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Health Status and Associated Health Risks among Female Marriage Immigrants in Korea

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<Abstract>
Objectives: This study aims to identify health status and health risks among female marriage immigrants to Korea and to provide a basis for public health strategies to address their health issues. **Methods:** The participants of the study were 3,069 immigrant wives. The health examination was conducted by the Korea Association of Health Promotion (KAHP) in 2008. The participants also completed self-administered questionnaires on demographic characteristics, health-related behaviors and mental health. **Results:** Patterns of immigrant women's health problems differed by age and country of origin. Behavior patterns also differed by their heritage, age, and years of residence in Korea. Generally Vietnamese women fell in lower ranges of disease prevalence and health risk factors in the participant group and Japanese women presented most healthy eating habits. Filipina women showed relatively high disease prevalence than any other group. **Conclusion:** Immigration to Korea by marriage is relatively a new phenomenon, thus continuing surveillance and research are needed to identify health risks, behavior patterns, and their relationships. Interventions and policies for the health of migrant wives, their children and families are required.

Key words: Female marriage immigrant, Health status, Health risk

Ⅰ. Introduction

Marriages between foreign women and Korean men have notably increased in the past twenty years. In fact, the marriages between foreign women and Korean men increased from 2.4% of all marriages in Korea in 1997 to 8.4% in 2007(Statistics Korea, 2007). Among over 122,000 international marriages in Korea in 2008, 87% were between foreign female and Korean men. Of those women, 29.1% were ethnic Koreans from China, 26.2% were Chinese, and 22.1% were Vietnamese (MPAS, 2008).

As the life adjustment and quality of life issues of multicultural families deserve attention, health of the immigrant wives plays a central part in the adjustment of immigrant wives and mothers after life-changing events such as immigration, marriage, childbirth, and employment. Health examination results of migrant wives show that they had higher prevalence of obesity, hypertension, anemia, and cervical cancer risks than Korean women(KAHP, 2008).

Migrant wives also face financial difficulties: A half of households with migrant wives fall below poverty line; and only 1.7% of the households receive National Basic Livelihood Security support(KIHASA, 2010). Almost a quarter of the migrant wives (23.5%) are often left out of the National Health Insurance (NHI) and Medicaid programs despite they experience the burden of health care costs and low accessibility to health care services, and subsequently give up getting health

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care(KIHASA, 2010).

Despite the need and importance, immigrant wives have limited access to health care services and support due to language barriers, financial difficulties, lack of adequate information and/or insurance coverage. For many of the immigrant wives are younger than 40 years old, they are not eligible for the national health examination program which is offered free-of-charge by the National Health Insurance Cooperation.

In this respect, this study reports the results of recent health examination for migrant wives with the aims of: (1) describing health status of those women; (2) identifying their health risks; and (3) providing a basis for public health strategies to address health issues among female marriage immigrants to Korea.

Ⅱ. Methods

1. Study participants

The participants of this study were 3,069 immigrant wives who were registered at district offices and public health centers nationally, and had taken free-of-charge health examination opportunities supported by the Ministry of Health and Welfare in 2008.

These health examination opportunities were promoted mainly through fliers. Immigrant wives and their spouses were eligible for the health examination regardless of the citizenship status of the women. The promotion fliers were made in four languages (Korean, Chinese, English, and Vietnamese) to be more accessible to immigrant wives.

2. Data collection

1) Health examination

The health examination was conducted by the Korea Association of Health Promotion (KAHP) from July to November 2008 using mobile health examination equipment and services. For those who wanted the health examination but could not participate on the day of the KAHP visit were scheduled to come to KAHP branch facilities in 15 cities and towns throughout Korea.

The health examination program consisted of 21 medical tests to detect chronic and acute health conditions. It includes diabetes, hyperlipidemia, anemia, hepatitis B, and other conditions and abnormalities in liver functions, sexually transmitted diseases such as syphilis and HIV/AIDS, and so on(Table 1).

Once completed, health examination results were mailed to the participants within 10 days. Additional tests were arranged for those who needed further examination and confirmation of the test results. Those needed follow-up care were referred to district public health centers, local clinics, and hospitals. Detected cases of tuberculosis and sexually transmitted diseases were reported to district public health centers in accordance with the Infectious Disease Prevention Act.

2) Health survey

At the beginning of the health examination, the participants completed a health survey on demographic characteristics, family and disease history, health-related behaviors such as eating behavior, smoking, alcohol drinking, physical activity, and mental health. The surveys were developed in aforementioned 4 languages.

3. Data analysis

Baseline characteristics of the participants, health survey items, and health examination results are compared across 5 groups categorized by country of origin using chi-square tests or analysis of variance. Multivariable logistic regression analysis were performed on models with health status and health behavior practices as outcomes. All analyses were conducted by using SPSS 17.0 software.

<Table 1> Health examination contents

Categories	Test items	Standard for Normal
Basic	Height	
	Weight	
	BMI	< 23 (kg/m^2)
	Systolic blood pressure	< 120 mmHg
	Diastolic blood pressure	< 80 mmHg
ECG	ECG	Normal reading
Urine	PH	5-8 ph
	Pro	Negative
	Glu	Negative
	O_Blood	Negative
Anemia	Hb	Women: 12.0-16.0 g/dL
Liver	AST	≤40 IU/L
	ALT	≤45 IU/L
	γ-GTP	Women: 0-51 IU/L
Hyperlipidemia	TC	110-230 mg/dL
Diabetes	GLU	70-110 mg/dL
Hepatitis B	S-Ag	Negative
	S-Ab	Positive
	Interpretation	Immunity Present
STD	RPR(Qualitative)	Negative
AIDS	HIV(EIA)	Negative
Uterine cancer	Brush	Normal reading
Chest x-ray	Chest-Ray(100mm)	Normal reading

Ⅲ. Results

1. Demographic characteristics of participants

A total of 3,069 immigrant wives completed the health examination and surveys. An average age of the women was 30.3 years (52.0% in the 20s and 28.9% in the 30s). About 50% of the women (51.3%) were recent immigrants who had spent less than 3 years in Korea at the time of this health examination, 20.2% had lived in Korea for 3-5 years, and 28.5% had spent more than 5 years. One third of the women were Vietnamese (34.3%), and another third was Chinese (30.4%). The next largest group was Filipina (11.8%), followed by Japanese (10.5%) and Cambodian women (5.4%). More than a half of the women (58.4%) were fulltime housewives. (Table 2)

2. Health status and health behaviors

For comparison by countries where immigrant wives originally came from, results were pulled for women from the following 5 countries in the order of group size: Vietnam, China, Philippines, Japan, and Cambodia (n=2,658). Japanese women were older, and lived in Korea for longer than other women, while women from Vietnam and Cambodia were younger and relatively recent immigrants.

<Table 2> Demographic characteristics

Characteristics		%
Age (30.6±9.1, SE=0.2)	15-19 years	3.5
	20-29 years	52.0
	30-39 years	28.9
	40-49 years	11.8
	50 & older	3.7
Country of origin	Vietnam	34.3
	China	30.4
	Philippines	11.8
	Japan	10.5
	Cambodia	5.4
	Others	7.6
Years of residence	> 5 years	28.5
	3-5 years	20.2
	< 3 years	51.3
Occupation	Housewife	58.4
	Employed	6.2
	Self-owned business	1.7
	Farming/Fishing	4.2

Generally Vietnamese women fell in lower ranges of disease prevalence and health risk factors in the participant group. Although the mean BMI of the immigrated women did not vary much by their countries of origin, obesity prevalence was the highest among Filipina women (22.3%) when 7.8% of the Vietnamese women were obese ($p<0.01$). Immigrant wives from the Philippines showed highest proportions of high blood pressure (10.9%, $p<0.01$), and needing Hepatitis B vaccination (64.1%, $p<0.01$). Cambodian women had the highest proportion of ECG abnormal readings (7.2%, $p<0.01$), and Japanese women were most anemic(4.9%, $p<0.01$).

Differences found among the women by country of origin in the prevalence of urine abnormalities, liver function results, total cholesterol levels, diabetes, sexually transmitted diseases, abnormal chest x-ray reading, and uterine cancer were insignificant.

More women from Vietnam and the Philippines reported cooking salty food ($p<0.01$) and preferring meat ($p<0.01$), while Chinese wives cooked spicy food ($p<0.01$), and ate irregularly ($p<0.01$). Half of Chinese, Filipina, and Cambodian wives, respectively, responded that they cooked meals mainly by frying food ($p<0.01$). Japanese women practiced most desirable eating behavior by eating both meat and vegetables ($p<0.01$), eating regularly ($p<0.01$), broiling or steaming food than frying ($p<0.01$), not eating salty and spicy food ($p<0.01$), and not drinking ($p<0.01$).

Although great majorities of these women neither smoke nor drink, Chinese women present the highest proportions of current smokers (4.2%) and alcohol drinking (17.9%, $p<0.01$). Women from the Philippines were the most physically active(39.1%,$p<0.01$), while Cambodian and Japanese women were the least active. Chinese wives were most stressed(43.7%, $p<0.01$).

<Table 3> Health status and health behavior practices by country of origin

		All Immigrants	Country of Origin					
			Vietnam	China	Philippines	Japan	Cambodia	p-value
Cases (%)		2,658 (100.0)	991 (37.3)	872 (32.8)	336 (12.6)	303 (11.4)	156 (5.9)	
Age, mean, year			24.7	34.1	32.0	40.2	24.1	<0.001
Years of residence in Korea, %								<0.001
	≥ 5 years		7.8	30.4	50.3	83.6	3.2	
	3-4.99 years		21.4	24.2	17.4	8.9	9.6	
	< 3 years		70.8	45.4	32.4	7.6	87.2	
Health status	BMI							<0.01
	Mean	21.9	20.9	22.7	22.8	22.3	21.2	
	Overweight (%)	16.4	11.0	20.6	18.5	19.1	16.0	
	Obese (%)	15.6	7.8	21.0	22.3	14.9	10.9	
	BP Abnormal (%)	5.4	4.6	6.0	10.9	7.9	4.5	<0.01
	ECG Abnormal (%)	6.0	4.1	5.1	4.2	4.3	7.2	<0.01
	Urine Abnormal (%)	10.8	9.6	10.8	13.3	6.8	8.6	
	Anemia (%)	2.3	1.6	1.7	4.1	4.9	3.8	<0.01
	Liver Abnormal (%)	2.0	1.4	1.8	2.9	1.6	2.6	
	Total cholesterol							
	Borderline (%)	2.7	2.3	3.1	2.9	4.3	3.8	
	Abnormal (%)	2.1	2.2	2.2	3.5	2.3	0.6	
	Mean	170.3	167.3	170.8	173.2	179.0	167.1	
	Diabetes							
	Borderline (%)	0.9	1.0	1.3	0.3	0.3	-	
	Abnormal (%)	0.7	0.6	0.8	0.6	0.3	1.3	
	Mean	85.2	83.8	86.9	84.8	85.1	83.6	
	Hepatitis B vulnerable (%)	44.1	43.4	37.2	64.1	44.5	56.9	<0.01
	Syphilis + (%)	0.6	0.1	1.4	0.3	0.3	-	
	HIV+ (%)	1 case	1 case	-	-	-	-	
	Chest x-ray Abnormal (%)	4.1	0.3	0.1	-	0.3	-	
	Uterine cancer (%)	0.7	0.4	1.3	0.5	-	-	
Health behaviors and mental health	Food seasoning (%)							<0.01
	Average	77.9	78.6	71.5	80.7	90.1	83.9	
	Salty	10.1	11.4	9.3	11.8	6.1	8.1	
	Spicy	5.6	4.2	10.0	2.2	1.0	4.7	
	Salty & Spicy	6.3	5.8	9.1	5.3	2.7	3.4	
	Food preference (%)							<0.01
	Vegetables	22.5	20.0	28.5	18.0	18.5	22.4	
	Mixed	66.5	63.9	66.6	67.8	78.8	60.5	
	Meat	11.0	16.1	4.9	14.1	2.7	17.0	
	Eating regularly (%)							<0.01
	Always	46.1	46.9	37.5	57.2	61.0	44.1	
	Sometimes	38.5	36.7	43.8	30.0	32.5	44.1	
	Irregular	15.4	16.3	18.8	12.8	6.5	11.7	
	Cooking style (%)							<0.01
	Fry	46.8	45.6	50.9	52.9	34.1	53.6	
	Broil, Steam	42.2	45.7	35.1	35.9	58.9	33.3	
	Uncooked	11.0	8.7	13.9	11.1	7.0	13.0	
	Drinking (%)							<0.01
	0	88.7	95.2	82.1	91.1	95.8	95.0	
	2-3 times/month	8.0	3.4	13.5	5.8	2.8	4.3	
	> Once a week	3.3	1.4	4.4	3.2	1.4	0.7	
	Not smoking (%)	96.9	99.5	95.8	97.7	99.0	100.0	
	Exercise (%)							<0.01
	0/week	72.3	73.8	72.3	65.8	75.3	76.4	
	1-2/week	18.5	18.5	16.8	27.0	18.5	19.4	
	3+/week	9.2	7.7	10.9	12.1	6.2	4.2	
	Stressed (%)	37.1	29.3	43.7	40.6	41.0	22.3	<0.01

3. Comparison of health characteristics by age and by years of residence

Immigrant women who were younger than 34 were more likely to eat meat than older women (age≥40), and this tendency was weaker as the age progressed. Women in their late 20s reported that they cooked food mainly by frying more than women in their 40s and older (OR=1.315, p<0.05). Meanwhile, younger women were less likely to eat regularly, except for those in the late 20s.

Exercise and physical activity levels did not differ by age groups, and those younger than 24 were significantly not stressed than those over 40 (OR=0.752, p<0.05).

Younger women were significantly less likely to be obese (age≤34) and to have hypertension (age≤39), anemia (age≤29), and hyperlipidemia (age 25-34) that older women (age≥40). Age difference was not observed for diabetes and liver diseases.

Compared to the women who had lived in Korea for longer than 5years, those who immigrated rather recently were more likely to have fried food and were less stressed. Those who had lived in Korea for less than 3 years were less physically active (OR=0.792, p<0.05). Those who had lived in Korea for 3-5years were less likely to eat (OR=0.693, p<0.01) and exercise regularly (OR=0.771, p<0.05) than more seasoned immigrants.

There were not significant differences by years of residence in Korea among the immigrants in obesity, hypertension, anemia, hyperlipidemia ,liver diseases, and diabetes except for abnormal ECG readings, which was significantly lower among recent immigrants (< 3 years, OR=0.562, p<0.05).

<Table 4> Adjusted odds ratios of health behavior practice and conditions, by age and years of residence

	Age (Ref: 40 & older)			**Years of residence (Ref: > 5 years)**		
	≤ 24	25-29	30-34	35-39	< 3 years	3-5 years
Eating more meat	2.246***	2.324***	1.893*	0.981	1.357	1.056
Cooking fried foods	1.258	1.315*	1.076	0.925	1.280*	1.364*
Eating regularly	0.708*	0.779	0.539***	0.658**	0.850	0.693**
Exercise regularly	0.825	0.915	1.050	0.968	0.974	0.771*
More physical activity	0.852	0.896	0.772	1.044	0.792*	1.043
Stressed a lot	0.752*	1.043	1.005	1.201	0.744**	0.767*
BMI	0.196***	0.442***	0.585**	0.756	0.896	0.980
BP	0.392***	0.281***	0.426***	0.443**	0.791	0.916
ECG	1.193	1.239	0.915	1.170	0.562*	0.606
Anemia	0.344*	0.170***	0.624	0.696	1.019	0.555
Total cholesterol	0.622	0.332*	0.358*	0.441	1.483	1.488

Note: p<0.05*, p<0.01**, p<0.001***

4. Association between health behavior and health conditions

Adjusted odds ratios were computed for elevated BMI, blood pressure, total cholesterol, and glucose level, ECG abnormal reading, anemia, and liver diseases in association with health behaviors of eating (i.e. preferring meat or vegetables, eating regularly, and cooking food mainly by frying, broiling /steaming, and eating raw), exercising regularly, and being stressed. None of these behaviors was significantly associated with abnormal ECG readings, anemia, liver diseases, and

glucose level. While eating behavior was not associated with BMI and blood pressure, those who exercised regularly were more likely to have elevated levels of BMI(OR=1.457, p=0.002) and total cholesterol(OR=1.878, p=0.033). Women at higher level of physical activity were less likely to have elevated levels of BMI(OR=0.786, p=0.042) and total cholesterol(OR=0.422, p=0.006) but more likely to have higher level of blood pressure (OR=1.774, p=0.001). Those stressed were more likely to have higher level of total cholesterol (OR=1.844, p=0.034).

<Table 5> Adjusted odds ratios of health conditions, by age, years of residence and health behaviors

variables		BMI	BP	ECG	Anemia	Total cholesterol
Age	Ref 40 & older					
	≤ 24	0.196 ***	0.392 ***	1.193	0.344 *	0.622
	25-29	0.442 ***	0.281 ***	1.239	0.170 **	0.332 *
Years of residence	30-34	0.585 **	0.426 **	0.915	0.624	0.358 *
	35-39	0.756	0.443 **	1.170	0.696	0.441
	Ref: > 5 years					
Food preference	< 3 years	0.896	0.791	0.562 *	1.019	1.483
	3-5 years	0.980	0.916	0.606	0.555	1.488
	Ref: Meat					
Eating regularly	Vegetables	0.992	1.124	1.896	0.591	1.068
	MIxed	1.199	1.237	1.177	0.864	1.623
	Ref: Irregular	1.049	1.066	0.717	0.913	1.127
Cooking style	Ref: Fry					
	Broil, Steam	0.974	1.080	0.970	1.062	0.983
	Uncooked	1.158	0.691	1.447	1.014	1.216
Regular exercise	Ref: 0/week	1.457 **	1.216	1.468	1.170	1.878 *
Lifetime physical activity	Ref: physically inactive	0.786 *	1.774 **	0.852	1.061	0.422 **
Stressed	Ref: not stressed	1.027	0.907	0.837	1.066	1.844*

Note: p<0.05*, p<0.01**, p<0.001***

Ⅳ. Discussion

The overall prevalence of obesity was 15.6% in this study. Compared to the 2008 health examination results by KAHP, the prevalence of obesity among immigrant women (9.9%) in their 20s in this study was slightly higher than that of Korean women(8.7%). Among those in their 30s, however, in their 30s, the difference in obesity prevalence between immigrant wives(20.1%) and Korean women(13.1%) became greater. A number of factors are thought to contribute the obesity problem: adverse eating and physical activity patterns (Kumanyika et al., 2010); and social contexts for obesity development including types of foods and retail food outlets avaliable, accessibility of healthy food, opportunity for physical activity, and exposure to targeted marketing of less healthful foods (Taylor et al., 2006; Powell et al., 2004; Henderson and Kelly, 2005). Yen and Kaplan(1998) suggest that low-SES areas negatively influence physical activity as physical activity-friendly environments are

less common in low-SES areas. In this study, Japanese women were found to perform desirable eating behaviors comparanly. However, a majority of women(72.3%) in this study reported that they do not exercise at all. Anyhow, those who exercised regularly were more likely to have elevated levels of BMI and total cholesterol than those who did not exercise at all. It may have to do with the fact that this was a cross-sectional study and that those who exercised regularly because they were overweight or obese and had higher total cholesterol level. On the other hand, those who were physically active, compared to those inactive, were more likely to have high blood pressure but less likely to have high BMI and total cholesterol. However, this cross-sectional study cannot explain such associations.

Anemia has been one of the most commonly found diseases among marriage immigrant women with 12.1%(Seol, 2006) and the prevalence of heart diseases and apoplexy is five to six times higher than that of the general public. This study reports the prevalence of anemia at 2.3% and ECG abnormal rate at 6.0% among immigrant wives, which is not as high as reported in a previous study but still requires consistent monitoring and close management. Within the immigrant women in the study, patterns of health problems differ by age and country of origin. Filipina women showed relatively high disease prevalence than any other group and had many health risk factors, whileas Vietnamese women were found to have lower disease prevalence. Cultural and behavioral background of the immigrant women are supposed to be associated with varying prevalence of health problems by heritage. Such background, therefore, should be considered importantly in developing and implementing interventions and services. Grouping immigrants together into a small number of large categories may mask important heterogeneity with regard to specific health conditions(WHO, 2008).

Immigrant women in this study were estimated 2 times more likely to be diagnosed with syphilis(0.6%, n=22) than Korean women(0.3%) in Korea(KAHP, 2009). In addition, one case of HIV positive was reported in this study. Bacterial sexually transmitted diseases, which themselves are dangerous, are also known to increase vulnerability to HIV because they can enhance the efficacy of transmission from one person to another(Carballo and Mboup, 2005). It has also been reported that 66% of all heterosexually transmitted HIV infections in EU between 1997 and 2001 were diagnosed in people from countries with high HIV prevalence(Eurosurveillance Weekly, 2002). There is a sufficient need for health education on the prevention of sexually transmitted diseases with multicultural couples.

In the present study, behavior patterns differ by their heritage, age, and years of residence in Korea, which can be attributed to cultural background and experience. As the duration of residence in Korea increased, the stress level was increased. Thirty seven percent of immigrant wives reported experience of severe stress during the last 30 days. Furthermore, the stressed women were estimated 1.8 times more likely to have high total cholesterol. These facts mean managing stress would be the priority topics of health education for immigrant wives. In so doing, psycho-social factors besides stress levels should be included in research and practice, such as isolation, social support, homesickness, and acculturation levels. It is likely that migrant wives come to marry economically challenged, rural, older Korean men from poorer places. Some of them may be expected to carry health profiles associated with poverty(Carballo and Mboup, 2005), thereafter, acculturation will occur as they spend more time in Korea. Acculturation may play a significant role in the association of health problems with increased duration of residence. In studies with Asian and Hispanic adolescents, acculturation to a U.S. lifestyle was shown to be associated with the adoption of unhealthy behaviors, such as sedentary behavior and poor dietary habits(Unger et al., 2004; Gordon-Larsen et al., 2003). Immigrant wives experience daily challenges in their new environment and roles predominantly responsible for the health of the entire family. Their health status and health behavior practices are also challenged in the adjustment process.

Most research including the present study has focused on individual indicators and their effect on health. However, extensive literature indicates that community and contextual factors(e.g., accessibility to healthcare facilities and

heart-healthy foods) are associated with health outcomes in minority populations beyond the impact of individual influences(Morenoff and Lynch, 2004; Papas et al., 2007). Consideration of contextual factors may provide a more complete picture of the relationship between acculturation and health outcomes.

As for limitations of study, the present study is based on information provided by self-report, which may lead to bias from language barrier. Although the survey instrument was translated into 4 different languages and staff members provided assistance throughout the entire survey, the possibility of bias remains. Since this is a cross-sectional study, causal relationship cannot be established between significant variables.

V. Conclusion

The health conditions of migrants have elicited concern from both human rights and public health points of view. Present study has identified some health issues of recent female marriage immigrants to Korea. Patterns of immigrant women's health problems differed by age and country of origin. Behavior patterns also differed by their heritage, age, and years of residence in Korea. Immigrant wives from the Philippines had the highest prevalence of obesity and high blood pressure. Vietnamese and Chinese women were less anemic, and immigrant wives from the Philippines had the largest proportion of hepatitis-B unvaccinated.

In terms of dietary behaviors, Chinese women eat salty and/or spicy food, Cambodian and Vietnamese women eat more meat than vegetables. Japanese women eat regularly, and Filipina and Cambodian women cook their food mostly by frying, more so than women from other countries. Although great majorities of these women neither smoke nor drink, Chinese women present the highest proportions of current smokers and alcohol drinking. Less than a third of the immigrant wives exercise once a week or more frequently except for women from the Philippines. The proportion of women who are stressed often was the highest among Chinese women.

Immigration to Korea by marriage is relatively a new phenomenon, thus continuing surveillance and research are needed to identify health risks, behavior patterns, and their relationships in order to unveil unique characteristics that might contribute to their health and potential influences of acculturation. Interventions and policies for the health of migrant wives, their children and families are required to strengthen cultural competence beyond language translation and adequacy. Empowerment of migrant wives and their families so that they could be competent of recognizing and addressing their health concerns should be one of core areas of health promotion approaches.

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〈국문초록〉

한국 여성결혼이민자의 건강상태와 건강위험요인

목적: 본 연구는 외국인 여성결혼 이민자의 건강위험 요인 및 문제점을 파악함으로서 향후 외국인 여성결혼 이민자의 건강증진 프로그램 지원 및 정책 수립의 기초 자료를 제공하고자 하였다.

방법: 연구의 대상은 지역 보건소 및 동・면사무소 등에 등록된 외국인 여성결혼 이민자 중보건복지가족부의 무료건강검진사업 참여자 3,069명이다. 건강검진은 한국건강관리협회 15개 지부에서 2008년 7월부터 11월까지 5개월간 실시하였으며, 기초, 소변, 간기능, 당뇨, 고지혈증, 빈혈 등 총 21개 검사항목으로 구성되었다. 또한 검진과 함께 자기기입식 설문을 통한 건강행태조사를 실시하였다. 설문은 인구사회통계학적 특성, 식습관, 흡연 및 음주 습관, 신체활동 및 정신건강상태에 관한 항목으로 구성되었으며, 국어, 영어, 중어, 베트남어로 제작되었다.

결과: 결혼이민여성들의 건강문제는 연령과 출신국가에 따라 달랐으며, 건강행태 또한 출신국가, 연령, 한국 거주기간에 따라 다른 양상을 보였다. 질환 의심률은 연령이 높아질수록 유소견율이 증가하는 일반적인 경향을 확인할 수 있었다. 출신국가별로는 필리핀 이주 여성의 질환의심율이 54.7%로 전체 평균인 43.6%를 크게 상회하였고, 베트남 여성의 질환 유소견율이 낮았다.

일본출신 여성이 다른 국가 출신에 비해 건강한 식습관을 지니고 있는 것으로 조사되었다. 여성결혼이민자가 주 1회 이상 음주하는 비율이나 현재 흡연율은 대체로 낮은 수준이었다. 그러나 땀이 베일 정도의 운동을 1주 동안 전혀 하지 않는다는 응답이 72.3%에 달해 평소 건강관리에 대한 관심이 더 필요한 것으로 보였다. 37.1%가 지난 한달 간 심한 스트레스를 경험한 것으로 응답하였으며, 국적별로는 중국출신(43.7%)의 스트레스 경험 비율이 높게 나타났다.

생활습관과 질환유소견율 관련성에서 규칙적으로 운동을 하는 경우 그렇지 않은 경우에 비해 비만(BMI) 및 고지혈증(총콜레스테롤) 유소견율이 높게 나타났다. 이러한 결과는 질환위험이 높다고 인식하는 사람일수록 생활습관 개선에 더 적극적인 것으로 보였다.

결론: 결혼이민자의 건강특성은 연령, 거주기간별, 출신국가별로 다양하므로 이러한 개인적 특성에 맞는 차별화된 건강증진 프로그램과 정책이 개발되어야 한다. 또한 결혼 이민자의 건강위험과 생활습관 실태 및 이들 간의 관련성을 파악하는 지속적인 검진과 연구가 수행되어 보다 실제적인 건강증진 전략개발을 위한 기초정보가 제공되어야 한다.

주제어: 여성결혼이민자, 건강상태, 건강위험요인