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## Korean Translation of the AANCART Questionnaire

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### Abstract

The project described herein is the preparation of a culturally and linguistically appropriate Korean version of a core questionnaire developed by the Asian American Network for Cancer Awareness, Research and Training. This version will assist in the design of interventions related to cancer for the Korean American population in the future. Following an extensive literature search, procedures recommended by various studies were incorporated into the translation process. Two final Korean versions were pilot tested to evaluate which way of asking a particular question was better, as perceived by respondents. The findings from this project helped enhance the linguistic and cultural competencies in both instruments. A cognitive walk-through interview achieved by probing after each question led respondents to offer feedback about the questions, resulting in a further review and revision of the questionnaire. The next step will be to administer the final Korean version of the two instruments to a large random sample.

### Introduction

Korean Americans are the fourth largest group of Asian Americans in the United States (U.S. Census Bureau 2000). According to the census data, Koreans made up 0.4% of the U.S. population in 2000, including 279,568 more Korean Americans than in 1990. Among Korean Americans who completed the 1990 census, approximately 72.6% were born in Korea, immigrating to the United States later in their lives (U.S. Census Bureau 1990). In 1997 and 1998, 14,200 and 14,300 Koreans, respectively, immigrated to the United States (U.S. Census Bureau 2000). In the 1990 census, Korean American respondents reported that about 51.6% of Korean Americans who were aged 5 years and older did not speak English very well. Therefore, more than half the Korean Americans who live in the United States are likely to feel more comfortable speaking Korean than English.

In spite of the increase in the numbers of Korean Americans and the likelihood that half of them are not fluent in English, very few studies have addressed the validity of cross-culturally adapted questionnaires in Korean. Without the incorporation of a Korean version of health-related questionnaires, it would be very difficult to gather accurate information on this population, which includes both native English-speaking and nonnative English-speaking Korean Americans. Therefore, questionnaires should be developed in both English and Korean before any quantitative data on Korean Americans are gathered.

The purpose of the project described herein is to prepare a Korean version of a core questionnaire developed by the Asian American Network for Cancer Awareness, Research and Training (AANCART). The Korean version will assist in the design of interventions related to cancer for the Korean American population in the future. In the translation process, the core questions should be tested for cultural and linguistic appropriateness, validity, and reliability. In this project, we tested only cultural and linguistic appropriateness.

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## Literature Review

Questionnaires are often used in research settings because they are economical, easy to use, and the least time consuming of available methods (Lee et al. 1999). Administering questionnaires is not always easy and simple, however. The increasing diversity of the U.S. population raises methodological concerns in study design, such as cultural sensitivity. In order to have a good representation of the U.S. population, researchers must consider cultural and linguistic appropriateness. Translation of questionnaires is one of many ways to incorporate cultural diversity in cross-cultural studies.

Translating questionnaires is also not a simple matter, however. It cannot be assumed that the tested validity and reliability of an English version of a questionnaire will apply to translated versions. Literal translation, a word-for-word translation, will cause many errors in cross-cultural studies because the meaning of an original question may be slightly changed (Streiner and Norman 1995).

Before undertaking the translation of the core AANCART questionnaire, we carefully reviewed the literature with respect to the process of developing accurate and verifiable translations, as well as methods of administration. We also examined studies addressing the cultural adaptation of questionnaires specifically into the Korean language. Finally, we reviewed several questionnaire-based cancer studies targeting Korean Americans in order to evaluate whether researchers made an attempt to increase cultural sensitivity in their study designs. A good representation of cancer-related topics was chosen: breast cancer screening, cervical cancer screening, nutritional status relating to cancer risk, colorectal cancer screening, and childhood cancer. Most of the studies focused on cancer screening knowledge and behavior. A few of our findings as related to the development of questionnaires are described briefly below. Details of these findings and the questionnaire-based cancer studies targeting Korean Americans are available on request from the author (julianasue@hotmail.com); the references themselves are included in the References and Bibliography.

From our research, we conclude that a good translation of a medical questionnaire requires forward translation, back translation, and validation (Streiner and Norman 1995). As an example, Ruperto et al. (2001) describes the methodologies used by the Paediatric Rheumatology International Trials Organization in developing and validating translated versions of the Childhood Health Assessment Questionnaire and the Child Health Questionnaire in 32 countries. The translation procedure was divided into two phases called “cross-cultural adaptation” and “validation.” During the cross-cultural adaptation, one to three bilingual personnel translated a questionnaire from English to another language, and agreement was reached on the first translated version. Then, another one to three bilingual personnel translated the questionnaire from the other language back to English, and the second translated version was agreed on. The second version was probed to assess the literal understanding level, by using a small sample from the target population. After the cross-cultural adaptation phase, researchers began the validation phase, in which data were collected from a larger sample, followed by testing of validity and reliability to ensure that the translated version held the same scientific validation as the original questionnaires.

For cancer prevention and cancer control, understanding the demographic and socioeconomic characteristics of the target population will be a fundamental step in the design of culturally appropriate cancer intervention programs in the United States. Three studies (Maxwell et al. 2000, Calle et al. 1993, Mandelblatt et al. 1996) demonstrated that demographic and socioeconomic factors are interrelated with cancer screening behaviors. Therefore, in order to develop appropriate cancer prevention and intervention programs, researchers should understand the demographic and socioeconomic characteristics of the specific target

population. Questionnaires should be developed by using cultural-adaptation procedures to produce culturally and linguistically appropriate instruments for assessing demographic and socioeconomic characteristics among the different ethnic groups in the United States.

## Methods

The English version of the core questionnaire was developed by incorporating question items suggested by the regional investigators of AANCART. These items were intended to measure the following constructs: gender, age, ethnicity, country of birth, years in the United States, marital status, education, income, health insurance, access to care, general health, and English language proficiency. Through pilot testing, the original core questionnaire was revised to enhance cultural sensitivity. After many revisions, the AANCART biostatistics team produced two core questionnaire instruments, A and B (reproduced in Appendix A), each with the same questions posed in different formats or wording to determine which version was more effective in eliciting accurate responses. Instrument A contained the originally suggested question items, while B contained the alternative formats or wording. Findings based on the two instruments would be used to assist in drawing up the final core questionnaire.

In addition, potential probes to be used in a cognitive walk-through interview were developed, soliciting recommendations on how best to obtain specific kinds of information. For example, question 2 in instrument A asks for the respondent's age "in Western years." In instrument B, question 2 asks for age without referring to Western years; if the person doesn't know or want to reveal an exact age, a range of ages is offered. The probes for both versions, though worded slightly differently according to the actual wording of the question, were designed to elicit whether respondents would be more comfortable reporting a specific age or an age within a range. Both probes also asked, "Do you need to make a distinction between Western years and years according to some other calendar (such as the Chinese or Lunar calendar)?" [Note: Copies of the probes are available on request from the author.]

The core questionnaire and probes were translated into Chinese, English, Hindi, and Korean. AANCART graduate research assistants are in the process of conducting pilot tests on the cultural competency of the questionnaires. The project that I describe below represents the pilot testing for the cultural competency of the core questionnaires translated into Korean.

## Translation Procedure

A Korean American student in the public health program at Ohio State University (OSU) translated both of the core questionnaires and the potential probes into Korean. Then, three other Korean bilingual students from the university, together with the translator, reviewed the translations, making any modifications that seemed necessary to improve the comprehensibility and cultural sensitivity. After all four agreed on the modified translated instruments and probes, another Korean American student from OSU, who was a native speaker and bilingual, back translated the questionnaire and probes from Korean to English; he had not previously seen any of the materials. Finally, the back translation was compared to the original core questionnaires and probes to make sure that the translations of all items were close to the original ones. As no discrepancies were found between the back translations and the original instruments and probes, the Korean versions of instruments A and B and probes were made final. [Note: Copies of the back translations and final versions of the instruments are available on request from the author.]

## Pilot Testing

Forty-eight Koreans, recruited from the Korean Catholic Church in Columbus, Ohio, participated in our pilot test. The participants were randomly divided into two groups, with

instrument A administered to half of them and instrument B, to the other half. Each group of 24 participants was divided into two subgroups. Each instrument was administered to one subgroup of 12 participants by telephone and to the other subgroup by face-to-face interview. During the interviews, the interviewer followed each question with a probe to obtain feedback about the question from participants.

### Data Collection

All data were collected in Korean, from which, suggestions were made for the final Korean version of the core questionnaire.

## Results

### Translation and Back Translation

The original core instruments A and B, in English, contained the same construct but displayed two different ways of asking the same construct. Many questions in the two instruments differed in an effort to use different words or to change the question from a closed format to an open-ended question. During the process of translation into Korean, many problems appeared that were revised in instrument B with only a change in wording while maintaining the same construct. For example, “Are you covered by health insurance or some other kind of health plan?” in item 13 of instrument B was modified several times so that the translated question was different from “Do you have any other health insurance?” in item 15 of instrument A. The reason for the difficulties experienced in translating these items was that “Are you covered by” is not linguistically different from “Do you have” in Korean. For similar reasons, question item 11 in both instruments also required many attempts to render them different in a Korean linguistic perspective because both “[How many people are] living off your household income?” and “[How many people do you] share income with in your household?” would usually be translated into “[How many people do you] support with your household income” in Korean. The translations of these two phrases were modified several times so that it would not seem awkward asking the question in two different ways.

Some cultural discrepancies were found between the original question items and the translated versions. The terms “ethnicity” and “a traditional healer/provider” had to be translated into Korean with a slightly different perspective from English. Even though there is a Korean word for ethnicity, it does not convey the same meaning as in English; rather, it has a meaning more like the word “race” in English. The Korean word for ethnicity does not have the connotation of a cultural concept. Thus, the word “ethnicity” was translated into a Korean word that implies a broader concept of the word “race.” Likewise, a cultural discrepancy was recognized with the term “a traditional healer/provider.” The term was translated into “an herbalist” in Korean because the traditional oriental medicine is a commonly practiced alternative medicine in Korea. Moreover, the herbalist in Korea practices not only prescription herbal medicine but acupuncture as well. In addition, the phrase, “Would you mind” used in question 2 was not necessary in Korean. The Korean language has a different conjugation system for verbs that often gives the conjugated verb the power to make a sentence either very formal or very informal. For that reason, the phrase, “Would you mind” was eliminated in the Korean version and replaced with the formal verb form.

Some linguistic limitations were experienced during the translation process. Question item 20 in instrument A was intended to ask the respondent’s perception of his or her health. The question utilized the response choices of “excellent,” “very good,” “good,” “fair,” and “poor.” However, no Korean word is appropriate for the scale designation “excellent,” so the Korean word for “perfect” in English was used instead.

Several of the probes developed along with the core questionnaires were too wordy to be translated into Korean. An attempt was made to translate the probes for question items 7 and 11 into Korean by incorporating as many words as possible, but the translated probes turned out to be very confusing and awkward. As a result, the main points were almost lost. The Korean versions of the probes were therefore shortened but still maintained the same content. The back-translation procedure was completed in order to evaluate how accurate the translated versions of the instruments were compared to the original versions. No inconsistencies were found. The back translation confirmed the content validity of the translated core questionnaire instruments.

### Pilot Testing

Forty-eight participants responded to the core questionnaire instruments, half to instrument A and half to instrument B. The majority of the respondents did not experience difficulty in answering the questions on either instrument. Nevertheless, several respondents did not understand some portions of the translated question items. For question 2 in instrument B, the phrase, "Would you mind" was incorporated into the translated version. The majority of the respondents answered it as if it were a dichotomous yes-or-no question. In question 3 of instruments A and B, as expected, some respondents reported that they were Asians instead of answering with the term Korean or Korean American. For question item 9 in both instruments, some respondents made the assumption that the question was asking about the greater part of their education instead of all the education that they had received at the time of the interview. Moreover, in both instruments, questions concerning household income were more problematic. Several respondents asked for a clarification of whether they should be included in the number of people supported in the household. For question items 13 and 14, some respondents were not familiar with the terms "Medicare" and "Medicaid," so the interviewer had to clarify them.

The demographic characteristics of the respondents for instruments A and B were similar in many ways (see Table I). Almost all the respondents were Korean-born, and they all identified themselves as Korean except for two who identified themselves as Korean American and Japanese Korean. The sample groups for both instruments included more female respondents than male respondents, reflecting their disproportionate representation in the Korean Catholic Church. The two groups had a similar distribution for marital status. For both groups, about half the respondents had received education only in Korea, while the other half had received education in both Korea and the United States. A large majority of respondents in both groups had received more than 12 years of education. The age distribution, from 20 to 85 years, was very different for the two instruments, with respondents for instrument B having a mean age 5 years older than the respondents of instrument A.

Table 2 provides information on income levels and health-care access. About half the respondents in both groups reported that they did not share income with other people in their households. This could be predicted from the responses concerning marital status because there were 9 and 8 single respondents out of 24 for instruments A and B, respectively. The majority of the respondents for instruments A and B were living above the poverty level. This finding was also expected because of the high education levels reported. Six respondents from instrument A and four from instrument B reported that they did not have any type of health insurance. Among those who did have health insurance, all except one had private insurance from a school or a job.

### Discussion and Recommendations

The project examined the cultural and linguistic appropriateness of the Korean version of the core questionnaire instruments developed by AANCART. The procedures recommended by

various studies were incorporated into the translation procedures. During the process of translation, one individual translated the instruments. Three others, together with the translator, reviewed and resolved differences in Korean wording for each question item and back translated to make sure that the content of the translated instruments was close to the original. After the initial completion of the forward translation, the reviewers and translator disagreed frequently on wordings in the question items relating to ethnicity, health insurance, income, and general health, but once they all agreed on one translated Korean version, the back translation was found to be satisfactory.

The final Korean versions of instruments A and B were pilot tested to evaluate which way of asking a particular question was better, as perceived by respondents. All the respondents answered every item, but, as instructed by the interviewer asked for clarification on questions that they did not understand. Clarifications were requested for question items 11a, 11b, 13, and 14 of instrument A and question item 11 of instrument B. For question items 11a in instrument A and 11 in instrument B, which measure the same construct, several respondents wanted clarification as to whether they should be included in the household number in their responses. It was suggested that a phrase such as “including yourself should be added to the question in items 11a and 11. The respondents, in general, spent a longer time answering question item 11b of instrument A; the question was written in such a way that even the interviewer became confused. It was suggested that the question should either be worded differently or be eliminated from the core questionnaire. In question items 13 and 14, no problems were associated with the translation, but a good portion of the respondents did not know what Medicare and Medicaid were; the interviewer clarified the meaning on request. For that reason, the project director should make sure that the interviewers understand Medicare and Medicaid when using this questionnaire.

Some other translated question items did not obtain the responses that had been intended. Question items 2, 3, and 9 in both instruments were clear enough that the respondents did not report having problems in answering them, but some of the responses elicited during the interviews were unexpected. Question item 2 in both instruments was intended to obtain the age of the respondent, but when the interviewer used the phrase “Would you mind” in asking the question, respondents were more likely to answer “yes” or “no” because the question was not direct. It was suggested that question item 2 be phrased more directly, e.g., “How old are you?” instead of “Would you mind if I asked how old you are, in Western years?” The translation of question item 3, “What is your ethnicity?,” was linguistically appropriate, but the Korean word for “ethnicity” was not culturally perceived as having the same meaning as in English. Several respondents felt awkward about being asked their ethnicity and reported that they were Asian instead of identifying themselves more specifically as Korean or Korean American. Therefore, it was suggested that the question should be asked differently, for example, “Are you Korean or Korean American?” In this way, the respondents will know the appropriate response choices and will be more likely to answer accordingly. Question item 9, pertaining to where respondents received their education, posed a slightly different problem: Respondents understood the question correctly, but they applied their own assumptions and tended to answer with the country where most of their education had taken place instead of listing all the countries where they had received education. The error found in the question item was not associated with the culture, but, rather, with the clarity of the question. Thus, it was suggested that adding a phrase such as “list all countries where you have received education” would help.

Some questions needed to be redesigned to incorporate cultural sensitivity for Korean American respondents. Question item 8 was designed to gather information on the individual’s marital status. The question begins “Are you?” and then follows with the response choices in this order: “Currently married,” “Living with a partner (or living as married),” “Widowed,”

“Separated,” “Divorced,” “Single,” and “Refused.” In this item, the arrangement of the response choices can be a problem because Koreans are reluctant to select “Living with a partner” or “Separated” because, in general, Korean society does not approve of those living situations. Therefore, it was suggested that the response scale should be rearranged in the order of more chronological life events: “Single,” “Currently married,” “Divorced,” “Widowed,” and so forth. Another example of cultural insensitivity was shown in the response choices of the scale in question item 20 of instrument A. The five choices given for measuring general health were difficult to adapt to Korean. Because the word “excellent” had to be translated into the word “perfect,” the question no longer measured the same construct as the English version. Therefore, the response choices was changed to “very healthy,” “healthy,” “average,” “bad,” “very bad,” and “don’t know.”

The findings from this project helped enhance the linguistic and cultural competencies in instruments A and B. The cognitive walk-through interview achieved by probing after each question led respondents to offer feedback about the questions. Based on the feedback and responses, the questions in instruments A and B were carefully reviewed and revised once more. The next step will be to administer the final Korean version of the two instruments to a large random sample. The sample should be selected from an unfamiliar community setting because a few participants in the pilot study did not feel comfortable responding to some of the sensitive questions. Since the interviewer was involved in the same church group from which the respondents were drawn, participants might have felt reluctant to expose private issues. For that reason, a future study should randomly select subjects from a different community setting, in which the interviewer is not directly associated with community members. The random sample should be a good mixture of age and gender. With the large random sample, reliability and validity will be tested to complete the Korean version of the questionnaire.

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## APPENDIX A

### AANCART Core Questionnaire

#### Instrument A

1. Are you male or female?
  - a. Male
  - b. Female
  - c. Refused
2. Would you mind if I asked how old you are, in Western years? \_\_\_\_\_
3. What is your ethnicity? \_\_\_\_\_  
(Interviewer would then code this open-ended response using the Census codes.)
4. In what country were you born? \_\_\_\_\_
5. In what country was your mother born? \_\_\_\_\_
6. In what country was your father born? \_\_\_\_\_
7. In what year did you come to the U.S.?
  - a. Always lived in U.S.
  - b. Year \_\_\_\_\_
8. Are you?
  - a. Currently married
  - b. Living with partner (or living as married)
  - c. Widowed

- d. Separated
  - e. Divorced
  - f. Single (that is, never been married and not living with a partner)
  - g. Refused
9. In which country did you receive your education? \_\_\_\_\_
10. What is the highest level of education that you have completed?
- a. No formal education
  - b. Completed elementary school
  - c. Completed junior high school
  - d. High school graduate
  - e. College graduate
  - f. Post graduate/professional school
  - g. Other, specify \_\_\_\_\_
  - h. Refused
11. a. How many people do you share income with in your household (including any children)? \_\_\_\_\_
- b. Would you please tell me if during 2000 the total combined income of these (number of people sharing income) people was MORE or LESS than [yearly total from chart] per year?
- a. More
  - b. Less
  - c. Don't know
  - d. Refused

Number in Household	Yearly Income(s)
1	8,350.00
2	11,250.00
3	14,150.00
4	17,050.00
5	19,950.00
6	22,850.00
7	25,750.00
8	28,650.00

## Demographic Characteristics of Respondents

Table 1

Characteristics	Number of Respondents (%)	
	Instrument A (n=24)	Instrument B (n=24)
Age (yr)		45.4
Mean	40	
Gender		
Male	5(21)	9 (37.5)
Female	19(79)	15 (62.5)
Ethnicity		
Korean	22 (92)	24 (100)
Korean American	1 (4)	0 (0)
Other*	1 (4)	0 (0)
Country of Birth		
Self		
Korea	23 (96)	24 (100)
Other*	1 (4)	0 (0)
Father		
Korea	23 (96)	24 (100)
Other*	1 (4)	0 (0)
Mother		
Korea	23 (96)	24 (100)
Other*	1 (4)	0 (0)
Years in the U.S.		
<1	4(17)	2 (8)
1 to 5	9 (37)	9 (37.5)
6 to 10	4(17)	3 (12.5)
>10	7 (29)	10 (42)
Marital Status		
Single	9 (37.5)	8 (33)
Married	12(50)	14 (58)
Divorced/separated	0(0)	0 (0)
Widowed	3(12.5)	2 (8)
Country of Education		
Korea only	11 (46)	11 (46)
Korea & U.S.	11 (46)	12 (50)
Korea & other*	1 (4)	0 (0)
Other*	1 (4)	1 (4)
Years of Education		
=6	1 (4)	1 (4)
7 to 9	1 (4)	0 (0)
10 to 12	7 (29)	2 (8)
13 to 16	5 (21)	7 (29)
>16	10(42)	14 (58)

\* Ethnicity is other than Korean or Korean American.

\* Country of birth is other than Korea.

\* Country of education: Korea &amp; other = Korea &amp; other country; Other = Other than Korea.

**Table 2**  
Income and Health-Care Access of Respondents.

Variable	Number of Respondents (%)	
	Instrument A (n=24)	Instrument B (n=24)
Number of People Sharing Income *		
1	10 (42)	12 (50)
2	7 (29)	6 (25)
3	0 (0)	2 (8)
>=4	7 (29)	4 (17)
Poverty Level		
Below poverty level	3 (12.5)	2 (8)
Above poverty level	18 (75)	20 (83)
Do not know	3 (12.5)	1 (4)
Refused	0 (0)	1 (4)
Health Insurance		
Yes	18 (75)	20 (83)
No	6 (25)	4 (17)
Types of Health Insurance		
Government insurance	0 (0)	1 (5)
Private insurance	18 (100)	19 (95)
Place for Health Care		
Western doctor's office	14 (58)	5 (21)
Other provider's office/home	0 (0)	0 (0)
Community clinic/health center	3 (12.5)	7 (29)
Hospital clinic	3 (12.5)	6 (25)
Hospital ER	0 (0)	0 (0)
No single place	1 (4)	0 (0)
No place to go	1 (4)	6 (25)

\* Including the respondent.