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## A qualitative study exploring factors associated with Pap test use among North Korean refugees

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### Abstract

Lack of medical care in North Korea and vulnerability to human trafficking during their migration increase risks of cervical cancer among North Korean refugees. To better understand factors influencing Pap test use, we conducted a qualitative study of 8 North Korean refugees in South Korea. Individual barriers were limited knowledge, lack of perceived need for preventive services, and concerns about costs. Environmental facilitators included having female providers, receiving family support, and free screenings. Refugees' health outlook, including viewing cancers as fatal diseases, hindered seeking Pap tests. Multi-faceted approaches to address individual and environmental factors in promoting Pap tests are warranted.

### Keywords

Cervical cancer screening; North Korean refugee women; qualitative study

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Since the division of Korea in 1945 following World War II, the governments of North Korea and South Korea remain as ideologically disparate countries with strict limitations on the movement of people between the two countries. However, in the mid-1990s, there was a sharp increase in the number of North Korean refugees arriving to South Korea due to a dearth of food, economic crisis, and poor living conditions in North Korea (also known as the Arduous March in North Korea) (Wang, Yu, Noh, & Kwon, 2014). Since then, the number of North Korean refugees entering South Korea has grown at a fast rate. About 2,000 North Korean refugees resided in South Korea in 2006, but this number escalated to nearly 30,212 in 2016 (Ministry of Unification, 2016). Due to this changing demographic pattern, more attention is needed to address the health burdens of the growing North Korean refugee population in South Korea, including women's cervical cancer.

Cervical cancer is one of the most common cancers in women worldwide, particularly affecting women in less developed countries. In 2012, for example, nearly 87% of all cervical cancer related deaths occurred in developing countries (Ferlay et al., 2015). In contrast, developed countries achieved a drastic decrease in the burden of cervical cancer among women through well-established preventive programs (Arbyn, Raifu, Weiderpass,

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Bray, & Anttila, 2009; Vesco et al., 2011). Meanwhile, women from countries with fewer resources appear to face a heightened burden of cervical cancer (International Agency for Research on Cancer, 2015), which is most frequently associated with a lack of regular screening (Dim, Nwagha, Ezegwui, & Dim, 2009; Hyacinth, Adekeye, Ibeh, & Osoba, 2012). For instance, a recent report on the human papillomavirus (HPV) and related cancers among North Korean women revealed that the crude incidence rate of cervical cancer is 15.0 per 100,000 (Bruni et al., 2015), greater than the average incidence rates around the world. In addition, only 6% reported being screened for cervical cancer among a purposive sample of 200 North Korean women recruited from 6 provinces in North Korea (Tran et al., 2011). With a dearth of research on the burden of cervical cancer among North Korean women, greater attention and research are needed to fully understand the manifestation of cervical cancer and the adoption of cervical cancer screening (e.g., a Pap test).

North Korean refugee women are frequently involved in human trafficking and sexual exploitation during their migration (Kim, Yun, Park, & Williams, 2009). This puts them at a higher risk of experiencing gynecological problems upon arrival in South Korea and may contribute to the higher prevalence of gynecological problems. Indeed, Moon et al. (2015) found that the prevalence of HPV infection was significantly higher among North Korean refugees ( $n = 138$ ), compared to their general South Korean counterparts (29% vs. 15%, respectively). While evidence supports that most HPV infections are transient and bring no risk of cervical cancer, a persistent infection with high-risk types of HPV brought about nearly 90% of cervical cancers among Korean women (Bae et al., 2009). Indeed, a clinicopathologic study of 61 North Korean refugee cancer patients treated at the South Korea National Medical Center from 2008 to 2013 reported that cervical cancer in women (31.6%) and thyroid cancer in men and women (19.7%) are the two most common cancers (Park et al., 2014), thus indicating that the risks and burdens of cervical cancer may be greater among North Korean refugee women.

The South Korean national clinical guidelines recommend cervical cancer screening with cytology (a Pap test or liquid-based cytology) every three years for women older than 20 years of age until the age of 74 with more than three consecutive negative results (Min et al., 2015). South Korea also offers national health insurance that includes free biennial Pap test screening for women ages 30 and older (National Health Insurance Service, 2015). Although these studies and the guidelines underscore the necessity of regular Pap test use among North Korean refugees residing in South Korea, no known study has explored what prevents and enables North Korean refugee women's Pap test use in South Korea. Hence, the aim of researchers was to explore the factors associated with receiving a Pap test among North Korean refugee women residing in South Korea.

## METHODS

### Parent Study

The parent study was an exploratory mixed-methods study designed to examine the extent and pattern of healthcare utilization among 329 North Korean refugees before and after arrival to South Korea. Data were collected in 2012. The inclusion criteria were: 1) self-identified as North Korean; 2) aged 18 years or older at the time of departure from North

Korea; 3) at least one year of residency in South Korea; and 4) willing to offer oral consent to participate in the parent study. North Korean refugees who had any acute and/or terminal illness (e.g., acute myocardial infarction and terminal cancer) or psychiatric condition (e.g., schizophrenia, self-reported cognitive impairment) prior to participation were excluded. The parent study was conducted in collaboration with Global Together, a non-profit organization in Seoul aimed at establishing close ties with non-governmental organizations dedicated to issues around North Korean refugees. An experienced outreach coordinator from Global Together contacted 350 potential participants in the Central Seoul area. A total of 329 participants completed the survey.

**Survey**—North Korean refugees who were 18 years at the time of departure from North Korea and had lived in South Korea for 1 year were eligible to participate in the study. Of 331 eligible North Korean refugees, two dropped out before the study had started due to a scheduling conflict. Respondents (N=329) were mostly women (81%) and middle aged (mean 57 years, range 22–87 years). On average, respondents stayed in South Korea for 6 years.

**Individual interviews**—The quantitative survey was followed by qualitative research using semi-structured individual interviews. A subset of participants who completed the survey was chosen for this qualitative investigation because we aimed to explore perceptions and experiences of healthcare utilization in both South Korea and North Korea. Inclusion criteria for individual interviews were: 1) having experience in utilizing health care for themselves and their family member(s) in the preceding year; and 2) willing to offer oral consent to participate in the individual interview. A sample was purposively selected based on their gender, age, social network, and medication-taking status to explore similarities and differences in North Korean refugees' healthcare behaviors (Patton, 2002). Specifically, we performed an iterative process purposively to recruit subsequent interview participants by reflecting on earlier interviews. The research team chose a group of North Korean refugees (five participants) who participated in the quantitative survey and had particular characteristics (e.g., middle-aged females with or without comorbidities who do or do not have adequate social support); the trained coordinator then contacted the selected North Korean refugees by phone. Of 20 invitees, eleven agreed and completed the semi-structured, individual interviews. Reasons for refusal included: (1) schedule conflict (n = 2), (2), not interested (n = 4), (3), change of mind (n = 3), and (4) unable to be reached (n = 2).

**Data collection**—Individual in-depth interviews were conducted for up to two hours either at a private place of the participant's choosing or at the Global Together office at their most convenient date/time. Following a brief introduction of the study, a trained research assistant (RA) discussed the expectations for the interviews as well as the option to withdraw from the study at any time. The RA used an interview guide that was developed based on literature and the study team's experience with North Korean refugees. In addition, the research team revised this interview guide during the study period to incorporate emergent topics. Using this guide, the RA asked a number of open-ended questions regarding their health seeking behaviors and cultural descriptors followed by more specific questions.

Individual in-depth interviews were audiotaped and transcribed verbatim. Each participant was compensated with \$30 to cover her/his time and travel cost.

### Current Study

This paper only presents data relevant to the discussion of cervical cancer and Pap test use among the female participants.

**Interview participant characteristics**—Descriptive statistics were used to summarize the means and standard deviations for continuous variables as well as frequencies and percentages for categorical variables. Statistical analysis was done using Stata 13 software (StataCorp., 2013). Table 1 summarizes the characteristics of individual interview participants (N = 8). Six participants were married and two were widowed. Most were middle-aged, with a mean ( $\pm$ SD) age of 49.8( $\pm$ 11.9) years (range = 37–74 years). The sample population lived in South Korea for an average of 5.8 ( $\pm$ 2.6) years. The majority of the participants had some college education, with a mean of 12.3 ( $\pm$ 2.4) years in school. All lived in the South Korean government-subsidized housing with the exception of one participant who lived by herself. Three of the eight participants indicated that they had no one to turn to for help. Six participants indicated that they were screened for cervical cancer after arrival to South Korea.

**Qualitative data analysis**—The interview data were analyzed using inductive content analysis (Hsieh & Shannon, 2005). Two bilingual (Korean and English) RAs read each transcript multiple times to develop an understanding of each interview and its overarching themes. The two RAs then developed initial coding independently. A discussion among the research team followed in which the discrepancies between the two RAs regarding the initial codes were reconciled. Using the initial coding of the first few interviews, a codebook was established. The rest of interviews were coded using the codebook. If there were newly emergent codes, the codes were added to the codebook and assigned to the interview data. The RAs then grouped the initial codes into subthemes after which the research team members sorted subthemes into themes. The results were finalized after multiple team discussions.

**Trustworthiness**—The following methods maintained the trustworthiness of the study (Lincoln & Guba, 1985): (1) our prolonged experience with cervical cancer research among Korean women ensured credibility; (2) the thick description of study results using verbatim transcripts and selected quotes maximized transferability, thereby enabling the audience to judge whether the study findings can be transferred to other contexts; and (3) a series of discussions of the interview data among all authors ensured confirmability. In addition to trustworthiness, we attempted to minimize methodological issues with variations in translations by only translating the final results, including themes and relevant quotes, into English because all interviews were conducted and analyzed in Korean. Rather than using a professional translator, our bilingual research team translated the findings in order to incorporate an emic view on experiences regarding cervical cancer and Pap test use among North Korean refugees.

**Ethical considerations**—All study procedures were reviewed and approved by the Institutional Review Board. Oral consent was obtained from each participant after ensuring a thorough understanding of the study aim, potential benefits and risks, and voluntary participation.

## RESULTS

Emergent themes with subsequent subthemes from qualitative data are presented in Table 2. Pertinent quotes were selected to elaborate each theme. North Korean refugee women's Pap test use was affected by a number of factors with some acting as a barrier and others as facilitators. These factors are organized into individual (knowledge about cervical cancer and Pap test, cancer worry, perceived need for preventive care, concerns about cost), interpersonal (social support, healthcare providers), community (health outlook), and system (free screening programs) levels. Below we will illustrate each of the themes and subthemes in detail.

### Individual Factors

**Knowledge about cervical cancer and Pap test**—Although more than half of the women in this sample reported receiving a Pap test after their arrival to South Korea, about half of the women were unclear as to what cervical cancer and Pap tests are. For two participants, the individual interview was the first time they were introduced to this terminology and concept. Those who had heard of cervical cancer and Pap tests had been informed through information packets from national health services, their friends, and media; however, some lacked knowledge about the purpose and the target age group for a Pap test.

**Cancer worry**—Cancer worry was a factor that encouraged Pap test use among this sample, although some participants expressed their hesitancy in getting a Pap test for fear of a potential abnormal Pap test result. For example, one woman who had heard about cervical cancer from TV stated:

There is a lot of news on KBS [Korean Broadcasting System; South Korean TV Channel]. It's a bit scary then. They talk about a lot of people dying of cervical cancer and breast cancer. That's why it's a bit scary. I get worried and think I should get [tested] soon.

[Participant 2, screened]

**Perceived need for preventive care**—The majority of the participants showed a lack of perceived need for preventive care such as Pap test use. They were accustomed to seeking care only when they experienced severe symptoms and were not familiar with receiving preventive services. For example, one participant mentioned:

... Since we came here, you know we get tested with our health insurance once a year? *Interviewer:* Yes. A reminder from the national health insurance tells me to go to these places to get these tests. I say – well I would get tested if I had cancer... but just for [preventive exams for] gynecological problems? I didn't go.

[Participant 4, never-screened]

**Concerns about cost**—Despite a free biennial screening program offered by the national health insurance, some participants shared concerns about costs being a barrier to receiving a Pap test. One woman reported:

I have financial constraints. And when my family is having a hard time, I tend to hesitate about [getting a Pap test]. I should get tested but it costs money...

*Interviewer: How about the free screening program? ...* But that starts at age of 40...

[Participant 8, never-screened]

This participant misunderstood the free Pap testing service, which starts at age of 30 not 40. Still, this demonstrates that the perceived costs to receiving a Pap test may deter these women from getting it at the recommended time.

### Interpersonal Factors

**Social support**—Social support from family was reported as a facilitator of Pap test use. For example, one middle-aged woman who recently came to South Korea and is currently living with her children said, “My children tell me to go [get tested]. They kept telling me to go [so I did]”. [Participant 2, screened]

**Healthcare providers (Male vs. Female)**—All participants preferred to have a female healthcare provider as they reported that all OB/GYN doctors are female in North Korea. The majority of the participants expressed embarrassment associated with getting their private parts exposed during a Pap test. The fact that this procedure might be performed by a male healthcare provider was noted as a barrier to getting Pap tests while availability of a female provider at a clinic helped some participants toward their decision to get a Pap test. One participant in her 30s stated:

With cervical cancer testing, my first thought was I should be seen by a female doctor and not a male, regardless whether the test is free or not. That’s what I was most concerned about. In North Korea, there are no males. Only females did gynecological exams. But here there are mostly male doctors. So I thought I should find a female doctor.

[Participant 7, screened]

### Community Level Factor

**Health outlook**—The disparities in available health services, health outcomes, and attitudes towards health between those of North and South Korea seemed to influence the North Korean refugee women’s Pap test use. Several participants explained that in North Korea, cancer is a fatal disease, and thus they view cancer as a non-preventable, non-treatable illness. In contrast, North Korean refugee women noticed people in South Korea as being very concerned about their health, and learned there are screenings and treatment for cancer. One woman in her 30s who lived in South Korea for the last 3 years observed:

[In North Korea] People get diagnosed with cancer very late... . . . In North Korea, people think cancer means death. *Interviewer: I see. Then, what came to your mind when you heard the word cervical cancer after you came to South Korea?* I thought...in North Korea, people can't fix the diseases they have but in South Korea, people get tested for diseases that they don't even have yet. I didn't think I would ever live like this.

[Participant 7, screened]

### System Level Factor

**Free screening programs**—In South Korea, women starting at the age of 30 are eligible for the national health services that offer free biennial screenings, including Pap tests. Most women expressed that such a resource facilitates them to seek a Pap test. A free screening opportunity, public or private (offered by private doctors), also appears to help participants to overcome some of the aforementioned barriers, such as cancer worry or having to see a male healthcare provider, as exemplified by a participant's response, "Of course I should go...when they do it for free..." [Participant 2, screened]

## DISCUSSION

To the best of our knowledge, this is one of the first qualitative studies exploring factors associated with Pap test use among North Korean refugee women. Despite the barriers to receiving a Pap test addressed in this sample (e.g., a lack of perceived need for preventive care, being seen by a male provider), study participants shared several facilitators of Pap test use, such as cancer worry and free cancer screening programs. The results suggest a number of implications for developing a multi-faceted, culturally tailored intervention to improve Pap test use among North Korean refugee women.

The national health insurance service covers all residents in South Korea; as part of the National Cancer Screening Program, a free biennial Pap test screening for women ages 30 and older is offered (National Health Insurance Service, 2016). Offering the free screening program, along with a reminder, served as a strong facilitator to helping the women overcome some of the barriers. However, despite a reminder regarding the screening program, some women in this sample were still unclear about specific information concerning the program, such as the target age range. In particular, the participants were confused by the different age ranges between breast (40+) and cervical (30+) cancer screening programs. Future efforts should be directed towards enhanced advertising and education of current programs to North Korean refugees to help them have a clearer understanding about the free screening program. For example, offering a current reminder with brief information about the cause of cervical cancer and the purpose of the screening program can be helpful to improve their knowledge about cervical cancer and the free screening program.

Our study's findings also have implications for future research and program development in relation to refugee women. Other studies found that refugees tend to seek healthcare mainly for urgent health issues like traumatic experiences during migration rather than for

preventive exams (Correa-Velez, Spaaij, & Upham, 2013; Wang, Kwon, Jeon, & Noh, 2015). For example, Wang et al. (2015) conducted a study on the patterns of healthcare utilization among North Korean refugees (N = 498) and found that they tended to visit their doctor mainly for prominent health issues such as chronic diseases (beta = 0.346,  $p < 0.001$ ) and post-traumatic issues (beta = 0.108,  $p = 0.033$ ). In a quantitative investigation of knowledge, attitudes, and practices about cervical cancer and screening among North Korean women (Tran et al., 2011), the authors also noted the absence of symptoms as one of the reasons for non-receipt of a Pap test. The findings from our qualitative investigation were congruent with those of the previous studies. The salient findings show that the never-screened in this sample had an unfavorable view regarding preventive services and would only seek healthcare when having serious problems such as cancer. Their attitudes toward preventive care appeared to stay the same despite the duration of their stay in South Korea (6+ years). To this end, a comprehensive education program to affect North Korean refugees' attitudes regarding cervical cancer and preventive practices (Pap tests) should be developed to empower them to maintain their cancer screening behaviors.

Internationally, community-based navigator programs are successful in increasing cancer screening among South Korean women (Han et al., 2011; Lee & Jo, 2011) and refugee women in urban communities in the United States (Percac-Lima, Milosavljevic, Oo, Marable, & Bond, 2012). For example, Lee and Jo (2011) found that a culturally appropriate navigator program for breast and cervical cancer screenings was effective in promoting knowledge about cancer screening (Odds ratio [OR]: 3.02, 95% confidence interval [CI]: 1.32 to 6.92,  $p < 0.01$ ) and skill sets for getting screened (OR: 2.46; 95%CI: 1.12 to 5.40,  $p < 0.05$ ) among women in South Korea. Although the access-enhancing approach was relatively successful in South Korean women, no known study has tested a navigator program to promote cancer screenings among North Korean refugees residing in South Korea. Based on the successful results in the previous studies (Lee & Jo, 2011; Percac-Lima et al., 2012), we suggest a navigation program to help North Korean women find an appropriate healthcare provider, particularly for those who encounter challenges in seeking a female healthcare provider in the Korean community (K. Kim, 2015). This strategy may mitigate the North Korean women's anxiety about getting seen by a male healthcare provider.

Refugee women tend to have an increased risk of developing HPV infections and possibly cervical cancer due to the lack of medical care in their country of origin and potential for human trafficking during their migration period (Kim, Yun, Park, & Williams, 2009; Moon et al., 2015). Yet a considerable number of the sample in this study lacked awareness of HPV and cervical cancer and had limited knowledge of the consequences of persistent infections with high-risk types of HPV. Our study findings have implications for healthcare professionals who may provide care to refugees at any point during their resettlement period. During medical encounters, healthcare providers should offer North Korean refugee women a tailored education using lay languages. For example, it is essential to emphasize the higher rates of HPV infection among North Korean refugee women compared to South Korean women due in part to the lack of regular Pap testing in North Korea and the potential for human trafficking during their migration period. The healthcare providers should offer comprehensive preventive healthcare services, including a Pap test, when encountering



North Korean refugee women in a primary care and OB/GYN setting in order to catch those who may come to the clinic only for urgent issues.

This study has several limitations. Because the purpose of the parent study was to explore perceptions and experiences of North Korean refugees' healthcare utilization in both South Korea and North Korea, data saturation was not fully determined based on the discussions around Pap test behaviors. Although we noted that no new themes emerged as we interviewed the final set of interview participants, we cannot exclude the possibility of emergent themes if data saturation were determined based on the current study. The qualitative data were obtained from North Korean refugees residing in Central Seoul Area (mean length of stay $\pm$ SD = 5.8 $\pm$ 2.6); thus their experiences with navigating the South Korea health care system might be different from those just arriving in South Korea. We also noticed that six out of the eight women reported receiving a Pap test after their arrival in South Korea. Of the six women, two were approached by a free, private Pap test screening program. Because of the urban setting of this study, we acknowledge that our findings might not be applicable to those who reside in rural areas where medical resources are not easily available. However, it should be noted that the aim of the researchers was to give rich descriptions regarding perceptions of and experiences with Pap test use among North Korean refugee women who have been underrepresented in the field, rather than making inferences about the general North Korean refugee women in South Korea. To help readers assess the applicability of our study's findings to their own contexts, we ensured transferability by thick descriptions including transcribing verbatim and providing relevant quotes. In addition, two out of the eight women never received a Pap test in this study; thus, their discussion regarding Pap test use might be theoretical rather than based on their experiences. Despite these limitations, to the best of our knowledge, this is one of the first studies to explore factors associated with Pap test use among North Korean refugees residing in South Korea. The results from this study will lay the groundwork for developing an intervention to promote Pap test use among North Korean refugee women.

## CONCLUSIONS

Cervical cancer is the most common cancer among North Korean refugee women residing in South Korea. Most participants emphasized the national health insurance with biennial free Pap test screening as a facilitator of Pap test use. However, the North Korean refugee women in this study are bounded by several barriers, such as lack of knowledge, lack of perceived need for preventive services, and anxiety related to having a male healthcare provider. To mitigate barriers to receiving a Pap test, this study points to the need for a multi-faceted approach for addressing individual, interpersonal, and system level factors that affect North Korean women's Pap test use. Further research is needed to develop a culturally tailored intervention program including education targeting knowledge and perception regarding cervical cancer and Pap tests and access-enhancing approach led by a navigator.

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**Table 1.**

Sample characteristics (N = 8)

Variables	Age (years) Mean±SD: 49.8±11.9	Marital status	Education (years) Mean±SD: 12.3±2.4	Years in South Korea Mean±SD: 5.8±2.6	Having no one to turn to for help when having financial problems	Pap test use
	<40 40–59 60+	Married (M) Widowed (W)	High school (HS) Some college+	3 4–6 7–10	No Yes	Screened Never-screened
Participant 1	40–59	M	HS	7–10	Yes	Screened
Participant 2	40–59	W	HS	3	Yes	Screened
Participant 3	40–59	W	Some college	7–10	Yes	Screened
Participant 4	60+	M	Some college	7–10	Yes	Never-screened
Participant 5	40–59	M	HS	3	No	Screened
Participant 6	40–59	M	HS	4–6	No	Screened
Participant 7	<40	M	Some college	3	No	Screened
Participant 8	<40	M	HS	4–6	Yes	Never-screened

Table 2.

Factors associated with Pap test use

Category	Subcategory	Sample quote
Individual factors	Knowledge about cervical cancer and Pap test	<p>“We never heard of ‘cancer’ [in North Korea]. I never did. Since their [North Korean] hospitals don’t know, when North Koreans come to South Korea, they get diagnosed [with cancer] and receive surgery but they didn’t know they were sick before or if they had cancer...I didn’t know or heard of anyone who died of cancer [when I was in North Korea] ... [In North Korea] I have never heard of cervical or breast cancer. When I first came to South Korea, I didn’t know what they were talking about.” [Participant 4, never-screened]</p> <p>“I have never heard of it [cancer]. I don’t know cervical cancer...but [I heard of] ectopic pregnancy.” [Participant 3, screened]</p>
	Cancer worry	<p>“If I never get tested and I continue putting it off...I am afraid that I might get cancer... so I want to get tested quickly and know for sure. If I have it [cancer] or not.” [Participant 8, never-screened]</p> <p>“There is a lot of news on KBS [Korean Broadcasting System; South Korean TV Channel]. It’s a bit scary then. They talk about a lot of people dying of cervical cancer and breast cancer. That’s why it’s a bit scary. I get worried and think I should get [tested] soon.” [Participant 2, screened]</p>
	Perceived need for preventive care	<p>“If I am very sick, I have to go, go get tested. There is no annual check-up before you get sick [in North Korea], like here. When you get sick, you want to find out what disease you have, so you go [to the hospital] then.” [Participant 5, screened]</p> <p>“I only go when I feel I really can’t put it off anymore. Like I said, I usually wait. We North Koreans are not very sensitive to diseases.” [Participant 3, screened]</p> <p>“Why would I [get screened] when I am not sick? Maybe if I am dying [I would get tested], before [I wouldn’t] ... Since we came here, you know we get tested with our health insurance once a year? <i>Interviewer: Yes. A reminder from the national health insurance tells me to go to these places to get these tests. I say – well I would get tested if I had cancer...but just for [preventive exam for] gynecological problems? I didn’t go. I don’t know.</i>” [Participant 4, never-screened]</p>
	Concerns about cost	<p>“I have financial constraints. And when my family is having a hard time, I tend to hesitate about [getting a Pap test]. I should get tested but it costs money... <i>Interviewer: How about the free screening program? ...But that starts at age of 40...</i>” [Participant 8, never-screened]</p> <p>“I should get tested now but I haven’t been able to because of money.” [Participant 3, screened]</p>
Interpersonal factors	Social support from families	<p>“My children tell me to go [get tested]. They kept telling me to go [so I did].” [Participant 2, screened]</p>
	Healthcare providers (male vs. female)	<p><i>Interviewer: Do only female doctors examine in North Korea?</i> Yes. Only women. All OB/GYN doctors are female in North Korea. Here, when a male doctor examines you, I first thought, it is very embarrassing. There are males and females... so I am reluctant [to get tested].” [Participant 2, screened]</p> <p>“With cervical cancer testing, my first thought was I should be seen by a female doctor and not a male, regardless whether the test is free or not. That’s what I was most concerned about. In North Korea, there are no males. Only females did gynecological exams. But here there are mostly male doctors. So I thought I should find a female doctor.” [Participant 7, screened].</p>
Community level factors	Health outlook	<p>“About health...South Korean...about health. What do you say? You know... you know what I mean... <i>Interviewer: Do you think they are concerned about their health?</i> Yes, yes. Very much. They are very interested about [their health].” [Participant 5, screened]</p> <p>“In South Korea, there is a lot of people at hospitals. They worry over small illnesses, but we [North Koreans]...maybe because we don’t even have basic knowledge about cervical cancer? We don’t really pay attention [to preventing cervical cancer].” [Participant 3, screened]</p> <p>“When I was in North Korea, they didn’t use the word cancer but instead incurable disease [<i>bul-chi-byeong</i> in Korean]. So I knew cancer as something you die of...but here...[it is different, although it’s not good].” [Participant 8, never-screened]</p> <p>“[In North Korea] people get diagnosed with cancer very late... In North Korea, people think cancer means death. <i>Interviewer: I see. Then, what came to your mind when you heard the word cervical cancer after you came to South Korea?</i> I thought...in North Korea, people can’t fix the diseases they have but in South Korea, people get tested for diseases that they don’t even have yet. I didn’t think I would ever live like this.” [Participant 7, screened]</p>

Category	Subcategory	Sample quote
System level factors	National and private free cancer screening program	<p>“Interviewer: For females, there are screenings for cervical cancer and breast cancer. Have you received them before? Yes. I got all of them... Once a year, because it’s free.” [Participant 5, screened]</p> <p>“Of course I should go...when they do it for free...” [Participant 2, screened]</p> <p>“[I got screened] since it’s free. If I had to pay, I wouldn’t have.” [Participant 3, screened]</p> <p>“Interviewer: what made you get tested for cervical cancer? A doctor offered free mammogram and Pap test screenings to about 60 North Korean refugees. The doctor called all refugees’ organizations and offered the screenings. So... [I got it].” [Participant 1, screened]</p>

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