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Acculturation and Self-rated Health among Foreign Women in Korea

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The main purpose of this paper is to examine the relationship between acculturation and health among the growing female foreign population in Korea. To capture different aspects of acculturation and their association with self-rated health among foreign women, three measures of acculturation, that is, Korean speaking proficiency, age at arrival, and length of residency were used. This paper also adopted social support, life satisfaction, and discrimination variables as covariates and examined other socioeconomic variables and discrimination as effect modifiers in its examination of the association between acculturation and self-rated health. Micro-data from the 2009 Korean National Multi-Cultural Family Survey was analyzed. Results of *chi-square* tests, *t* tests and multivariate-adjusted logistic regression analysis showed that greater acculturation in terms of Korean language proficiency is associated with better health. It is interpreted that better language capability increases access to health related information. It was also found that increased age of arrival of foreign women and shorter length of residency in Korea tend to be associated with better self-rated health. Analysis of interaction revealed that level of education, income, and discrimination are significant effect modifiers for the association between Korean speaking proficiency and self-rated health status. For foreign women with higher education and income and those with an experience of being discriminated against, the gap in self-reported health by Korean speaking proficiency tends to be larger. Plausible explanations and implications of these findings are discussed in this paper.

Keywords: Acculturation, Measures of Acculturation, Self-rated Health, Health Status of Immigrants, Language Proficiency, Foreign Women in Korea

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Ⅰ. Introduction

Since the first influx of foreigners to Korea in the late 1980s, the number of foreigners residing in South Korea has exceeded 1.5 million for the first time with about three out of every 100 individuals in the Korean population being of foreign origin. Korea reached the mark of having just over one million foreign residents in 2007, but the number increased by more than half a million people in 2013 (Kim, 2013b: Kim, 2014; MOJ, 2013; Kim and Ryu, 2013). In terms of composition of the nationality, more than half of the foreign population is Chinese (54.6 %) followed by Vietnamese (9.9 %), Americans (6.0 %), Filipinos (3.4%), Indonesian (2.7%), Thai (2.3%), Japanese (2.0%), Mongolian (1.9%), and other (17.3%) (MOSPA, 2013). When examining purpose of immigration, migrant workers are the largest group, followed by immigrants married to Korean spouses (85.7% of foreign spouses being women), and finally foreign students who came to Korea to study (MOSPA, 2013). According to the marriage registration data, 338,256 Korean men have registered marriages with foreign women during the period 1990-2012. The number of marriages of Korean men with foreign women rose from 619 in 1990 to 12,647 in 1996 and further jumped to 30,719 in 2005. Among the 327,073 marriages registered in 2012, marriages between Korean men and foreign women constituted 6.3%, while marriages between Korean women and foreign men accounted for 2.4% (Statistics Korea, 2013; Kim, 2013a).

When immigrants arrive in a host country, they often undergo an experience of acculturation as they become exposed to their host country's culture (Okafor et al., 2013). Acculturation has broadly been defined as "culture change" and was more explicitly defined by Redfield et al. (1936) as "those phenomena which result when groups of individuals having different cultures come in to continuous first-hand contact, with subsequent changes in the original cultural patterns of either or both groups." There have been mixed opinions in the literature regarding the relationship

between acculturation and health outcomes among immigrants. Particularly, more acculturated individuals were typically more likely to have better health outcomes and health related behaviors (e.g., less receipt of preventive services) due to positive influence from being more acculturated (Solis et al., 1990; Shen and Takeuchi, 2001; Lee et al., 2000; Lee et al., 2013b; Abraido-Lanza et al., 2005; Brown et al., 2006).

In the previous literature, self-rated health, has been identified as being an independent predictor of mortality in previous studies (Idler and Benyamini, 1997). With respect to acculturation and self-rated health, higher American cultural scores have been found to be associated with better self-reported health among Korean American men (Lee et al., 2000; Lee et al., 2013a; Lee et al., 2013c).

Another study examining acculturation and health status among Chinese, Korean, and Vietnamese Americans in the Washington D.C. Metropolitan Area found that acculturated individuals were significantly more likely to report good health than those who were less acculturated (Lee et al., 2013a). This association was found across multiple acculturation measures, including the Suinn-Lew Asian Self-Identity Acculturation (SL-ASIA) scale, clusters based on responses to the SL-ASIA scale, language preference, length of stay, age at arrival in the United Sates and self-identity (Lee et al., 2013a). For the acculturation clusters, the participants were categorized into three groups: American, Bicultural, and Asian. Based on these clusters, those in the American cluster were found to be 3.8 times (95% CI: 2.2-6.6) more likely and those in the Bicultural cluster were 1.7 times more likely (95% CI: 1.1-2.4) to report good health as compared to those in the Asian cluster (Lee et al., 2013a).

Previous studies have found greater language proficiency to be associated with improved self-rated health (Okafor et al., 2013; Patel et al., 2003). For instance, African American immigrants with greater English proficiency were found to have better self-rated health. Those who spoke English well had about 37% decreased odds (OR=0.63; 95% CI: 0.37-1.07), while those who spoke English very well had 72% (OR=0.28; 95% CI: 0.16-0.50) decreased odds of having good/fair/poor self-rated

health as compared to excellent/very good self-rated health. In a study of multi-ethnic immigrants in the U.S., those with greater English proficiency were found to have increased odds of reporting excellent current health (Akresh and Frank, 2008). Those who could speak English well or very well had about 68% decreased odds of having poor health (OR=0.32; 95% CI: 0.14-0.49). In addition, immigrants who speak English with their friends had about 80% decreased odds of having poor self-rated health (OR=0.20; 95% CI: 0.03-0.37). In a similar vein, it was also found in Korea that foreign wives with greater Korean speaking proficiency tend to adapt themselves more successfully to their married lives, which in turn, leads to higher satisfaction with their marriage and better mental health (Lee, 2009; Jun et al., 2009).

Previous studies examining age at arrival and self-rated health have also supported an association between greater acculturation and better self-rated health. A study of African immigrants in the U.S. found that as age at immigration increased, individuals had poorer self-rated health (Okafor et al., 2013). Specifically, those who had arrived between the ages of 21 to 30 had 1.98 times the odds (OR=1.98; 95% CI: 0.97-4.03), those who arrived between 31 to 40 had 1.75 times the odds (OR=1.75; 95% CI: 0.81-3.79), and those older than 41 years had 4.39 times the odds (OR=4.39; 95% CI: 1.90-10.15) of having poor self-rated health compared to those who had arrived before they were 20 years old. Moreover, data from the Swedish Annual Level of Living Survey (SALLS) found that the odds of poor self-rated health increased with increasing age at migration to Sweden among first-generation immigrants (Leao, 2009). For instance, those who had arrived from ages 0-6 had 9% decreased odds (OR=0.91; 95% CI: 0.62-1.34), those who arrived from 7-16 years had 69% increased odds (OR=1.69; 95% CI: 1.23-2.32), and those who arrived at greater than age 16 had 84% increased odds (OR=1.84; 95% CI: 1.45-2.33) of having poor self-rated health as compared to Swedish natives (Leao, 2009).

However, the relationship between length of residency and self-rated health is unclear (Finch and Vega, 2003; Leao et al., 2009; Okafor et al., 2013). In the

previously described Swedish study, there was no clear pattern in the associations between length of residency and self-rated health other than immigrants having poorer health as compared to Swedish natives. Those who had resided in Sweden 0-7 years had 1.46 times the odds (OR=1.46; 95% CI: 1.10-1.94), those residing for 8-14 years had 2.02 times the odds (OR=2.02; 95% CI: 1.56-2.61), and those residing 15 or more years had 1.28 times the odds of having poor health (OR=1.28; 95 % CI: 0.96-1.72) as compared to Swedish natives (Leao et al., 2009). In another study examining Mexican immigrants in California, a positive association was observed between length of residency and self-rated health but it was of only marginal significance (Finch and Vega, 2003). Those who resided in the U.S. for more than 10 years had 38% increased odds of having poor self-rated health (OR=1.38; 95% CI: 1.00-1.90) compared to those who had lived for 10 or less years (Finch and Vega, 2003).

Despite the growing numbers of foreigners in Korea, there has been a lack of studies examining the relationship between acculturation and health outcomes among this population. It is still not clear what causal mechanisms operate in the relationship between acculturation factors and the level and differentials of individual health status (Kim, 2007; Kweon and Park, 2007; Chung and Han, 2009; Yang, 2010). Therefore, the objective of this research is to examine the association between acculturation and self-rated health. There has been an inconsistent use of various measures to assess acculturation ranging from scales, non-scale items, and various combinations (Salant and Lauderdale, 2003). Thus, this study incorporates three different measures of acculturation: speaking ability, age at arrival, and length of residency. It was hypothesized that the more acculturated individuals would have better self-rated health. In addition, this study aims to determine whether socio-demographic variables are confounders or effect modifiers of the association. In its examination of the association between acculturation and self-rated health, this study includes social support, discrimination, and life satisfaction as covariates. In

particular, self-reported discrimination has been found to be associated with lower mental health status and could thus play a potential role in the association between acculturation and health (Gee et al., 2006). Furthermore, education, income, and discrimination are considered as effect modifiers of the association between acculturation and self-reported health status.

Ⅱ. Methods

1. Participants

This study employed a cross-sectional design and consisted of secondary data analysis using data from the 2009 Korean National Multi-Cultural Family Survey (NMFS), which was designed to reach migrant spouses in Korea under the Multicultural Family Support Act of 2008 (Kim et al., 2010). The 2009 Korean NMFS was jointly conducted by the Ministry of Health and Welfare, Ministry of Gender Equality and Family, and Ministry of Justice to research the living conditions and welfare needs of multicultural families in Korea (MOWH et al., 2010). Migrant spouses were considered to be immigrants or naturalized Korean citizens who were married to Korea-born citizens. For the sampling of the participants, address and basic demographic information were obtained from the Ministry of Public Administration and Security for households that included migrant spouses. Afterward, trained interviewers went to the target households and collected survey data from the migrant spouses. The questionnaire was self-administered and offered in 10 different languages. Participants provided information on their personal background, employment, married life and family relations, children, health, social life, and welfare needs.

The initial sample consisted of 73,669 participants. Our final sample included foreign women aged 18 to 59 whose spouses were between the ages of 18 to 90, resulting in a sample of 65,049 subjects (n=8,620 excluded). Those who resided

in Korea for less than one month (n=54) and those with the wrong year of birth (n=3) were also excluded from the final sample. Moreover, those missing information on the year of their immigration (n=5,343), date of birth (n=11), self-rated health (n=554), and Korean speaking skills (n=979) were excluded. Finally, men were also excluded due to the small sample size (n=267 men). After all exclusions, the final analytic sample consisted of 57,838 women.

The previous Korean literature on the issues of the acculturation and health of foreigners was mostly based on small sample surveys or interviews, and thus was not free from sampling bias and measurement problems. Being a national survey of the government, the 2009 Korean NMFS has a great strength in that it provides the most comprehensive data and may allow us to have more insight into the causal mechanisms of the health status of foreign women residing in Korea.

2. Independent Variable: Acculturation

In order to capture different aspects of acculturation, we used three measures to examine the association with self-rated health among foreign women in Korea: Korean speaking proficiency, age at arrival, and length of residency. Korean speaking proficiency was assessed by asking, "How fluent is your Korean?" Participants responded on a 5-point Likert scale by selecting one of the following categories: very good, good, average, poor, and very poor. Speaking proficiency was collapsed into three categories (good, average, and poor).

Age at arrival and length of residency were also used to measure acculturation. Both variables were derived. Age at arrival was calculated by subtracting the date of birth from the date of immigration, and the length of residency was calculated by subtracting the date of immigration from the survey administration date or July 2009. Both variables were categorized based on their distributions using quartiles. Age at arrival was categorized into <22 years, 22-25 years, 26-31 years, or 32+ years. Length of residency was categorized into 0-1 years, 2-3 years, 4-7 years, or 8+ years.

3. Dependent Variable: Self-rated Health Status

Self-rated health status was assessed using a 5-point Likert scale by asking participants, "What is your general health condition?" Participants were asked to choose, "very good, quite good, neutral, bad, or very bad." The categories were collapsed to be binary with the choices of good (very good, quite good, and neutral) or poor (bad and very bad).

4. Covariates

A number of variables were identified to be significantly associated with acculturation and self-rated health and were thus adjusted for in the multivariate-adjusted logistic regression. The covariates included age (continuous), ethnicity, education, income, frequency of contact with family in their home country, seeking advice from native Koreans, ever discrimination experienced, life satisfaction, satisfaction with spouse, and satisfaction with in-laws. For all covariates, a new category was created for missing and "don't know" responses when applicable. Ethnicity included Korean-Chinese, Han-Chinese, Vietnamese, Filipino, Japanese, other, and missing (n=1,484). Education was categorized into four groups including less than high school, high school, college or higher, and don't know/missing (n=422). Monthly income was categorized into four groups (0-990,000w, 1,000,000-2,990,000w, 3,000,000w+, and don't know or missing; n=8,888).

For discrimination, participants were also asked, "Have you experienced discrimination because you are a foreigner while living in Korea?" Responses were categorized as yes, no, or missing (n=1,051). As a measure of social support, we included whether participants seek advice from native Koreans. Participant responses were categorized as yes, no, or missing (n=2,135). In addition, frequency of contact with family in their home country was assessed by the question, "How often have you contacted (phone call, letter, e-mail, internet chatting) your family in the home

country in the last year?" Responses were chosen from the following seven categories: "more than once a week, once a week, 1-2 times a month, more than 2-3 times per year, once a year, not at all, and missing" (n=1,446). For life satisfaction, the participants were asked, "How much are you satisfied with your current status of living?" (missing and not applicable=644). Similar questions were asked for satisfaction with their spouse (missing and not applicable=2,835) and in-laws (missing and not applicable= 16,145). Response options for items on spousal satisfaction included very much satisfied, satisfied, average, dissatisfied, and very dissatisfied. An additional category was added for missing/not applicable. We considered these discrimination, social support, and life satisfaction variables as potential confounders because these variables are associated with acculturation and self-rated health status. Furthermore, we wanted to test role of these variables by comparing association between acculturation and self-reported health status by comparing the estimates of the association with or without these potential confounders. Findings related to this are explained in Results and Discussion sections.

5. Statistical Analysis

Chi-square tests for the categorical covariates and *t* tests for the continuous covariate (age) were performed to examine whether the socio-demographic characteristics of our sample differ by self-rated health. Bivariate analysis was then conducted to examine the relationship between each covariate and self-rated health adjusting for age. To further examine the confounding effect of these covariates, multivariate-adjusted logistic regression was performed to examine potential confounding from the covariates.

A series of logistic regression models were then conducted to demonstrate the effects of the covariates on the association between acculturation and self-rated health. Model 1 in Table 2 is the simplest model and was only adjusted for age. Model 2 is adjusted for age and ethnicity, and Model 3 adds education and income

to the covariates found in Model 2. Model 4 is the fully adjusted model, which includes all the other covariates in addition to those found in Model 3.

No multicollinearity was detected based on the variance inflation factors (VIFs). All the VIF values were found to be under the value of 5, which is well below the standard VIF cut-off value of 10 (Craney and Surles, 2002). Moreover, interaction was tested independently between the acculturation measures and the potential effect modifiers including education, income, life satisfaction, advice from native Koreans, and discrimination. The odds ratios were then stratified for interactions that were found to be significant.

Ⅲ. Results

Table 1 shows the socio-demographic characteristics by self-rated health among the 57,838 participants. About 10% of the participants reported having poor self-reported health status. Overall, the mean age was 33.0 years (standard deviation (SD)=9.0), and the majority of participants reported good (37.7%) or average (40.0%) Korean speaking proficiency. Participant characteristics significantly differed by their self-rated health. Particularly, those with poor self-rated health tended to have arrived at older ages as compared to those with good self-rated health (40.8% arrived at age 32 or older vs. 21.6%). Participants reporting poor health were also more likely to have resided in Korea for longer than those reporting good health (37.6% had lived in Korea for 8 or more years vs. 24.2%). Similar to the total foreign population in Korea (49.9% Chinese), Chinese immigrants made up about 48.6% of the sample (34.9% Korean-Chinese and 13.7% Han-Chinese), while proportions for the other ethnic groups differed (MOSPA, 2013; Kim, 2014). For life-, spouse-, and in-law satisfaction, participants with poor self-rated health were more likely to report “average” satisfaction, where as those with good self-rated health tended to be “satisfied” or “very satisfied.”

Table 1. Self-rated health by the socio-demographic characteristics of participants

	Total (n=57,838)		Self-rated health				*p*-value[a]
			Good (n=51,995)		Poor (n=5,843)		
Age (mean, SD)	33.0	9.0	32.4	8.8	37.8	9.8	<.0001
	N	%	N	%	N	%	
Korean speaking proficiency							<.0001
Good	21,793	37.7	19,401	37.3	2,392	40.9	
Average	23,121	40.0	20,950	40.3	2,171	37.2	
Poor	12,924	22.3	11,644	22.4	1,280	21.9	
Age at arrival							<.0001
<22 years	15,589	27.0	14,615	28.1	974	16.7	
22-25 years	14,944	25.8	13,816	26.6	1,128	19.3	
26-31 years	13,679	23.6	12,323	23.7	1,356	23.2	
32+years	13,626	23.6	11,241	21.6	2,385	40.8	
Length of residency							<.0001
8+ years	14,770	25.5	12,572	24.2	2,198	37.6	
4-7 years	15,118	26.1	13,400	25.8	1,718	29.4	
2-3 years	15,298	26.5	14,095	27.1	1,203	20.6	
0-1 years	12,652	21.9	11,928	22.9	724	12.4	
Ethnicity							<.0001
Korean-Chinese	20,214	34.9	17,345	33.4	2,869	49.1	
Han-Chinese	7,946	13.7	7,103	13.7	843	14.4	
Vietnamese	15,900	27.5	14,879	28.6	1,021	17.5	
Filipino	5,198	9.0	4,819	9.3	379	6.5	
Japanese	3,362	5.8	2,944	5.7	418	7.2	
Others	3,734	6.5	3,507	6.7	227	3.9	
Missing	1,484	2.6	1,398	2.7	86	1.5	
Education							<.0001
Less than high school	20,569	35.6	18,319	35.2	2,250	38.5	
High school	24,774	42.8	22,185	42.7	2,589	44.3	
College or higher	12,073	20.9	11,111	21.4	962	16.5	
Don't know/missing	422	0.7	380	0.7	42	0.7	
Monthly income							<.0001
0-990,000w	11,779	20.4	9,724	18.7	2,055	35.2	
1,000,000-2,990,000w	32,497	56.2	29,721	57.1	2,776	47.5	
3,000,000w+	4,674	8.0	4,453	8.6	221	3.8	
Don't know/missing	8,888	15.4	8,097	15.6	791	13.5	
Contact w/ home country							<.0001
1+ a week	17,596	30.4	16,237	31.2	1,359	23.3	
Once a week	15,994	27.7	14,620	28.1	1,374	23.5	
1-2 times a month	17,526	30.3	15,448	29.7	2,078	35.6	
2-3+ times per year	2,789	4.8	2,337	4.5	452	7.7	
Once a year	643	1.1	521	1.0	122	2.1	
Not at all	1,844	3.2	1,529	2.9	315	5.4	
Missing	1,446	2.5	1,303	2.5	143	2.4	

	Total (n=57,838)		Self-rated health				*p*-value[a]
			Good (n=51,995)		Poor (n=5,843)		
	N	%	N	%	N	%	
Advice from Koreans							<.0001
Yes	30,877	53.4	27,446	52.8	3,431	58.7	
No	24,826	42.9	22,634	43.5	2,192	37.5	
Missing	2,135	3.7	1,915	3.7	220	3.8	
Discriminated							<.0001
No	19,174	33.2	16,326	31.4	2,848	48.7	
Yes	37,613	65.0	34,732	66.8	2,881	49.3	
Missing	1,051	1.8	937	1.8	114	2.0	
Life satisfaction							<.0001
Very satisfied	13,244	22.9	12,548	24.1	696	11.9	
Satisfied	19,544	33.8	18,209	35.0	1,335	22.8	
Average	20,670	35.7	17,988	34.6	2,682	45.9	
Dissatisfied	3,093	5.3	2,278	4.4	815	13.9	
Very dissatisfied	643	1.1	396	0.8	247	4.2	
Missing/not applicable	644	1.1	576	1.1	68	1.2	
Spouse satisfaction							<.0001
Very satisfied	19,722	34.1	18,495	35.6	1,227	21.0	
Satisfied	20,211	34.9	18,584	35.7	1,627	27.8	
Average	12,672	21.9	10,917	21.0	1,755	30.0	
Dissatisfied	1,785	3.1	1,340	2.6	445	7.6	
Very dissatisfied	613	1.1	415	0.8	198	3.4	
Missing/not applicable	2,835	4,9	2,244	4.3	591	10.1	
In-law satisfaction							<.0001
Very satisfied	12,040	20.8	11,408	21.9	632	10.8	
Satisfied	14,073	24.3	13,121	25.2	952	16.3	
Average	13,085	22.6	11,709	22.5	1,376	23.5	
Dissatisfied	1,766	3.1	1,439	2.8	327	5.6	
Very dissatisfied	729	1.3	574	1.1	155	2.7	
Missing/not applicable	16,145	27.9	13,744	26.4	2,401	41.1	

Note: a *p*-values were obtained from the *chi-square* tests or *t* tests.

A series of multivariate logistic regression models were conducted for the acculturation measures adjusting for the confounders. The results for the multivariate-adjusted logistic regression are presented in Table 2 for each acculturation measure, while the odds ratios for the covariates are based on the model using Korean speaking ability.

1. Korean Speaking Proficiency

In the age-adjusted model (Model 1) in Table 2, participants with poor Korean speaking ability were 41% more likely to have poor health compared with those whose Korean speaking ability was good (OR=1.41; 95% CI: 1.31-1.53). When ethnicity was added in Model 2, the odds ratios increased from 1.12 to 1.29 for average vs. good speaking ability and 1.41 to 1.67 for poor vs. good speaking ability. When education and income were added to Model 3, the odds ratios became attenuated and decreased from 1.29 to 1.20 (average vs. good) and 1.67 to 1.52 (poor vs. good). Having worse Korean speaking proficiency increased the odds of having poor self-rated health after adjusting for all covariates. Those with poor Korean speaking ability had 38% increased odds of having poor self-rated health (OR=1.38; 95% CI: 1.26-1.52).

In the fully adjusted model, foreigners who were Korean-Chinese were found to have the poorest self-rated health. Compared to Korean-Chinese, other ethnicities had 46% to 11% decreased odds of having poor health (OR=0.54 to 0.89 adjusting for all other covariates). A gradient effect was observed for life, spouse, and in-law satisfaction, with those having greater dissatisfaction having greater odds of having poor self-rated health. For example, when using Korean speaking ability as the acculturation measure, those who were satisfied with their lives had 1.1 times the odds (OR=1.05; 95% CI: 0.95-1.17), those with average satisfaction had 1.6 times the odds (OR=1.60; 95% CI: 1.44-1.77), those who were dissatisfied had 2.8 times the odds (OR=2.78; 95% CI: 2.42-3.18), and those who were very dissatisfied had 4.1 times the odds of having poor self-rated health (OR=4.05; 95% CI: 3.29-4.98) compared to those who were very satisfied. Similarly, gradients were also observed for education and income, where those with less education and less income had greater odds of poor self-rated health. For instance, for education (when examining Korean speaking ability), those with a high school education had 1.1 times the odds (OR=1.14; 95% CI: 1.05-1.25) and those with less than a high school education had

Table 2. Multivariate-adjusted logistic regression: Association between acculturation variables and self-rated health, n=57,838

	Model 1[b]		Model 2[c]		Model 3[d]		Model 4[e]	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Age[a]	1.07	1.06-1.08	1.06	1.06-1.07	1.06	1.05-1.06	1.05	1.05-1.06
K speaking proficiency								
Good		Ref		Ref		Ref		Ref
Average	1.12	1.05-1.20	1.29	1.20-1.38	1.20	1.12-1.29	1.12	1.04-1.20
Poor	1.41	1.31-1.53	1.67	1.53-1.83	1.52	1.39-1.66	1.38	1.26-1.52
Age at arrival								
<22 years		Ref		Ref		Ref		Ref
22-25 years	0.84	0.77-0.93	0.87	0.79-0.96	0.90	0.82-0.99	0.89	0.81-0.99
26-31 years	0.78	0.70-0.86	0.84	0.75-0.93	0.87	0.78-0.97	0.87	0.78-0.97
32+years	0.80	0.70-0.91	0.80	0.70-0.91	0.80	0.69-0.91	0.86	0.75-0.99
Length of residency								
8+ years		Ref		Ref		Ref		Ref
4-7 years	0.88	0.82-0.94	0.84	0.78-0.91	0.93	0.87-0.99	0.86	0.80-0.93
2-3 years	0.73	0.67-0.79	0.69	0.63-0.75	0.83	0.76-0.89	0.78	0.71-0.85
0-1 years	0.61	0.55-0.67	0.57	0.51-0.63	0.69	0.63-0.76	0.72	0.65-0.80
Ethnicity[a]								
Korean-Chinese				Ref		Ref		Ref
Han-Chinese			0.78	0.72-0.86	0.81	0.74-0.89	0.89	0.80-0.98
Vietnamese			0.80	0.72-0.89	0.67	0.60-0.74	0.75	0.67-0.84
Filipino			0.59	0.52-0.66	0.56	0.49-0.63	0.54	0.47-0.62
Japanese			0.67	0.60-0.76	0.79	0.70-0.89	0.66	0.58-0.76
Others			0.48	0.42-0.56	0.52	0.45-0.61	0.55	0.47-0.64
Missing			0.77	0.61-0.97	0.63	0.49-0.79	0.75	0.59-0.95
Education[a]								
College or higher						Ref		Ref
High school					1.12	1.03-1.22	1.14	1.05-1.25
Less than high school					1.25	1.13-1.37	1.31	1.19-1.45
Don't know/missing					1.37	0.98-1.93	1.38	0.98-1.96
Income[a]								
3,000,000w+						Ref		Ref
1,000,000-2,990,000w					1.86	1.62-2.15	1.52	1.32-1.76
0-990,000w					3.93	3.40-4.55	2.52	2.17-2.93
Don't know/missing					2.52	2.15-2.95	1.85	1.57-2.18
Contact w/ home country								
1+ a week								Ref
Once a week							0.97	0.89-1.05
1-2 times a month							1.10	1.01-1.18
2-3+ times per year							1.19	1.05-1.35
Once a year							1.23	0.99-1.54
Not at all							1.43	1.24-1.65
Missing							0.81	0.67-0.99

	Model 1[b]		Model 2[c]		Model 3[d]		Model 4[e]	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Advice from Koreans[a]								
Yes								Ref
No							1.20	1.12-1.27
Missing							0.94	0.80-1.10
Discriminated[a]								
No								Ref
Yes							1.63	1.54-1.73
Missing							1.22	0.99-1.52
Life satisfaction[a]								
Very satisfied								Ref
Satisfied							1.05	0.95-1.17
Average							1.60	1.44-1.77
Dissatisfied							2.78	2.42-3.18
Very dissatisfied							4.05	3.29-4.98
Missing/not applicable							1.40	1.07-1.85
Spouse satisfaction[a]								
Very satisfied								Ref
Satisfied							0.97	0.89-1.07
Average							1.21	1.09-1.34
Dissatisfied							1.64	1.41-1.91
Very dissatisfied							1.77	1.42-2.19
Missing/not applicable							1.52	1.33-1.74
In-law satisfaction[a]								
Very satisfied								Ref
Satisfied							1.06	0.94-1.19
Average							1.14	1.01-1.28
Dissatisfied							1.61	1.36-1.90
Very dissatisfied							1.50	1.20-1.87
Missing/not applicable							1.23	1.10-1.38

Note: [a] Odds ratios are based on the model using Korean speaking ability as the acculturation measure.
[b] Model 1 is adjusted for only age.
[c] Model 2 is adjusted for age and ethnicity.
[d] Model 3 is adjusted for age, ethnicity, education, and income.
[e] Model 4 is adjusted for all covariates.

1.3 times the odds of having poor self-rated health compared to those with university or higher education (OR=1.31; 95% CI: 1.19-1.45). Those who did not seek advice from native Koreans (OR= 1.20; 95% CI: 1.12-1.27) and who had experienced discrimination (OR= 1.63; 95% CI: 1.53-1.73) also had greater odds of having poor self-rated health.

2. Age at Arrival

Age at arrival and length of residency showed opposite trends in comparison to Korean speaking proficiency. Those who were less acculturated, meaning that they arrived in Korea at later ages, had lower odds for having poor self-rated health. For example, compared to those who arrived younger than 22 years of age, those who had arrived from 22 to 25 years had 11% decreased odds (OR=0.89; 95% CI: 0.81-0.99), those who had arrived from 26 to 31 had 13% decreased odds (OR=0.87; 95% CI: 0.78-0.97), and those who had arrived at age 32 or older had 14% decreased odds of having poor self-rated health (OR=0.86; 95% CI: 0.75-0.99) after adjusting for all covariates. Similar trends were observed in terms of how the odds ratios behaved when ethnicity was added to the model. However, when the socioeconomic variables (education and income) were added to the model, the odds ratios either increased or stayed the same. For instance, the odds ratios increased from 0.87 to 0.90 for 22-25 years vs. less than 22 years, 0.84 to 0.87 for 26-31 years vs. less than 22 years, and 0.80 remained the same for 32+ years vs. less than 22 years. However, compared to Korean speaking proficiency, magnitude of association was lower between age at arrival and self-rated health status.

3. Length of Residency

When examining the association between length of residency and self-rated health, a similar trend was observed as for age at arrival. Those who were less acculturated, meaning that they have resided in Korea for a shorter time, were found to have lower odds of having poor self-rated health. For length of residency, the decreased odds ranged from 14% to 28% when compared to 4 to 7 years of residency (OR=0.86; 95% CI: 0.80-0.93), 2-3 years (OR=0.78; 95% CI: 0.71-0.85), and 0 to 1 years of residency (OR=0.72; 95% CI: 0.65-0.80) to 8 or more years of residency. When ethnicity was added to the model, the odds ratios became attenuated and decreased,

unlike with Korean speaking ability and age at arrival where the opposite trend was observed. For instance, the odds ratios decreased from 0.88 to 0.84 for 4-7 years vs. 8+ years, 0.73 to 0.69 for 2-3 years vs. 8+ years, and 0.61 to 0.57 for 0-1 years vs. 8+ years. The odds ratios again increased when the socioeconomic variables (education and income) were added to the models from 0.84 to 0.93 for 4-7 years vs. 8+ years, 0.69 to 0.83 for 2-3 years vs. 8+ years, and 0.57 to 0.69 for 0-1 years vs. 8+ years.

4. Interaction

Interaction was tested independently between the acculturation measures and the potential effect modifiers including education, income, life satisfaction, advice from native Koreans, and experience of discrimination. For Korean speaking proficiency, significant interactions were found between speaking skills and the following covariates in predicting health status: education ($p<0.01$), income ($p<0.0001$), and discrimination ($p<0.0001$). Marginally significant interactions were found between age at arrival and the following covariates in predicting health status: income ($p=0.07$) and advice from Koreans ($p=0.08$). Significant interactions were found between length of residency and the following covariates in predicting health status: education ($p<0.05$) and income ($p<0.05$). The stratified results for the significant interactions are illustrated in Tables 3-7.

When the association between Korean speaking proficiency and self-rated health was stratified by education, the association only remained significant for the poor vs. good Korean speaking proficiency groups with the exception of those in high school for which the association was also significant for average vs. good Korean speaking proficiency. The association between Korean speaking ability and self-rated health was strongest among those with high education. When stratified by income, the association again remained significant for poor vs. good Korean speaking proficiency, with the strongest association being for those with 3,000,000w which was the highest income

Table 3. Association between Korean speaking proficiency and self-rated health by education

	Crude (n=57,838)		Education							
			Less than high school (n=20,569)		High school (n=24,774)		College or higher (n=12,073)		Do not know/ missing (n=422)	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Korean speaking proficiency										
Good	Ref		Ref		Ref		Ref		Ref	
Average	1.12	1.04-1.20	0.96	0.85-1.08	1.23	1.11-1.37	1.16	0.97-1.39	1.44	0.47-4.38
Poor	1.38	1.26-1.52	1.25	1.08-1.45	1.47	1.27-1.69	1.41	1.13-1.77	3.98	1.03-15.40

Table 4. Association between Korean speaking proficiency and self-rated health by income

	Crude (n=57,838)		Income							
			0-990,000w (n=11,779)		1,000,000-2,990,000w (n=32,497)		3,000,000w+ (n=4,674)		Do not know/ missing (n=8,888)	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Korean speaking proficiency										
Good	Ref		Ref		Ref		Ref		Ref	
Average	1.12	1.04-1.20	1.00	0.88-1.13	1.14	1.03-1.26	1.33	0.93-1.90	1.32	1.05-1.65
Poor	1.38	1.26-1.52	1.35	1.14-1.59	1.40	1.22-1.59	1.89	1.20-2.96	1.44	1.11-1.86

Table 5. Association between Korean speaking proficiency and self-rated health by discrimination

	Crude (n=57,838)		Experience of discrimination					
			Yes (n=19,174)		No (n=37,613)		Do not know/ missing (n=1,051)	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Korean speaking proficiency								
Good	Ref		Ref		Ref		Ref	
Average	1.12	1.04-1.20	1.23	1.11-1.36	1.03	0.93-1.14	0.76	0.42-1.38
Poor	1.38	1.26-1.52	1.49	1.30-1.72	1.29	1.13-1.46	1.26	0.63-2.51

category. When the results were stratified by experience of discrimination, the association between Korean speaking skills and self-rated health was only significant at all levels for those who have experienced discrimination, with the strongest

Table 6. Association between length of residency and self-rated health by education

	Crude (n=57,838)		Education							
			Less than high school (n=20,569)		High school (n=24,774)		College or higher (n=12,073)		Do not know/ missing (n=422)	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Length of residency										
8+ years	Ref		Ref		Ref		Ref		Ref	
4-7 years	0.86	0.80-0.93	0.75	0.66-0.85	0.88	0.79-0.98	0.90	0.75-1.08	2.85	0.81-10.01
2-3 years	0.78	0.71-0.85	0.64	0.56-0.75	0.83	0.73-0.95	0.81	0.64-1.03	2.13	0.59-7.64
0-1 years	0.72	0.65-0.80	0.62	0.52-0.73	0.72	0.61-0.86	0.81	0.62-1.07	1.14	0.24-5.35

Table 7. Association between length of residency and self-rated health by income

	Crude (n=57,838)		Income							
			0-990,000w (n=11,779)		1,000,000-2,990,000w (n=32,497)		3,000,000w+ (n=4,674)		Do not know/ missing (n=8,888)	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Length of residency										
8+ years	Ref		Ref		Ref		Ref		Ref	
4-7 years	0.86	0.80-0.93	0.81	0.71-0.93	0.89	0.81-0.99	0.84	0.58-1.21	0.78	0.62-1.00
2-3 years	0.78	0.71-0.85	0.65	0.55-0.76	0.86	0.76-0.97	0.67	0.43-1.05	0.76	0.58-0.99
0-1 years	0.72	0.65-0.80	0.60	0.48-0.73	0.76	0.65-0.88	0.84	0.51-1.40	0.69	0.52-0.91

association found among participants who have experienced discrimination.

For length of residency and self-rated health by education, the association remained significant for only the less than high school and high school education groups. The associations were stronger for the less than high school category and those who were more acculturated and who have resided in Korea for longer having worse self-rated health. When stratified by income, only the up to 990,000w and the 1,000,000w-2,990,000w group showed significant associations. Stronger associations were found for the up to 990,000w group with those who were more acculturated and resided in Korea having worse self-rated health.

Ⅳ. Discussion

This study utilized multiple acculturation measures to examine the association between acculturation and self-rated health to better elucidate the complexities of acculturation. Previous studies have not included social support, life satisfaction, and discrimination variables as covariates in their examination, which may play underlying roles in this association (Kim-Roh, 2000; Finch and Vega, 2003; Gee et al., 2006; Ahn, 2008; Chung and Han, 2009; Yang, 2010; Im, 2010; Sung et al., 2013). When Koreans were surveyed by the Women's Development Institute in 2007, respondents ranked self-identification as Korean, Korean language, and maintaining Korean nationality as the top three most important elements to be a genuine Korean illustrating the high importance that Koreans place on Korean language skills (Lee, 2009). Language ability within a host country can have not only social benefits, but also financial ones with language proficiency having been found to be positively associated with employment probabilities among immigrants in the United Kingdom (Dustmann and Fabbri, 2003).

1. Korean Speaking Proficiency

Similar to the existing literature, the findings from this study also support greater acculturation in terms of language proficiency being associated with better health (Patel et al., 2003; Akresh and Frank, 2008; Okafor et al. 2013). A study of multicultural immigrants in the U.S. found that speaking English well and speaking English with friends increased the odds of reporting excellent current health (Akresh and Frank, 2008). In addition, using a language acculturation scale, older Mexican-Americans with low language acculturation were found to have worse self-rated health than those with high levels of language acculturation (Patel et al., 2003). Korean speaking ability has also been found to be positively associated with health status of foreign wives in the Korean literature (Lee, 2009; Jun et al., 2009). One

of the main reasons for higher language proficiency being associated with better health may be that better language capability increases access to health related information in addition to general information that may be indirectly associated with health.

Findings from the analysis of interaction between Korean speaking proficiency and level of education also indicate that among those who are highly educated, the gap in self-reported health status between good Korean speaking proficiency and poor is larger. This implies that among highly educated individuals (those who are more likely to better understand health messages), the gap in self-reported health by Korean speaking proficiency is larger. Similar explanations can be applied to level of income as a significant effect modifier.

Moreover, discrimination was another significant effect modifier for the association between Korean speaking proficiency and self-reported health. One of the main reasons for foreign women being discriminated against in Korea may be due to lower language proficiency. If one speaks better Korean, she is less likely to be discriminated against than another woman who does not speak Korean well. Therefore, it is possible that among women who have experienced discrimination, different levels of Korean speaking proficiency lead to a larger gap in self-reported health status; that the odds of reporting poor health among women of poor Korean speaking proficiency is greater among women who have experienced discrimination compared to those who have not experienced discrimination.

Another potential explanation of seeing effect modification by levels of education, income, and discrimination may be attributable to the larger proportion of individuals with less education, lower income, and experience of discrimination that reported being sick or having had an accident in the past two weeks. This could have contributed to their subsequent self-rated health. For education, 10.3% of those with less than high school education (83.6% no, 6.1% missing), 11.5% of those with a high school education (83.1% no; 5.4% missing), and 10.1% of those with college or higher education (85.3% no; 4.6% missing) had been sick or been in an accident in the past two weeks. When examining annual income, 15.5% of

subjects with incomes up to 990,000w (78.6% no; 5.9% missing), 10.1% for those with incomes between 1,000,000w-2,990,000w (85.6% no; 4.3% missing), and 8.3% for those with over 3,000,000w (87.8% no; 3.9% missing) had been sick or been in an accident in the past two weeks. For discrimination, 15.8% of those who had experienced discrimination (79.5% no; 4.7% missing) and 8.3% of those who had not (86.7% no; 5.0% missing) had been sick or had been in an accident in the past two weeks.

2. Age at Arrival

Unlike previous studies, the current study found increased age at arrival to be associated with better self-rated health (Leao et al., 2009). A study of Swedish immigrants found that those who had immigrated at later ages had worse self-rated health as compared to Sweden-born individuals. However, it is important to consider the different context of immigration and the characteristics of immigrants to Sweden from those to Korea. For example, the immigrant population to Sweden is more homogeneous and primarily from Finland or an Organization for Economic Co-operation and Development (OECD) country (Leao et al., 2009). Another study examining African immigrants in the U.S. also found an association between increasing age at immigration and worse self-rated health (Okafor et al., 2013). On the other hand, the majority of foreigners in Korea are from Asian countries that are relatively less developed. Most of our subjects (85%) are from China, Vietnam, or the Philippines. Foreign wives who came to Korea at younger ages tend to be from poorer households in less developed countries as compared to those who came to Korea at older ages (Kim, 2010; Kim, 2013a).

3. Length of Residency

The findings from this study are supported by the existing literature, which has

found shorter length of residency to be associated with lower odds for having poor self-rated health (Finch and Vega, 2003; Leao et al., 2009; Okafor et al., 2013). For instance, a study examining immigrants in Sweden found that immigrants who have resided in Sweden for 0 to 7 years had 1.46 times the odds of reporting poor self-rated health as compared to natives, while those who have resided in Sweden for 8-14 years had 2.02 times the odds (Leao et al., 2009). Similar results were also found in another study, which examined acculturation and self-rated health among African immigrants in the U.S. (Okafor et al., 2013). Compared to those who had resided in the U.S. for less than a year, those who had resided for 1-4 years had 63% increased odds and those who had resided for 5 or more years had 45% increased odds of having worse self-rated health (Okafor et al., 2013). Another study examining acculturation and health change among a multi-ethnic group of U.S. immigrants found that longer residency was associated with worse health change (Lee et al., 2013c). Those who had been in the U.S. for 1-5 years had 2.69 times, for 6-10 years had 5.24 times, for 11-15 years had 6.20 times, and for more than 15 years had 6.61 times the odds of reporting a worse change in health compared to those who had been in the U.S. for less than a year (Lee et al., 2013c).

For some of our study participants, it may be possible that living longer in Korea is associated with unhealthy lifestyle changes, such as less physical activity or more westernized foods, less access to resources, greater isolation, and greater exposure to unpleasant working/living environments, compared to when they were living in their home countries. Our results from the interaction analysis indicate that less educated and lower income group participants demonstrate larger gaps between length of residency and self-reported health. Moreover, it is likely that those who have lived in Korea longer might have experienced more discrimination, although we did not find a significant interaction between length of residence and discrimination (Kim et al., 2010; MOGEF, 2013; Kim, 2013a).

When comparing those who are employed and have experience of discrimination, 42.6% of those who have experienced discrimination are currently employed (27.4%

not currently employed; 30.0% never employed) suggesting that there may be discrimination arising from the workplace, which could contribute to poorer self-rated health (Schulz et al., 2006). Discrimination has been found in a previous study of African American women to be significantly associated with worse depressive symptoms and poorer self-rated general health adjusting for age, education, or income (Schulz et al., 2006).

4. Strengths and Limitations

There are limitations of the current study which should be noted. First, this study uses a cross-sectional design and therefore, causation cannot be inferred. In addition, another limitation of this study is that information on health status prior to immigration and previous diagnosis of health conditions, particularly chronic conditions, was not asked in the survey. As a result, this data was not available for such an analysis. Another study examining language acculturation (specifically English proficiency) and self-rated health among African immigrants in the U.S. found pre-migration health and previous chronic disease diagnosis to be significantly associated with self-rated health (Okafor et al., 2013). For instance, those who had worse health before immigrating and those with a chronic disease diagnosis were found to have poorer self-rated health in this study. Lastly, participants from different countries may perceive self-reported health differently based on their concept of health stemming from different cultural background.

Despite these limitations, this study helps to address the gap in the literature by examining the relationship between acculturation and health among the growing foreign population in Korea (Kweon and Park, 2007; Chung and Han, 2009; Jun et al., 2009; Im, 2010; Yang, 2010). In order to capture different aspects of acculturation, we used three measures of acculturation to examine the association with self-rated health among foreign women in Korea: Korean speaking proficiency, age at arrival, and length of residency. Furthermore, this study also included social

support, life satisfaction, and discrimination as covariates and examined other socioeconomic variables and discrimination as effect modifiers in its examination of the association between acculturation and self-rated health.

Given the mixed findings that were observed among the different measures of acculturation, further studies are needed to explore the association between acculturation and self-rated health and to better understand the underlying mechanisms. The findings from this study suggest that educational programs and interventions geared towards improving Korean speaking ability among foreign women in Korea may be promising and beneficial in improving the health of foreign women in Korea.

이선민은 서울대학교에서 보건학 석사, 하버드대학교에서 사회역학 박사학위를 받았으며, 2004-2006년 콜로라도대학교 조교수, 그리고 2006년부터 메릴랜드대학교에서 부교수로 재직 중이다. 주요 관심분야는 보건학, 사회역학과 암 예방 연구이며, 현재 아시아계 미국인의 건강과 질병에 관한 다수의 연구를 진행하고 있다. (E-mail: sunmin@umd.edu)

김두섭은 서울대학교에서 문학 석사, 브라운대학교에서 사회학 박사학위를 받았으며, 1983-1984년 동서문화센터(East-West Center) 연구원, 그리고 1984년부터 한양대학교에서 교수로 재직 중이다. 주요 관심분야는 사회인구학과 연구방법론이며, 현재 국제결혼, 외국인배우자의 적응과 출산력, 한국과 북한의 출산력변천에 관한 연구를 진행하고 있다.
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한국 거주 외국인 여성의 문화수용과 주관적 건강인식

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이 논문은 한국에 거주하는 외국인 여성들의 문화수용과 주관적 건강인식과의 관계를 분석하는 것을 목적으로 한다. 이 연구에서는 문화수용의 다양한 측면을 포착하고, 이 다양한 요소들과 자기보고식 건강상태와의 관계를 검증하기 위해서 문화수용의 세 가지 지표, 즉, 외국인 여성의 한국어 구사능력, 한국 이주연령 및 한국 거주기간을 활용하였다. 또한 이 논문에서는 사회적 지원, 생활만족과 차별경험을 통제변수로 도입하였다. 그리고 교육수준, 소득 등의 사회경제적 지위와 차별경험에 관련되는 변수들이 문화수용과 주관적 건강인식의 관계에 어떠한 영향을 미치는가를 파악하고자 시도하였다. 분석을 위해서는 『2009년 전국다문화가족실태조사』의 원자료를 활용하였다. 카이스퀘어 검증과 t 검증, 그리고 다변량 로지스틱회귀분석의 결과, 외국인 여성의 한국어 구사능력이 높을수록 건강상태를 좋게 인식하는 것으로 밝혀졌다. 이러한 경향은 외국인 여성의 한국어 구사능력이 건강에 관련되는 정보에 대한 접근성을 높이기 때문으로 판단된다. 또한, 외국인 여성의 한국 이주연령이 높고 한국 거주기간이 짧아질수록 건강상태를 좋게 인식하는 경향이 발견되었다. 아울러, 교육 및 소득수준과 차별경험이 한국어 구사능력과 상호작용하여 주관적 건강인식에 의미 있는 영향력을 미치는 것으로 확인되었다. 즉, 교육 및 소득수준이 높고 차별경험을 지닌 외국인 여성들일수록 한국어 구사능력에 따른 자기보고식 건강상태의 편차가 크게 나타나는 것으로 나타났다. 이 논문에서는 이러한 발견들에 대한 가능한 설명과 함의에 대한 논의가 이루어졌다.

주요용어: 문화수용, 문화수용의 지표, 주관적 건강인식, 이민자의 건강, 언어능력, 한국의 외국인 여성