead to early recognition of patient deterioration. Rapid intervention and preventing poststroke complications are vital when emergency nursing personnel evaluate stroke.

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Author address

E-Mail: anaba100@yonsei.ac.kr

DEVELOPMENT of a JAPANESE FUNCTIONAL HEALTH LITERACY TEST

K. Nakagami¹⁾, T. Yamauchi¹⁾

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

Introduction:

The importance of health literacy has been highlighted in relation to health prevention and the health promotion. "Health literacy is a topic that has been gaining momentum over the past few years, in the policy research agendas of many countries" [1]. Thus a major goal of the World Health Organization, Healthy People 2010, and the Joint Commission is to improve health communication quality and provide safe healthcare for patients with low health literacy [2-4].

Nutbeam [5] suggested that functional health literacy was one of the subordinate concepts of health literacy, in which there were two other conceptual configurations, interactive health literacy and critical health literacy. According to Nutbeam [5], Speros [6] and Mancuso [7], health literacy is cognitive and social skills, ability of individuals to gain access to, understand, and use health information that promote and maintain good health. Thus, functional health literacy is that person's ability to numerate, read, and comprehend basic medical terms required to function in the health care environment. Furthermore, it takes various forms such as; basic numeracy, reading and comprehension skill that allow a person to function in the health care environment; the ability to apply literacy skills to material such as prescriptions, appointment cards, medicine instructions, and directions for self-management of diseases and conditions; the abilities to understand and act on information and instructions from professionals, for example informed consent form or brochures; and patient information-seeking and shared decision-making with health professionals.

In the United States and other developed countries, evidence shows that patients with inadequate health literacy have lower adherence to medical instructions [8], lower use of preventive services [9, 10], poor understanding of one's medical condition, being into a difficult situation to seek the medical information by oneself [11], higher hospitalization [11, 12], and increased mortality [13]. In recent studies, between 40 and 50% of U.S. adults with lack of the reading and numeracy skills to fully understand the health information are substantial [14]. Kim indicated that 35% of Korean adults had low functional health literacy level, below Korean elementary school level [15]. Tokuda showed that about 36% of Japanese people had poor health knowledge [16]. Japanese literacy rates are very high, as most people are able to read easy texts as well as newspaper, but we have to keep in mind that most Japanese patients can understand what medical staff said and showed instruction papers. Now, there are likely to be certain evidence about the relationship between the inadequate health literacy and health outcomes.

This evidence has been shown by two English health literacy tests, such as Rapid Estimate of Adult Literacy in Medicine (REALM) [17] and The Test of Functional Health Literacy in Adults (TOFHLA) [18], and one Japanese health knowledge test, Japanese Health Knowledge Test [16]. REALM, was developed in 1995, and has been used most frequently. This test includes only assessing pronunciation of the medical terms correctly. This has been utilized by only

English speakers. TOFHLA was developed to measure the participants' ability to successfully complete basic numeracy and reading health literacy skills in 2001. This test includes one numeracy and two reading passages to assess comprehension of labeled prescription vials and hospital forms. This has been also utilized by only English speakers, because these questions are based on the American health care system. Thus, it is invalid to appraise the Japanese functional health literacy. Japanese health knowledge test was developed to estimate health knowledge among general public, and in identifying and characterizing Japanese with poor health knowledge, in 2010. This test is only able to measure knowledge of 15 health related vocabularies for ordinary people. In a health care setting, it is required to measure patient's abilities that focus on not only knowledge but skills relating primarily to health care settings. Therefore, there has been no scale or test to measure ability of Japanese functional health literacy yet. We will develop and examine functional health literacy test for Japanese adults.

Methods:

Study participants

The data for study will be collected from about three hundred fifty out patients, whose first language is Japanese, are age 22 years or over, can answer very easy questions such as where he/she lives at then and what day is then, are not blind and deaf. Patients younger than 22 years old will be excluded, because one of the aims of this study includes evaluating the potential relationship between the functional health literacy and the final educational attainment. Medical service personnel, such as physicians, nurses, pharmacists, hospital workers, and caregivers, will be excluded.

Development of the Japanese Functional Health Literacy Test (J-FHLT)

This study is designed for a survey to examine the construct validity and the item adequacy. First item pool of 72 was generated based on REALM, TOFHLA, J-HKT, and empirical referents, such as Japanese medical system, health education or information materials from physicians or nurses, prescriptions or materials for medicine, and information documents of X-ray examination or endoscopic examination.

The first item pool was examined by an advisory panel of nine nursing students in the first field test, and it was refined and reduced items to 34 items.

The second item pool consisted of three scales: eight numeracy items, fifteen reading items, and eleven comprehension items. Content validity for this second item pool was tested by ten content experts panel, such as two doctors, two medical researchers, two nurses, two pharmacists, two educational researchers. These experts were given a rating form with functional health literacy definition and items. They were required to review each item for validity, difficulty, and readability with a 4-point scale (from 1 = no valid to 4 = very valid). At the present stage, we calculate the index of content validity (CVI). CVI is classified according to Lynn's criteria [19] that are related as over 3 by the experts and the median over 3.

Data collection

This study also collects demographic and socioeconomic data. Demographic data is comprised of age, sex, annual income, final educational attainment, and occupation.

Furthermore, we measure three questions, translated into Japanese, from the Health Literacy Screening Questions (HLSQ) [20] and J-HKT for calculating criterion-related validity. Three questions of the HLSQ, “how often do you have someone help you read hospital materials?”, “how confident are you filling out medical forms by yourself?”, and “how often do you have problems learning about your medical condition because of difficulty understanding written information?” were each effective 5-point Likert screening tests for inadequate health literacy in the U.S. patients.

Planning schedule: Fig. 1

Frist of all, we are trying to refine the second item pool based on CVI and the median.

Second, we will conduct the second field test with about fifteen out-patients and refining the item pool again.

Third, the second item pool based on the field test will be generated.

Forth, the second item pool will be tested with about three hundred fifty out-patients as third field test.

Fifth, we will go over factor analysis and calculate internal consistency reliability (Cronbach's alpha) and criterion-related validity (validity coefficient) from third field test data. We also use the Rasch analysis to evaluate the adequacy of items. Taking advantage of Rasch analysis, we calculate item difficulty, item-fit indices, and person separation reliability in order to exhibit the degree to which individual items clarify the unidimensionality of the construct “health literacy.”

Sixth, for the purpose of taking a final check, we will recalculate internal consistency reliability (Cronbach's alpha) and criterion-related validity (validity coefficient) by use of data from third field test.

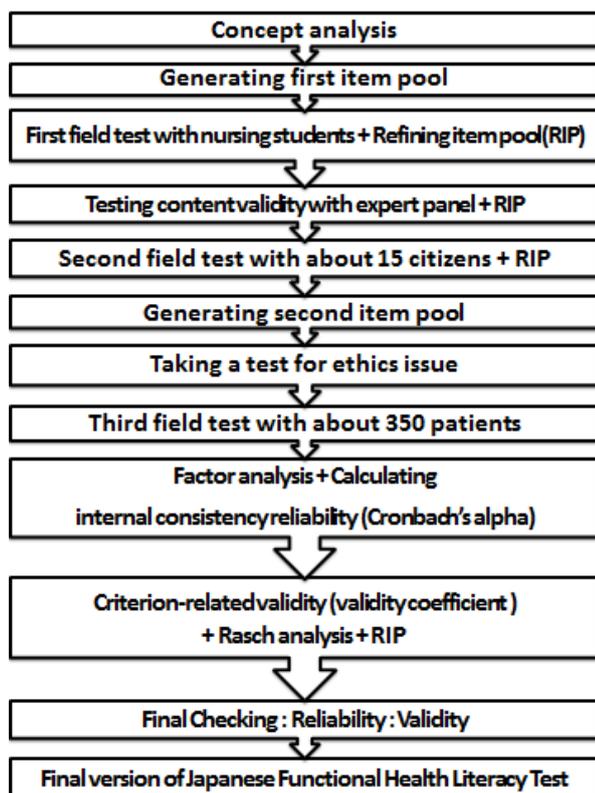


Fig. 1 schedule for the study.

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Author address E-Mail: pellakonk@gmail.com

Related Factors of Self-Efficacy in Cancer Outpatients Receiving Chemotherapy in the National University Hospital

A. Hayashi¹⁾, S. Ando²⁾

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

Introduction

After the medical fee for outpatient cancer chemotherapy was accepted in 2002, the place of chemotherapy has been shifting from hospitalization to outpatient care. Owing to the outpatient chemotherapy, patients can spend daily life receiving chemotherapy, and it contributes to improving their QOL. On the other hand, good self-caring behavior is essential to improve the QOL, and to display good self-caring behavior, patients need to possess high self-efficacy.

Purpose

This study aimed to identify by a survey questionnaire the factors related to self-efficacy in cancer outpatients receiving chemotherapy, and to discuss the appropriate nursing care for them.

Methods

Subjects: The subjects consisted of 169 cancer outpatients receiving chemotherapy at the national university hospital's chemotherapy center from August to September in 2009. The study was approved by the Nagoya University's ethical committee and hospital's ethical committee, and informed consent was obtained from each patient.

Questionnaire: The questionnaire covered patient backgrounds, their needs in terms of home care, a Screening Questionnaire (physical symptoms, the Severity Distress Thermometer, overall quality of life) and the Self-Efficacy Scale for Advanced Cancer (SEAC). SEAC consisted of three subscales; Affect Regulation Efficacy (ARE), Symptom Coping Efficacy (SCE) and ADL Efficacy (ADE).

Data analysis: The relation between self-efficacy and patient backgrounds and their needs was analyzed using the following statistical analysis: Mann-Whitney's U test, Kruskal-Wallis test with Bonferroni correction for multiple comparisons. And relation between self-efficacy and physical symptoms, QOL/ psychological distress was analyzed using the following statistical analysis: Spearman rank correlation coefficient, multiple linear regression analysis. PASW version 17.0 for Windows was applied for data analysis. Significance was set at $P < 0.05$.

Results and discussion

The average age of the participants was 59.2 years old, and 43.2% of the participants were males, 56.8% were females. On Performance Status, PS0 was 34.3%, PS1 was 56.8%. On primary site, 30.2% of participants had breast cancer, 23.1% had gallbladder or pancreatic cancer, 18.9% had colorectal cancer.

The relation between patient backgrounds and self-efficacy: The score of SEAC was significantly lower among patients with the following backgrounds: under 40 years old, jobless, solitary life, PS1 or more, no hobby, no adviser, and difficulty in consulting doctors or nurses. In detail, the score of ARE and SCE were significantly lower among the patients under 40 years old, and the score of ADE was significantly

lower among jobless patients and patients having solitary life. The score of all three subscales was significantly lower among the patients who do not have hobby, the outpatients receiving chemotherapy for 1-2 years and the patients whose PS is more than 1. And the score of ARE and ADE were significantly lower among the patients with no adviser or difficulty in consulting doctors or nurses. The score of SCE was significantly lower, only among the patients with difficulty in consulting nurses. These findings suggest that nurses take an important role in the symptom management for the patient. They also suggested that we must support the outpatients in consideration of their individual backgrounds and provide the environment where outpatients are easy to consult.

Relation between their needs in terms of home care and self-efficacy: The score of all three subscales was significantly lower among the patients having troubles with adverse effect management. In detail, the score of SCE and ADE were significantly lower among the patients who cannot cope with the aggravation of general condition due to severe symptom and those who cannot go out alone. And the score of ARE was significantly lower among the patients who cannot eat what they want. And also, the score of all three subscales was significantly lower among the patients who do not have an adviser and those who cannot express their feeling well. The score of ADE was significantly lower among the patients who feel anxious about a relationship with the doctor. As a result, these findings suggest the necessity to support the patients having these factors and their family in early stage.

Relation between physical symptom and self-efficacy: The severity of the following physical symptoms significantly affected the SEAC score: insomnia, inappetence, dyspnea, and fatigue. In detail, the score of ARE was significantly affected by insomnia and fatigue. The score of SCE was significantly affected by appetite loss and dyspnea. The score of ADE was significantly affected by appetite loss and insomnia. As a result, these findings suggest that the nursing system to improve the symptom management and self-caring behavior should be established.

Relation between QOL/ Psychological distress and self-efficacy: The scores of the distress thermometer were significantly affected by ARE and ADE, and the scores of QOL were also significantly affected by ADE and ARE. In addition, a significant negative correlation was seen between the distress thermometer and QOL. The nursing care which enhances self-efficacy comprehensively can be the essential for the cancer outpatients (Figure 1).

Conclusions

We identified the following factors of self-efficacy in cancer outpatients receiving chemotherapy: patient backgrounds, physical symptoms, patient's needs in terms of home care.

For improving their self-efficacy, it is significant to understand patient's background and their needs sufficiently and to support them individually. And we must make an effort to

palliate the following symptoms especially: insomnia, fatigue, appetite loss, dyspnea.

To generalize these findings, it is necessary to investigate a longitudinal study in the future.

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Author address

E-Mail: akiko.H.12@gmail.com

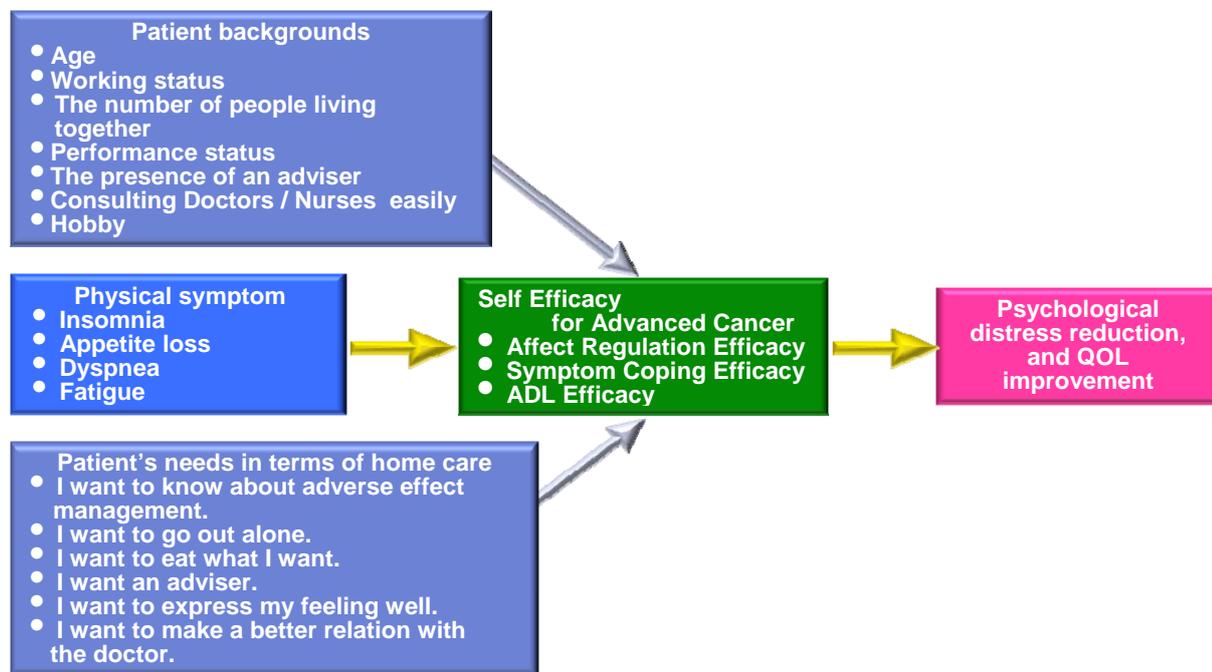


Figure 1 Related Factors of Self-Efficacy in Cancer Outpatients Receiving Chemotherapy