Suicidal ideation among North Korean refugees in South Korea: Exploring the influence of social network characteristics by gender

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Abstract

Rates of death by suicide among North Korean refugees are three times higher than those among their host-country counterparts in South Korea. However, social and cultural factors predicting suicidality among North Korean refugees are not well known. Thus, we explored how social networks affect suicidal ideation in a sample of 405 North Korean refugees in South Korea using egocentric network data. Network diversity (number of different types of ties) was a protective factor for suicidal ideation among women. Having a help-providing and trustworthy church-based tie was a protective factor for women, whereas it was a risk factor for men. It is likely that women connected to people in diverse social contexts received more support to effectively deal with adversities. Because South Korean churches provide tailored worship services and financial aid to North Korean refugees, women might receive emotional comfort from church-based ties whom they can trust and receive help from, whereas men might become distressed about being financially dependent on others, which contradicts cultural expectations of a man's traditional role. Our findings have implications for mental health practitioners serving vulnerable populations, and highlight the importance of understanding the cultural context of social networks and gender in suicide research.

Keywords

gender, North Korean refugees, social network analysis, South Korea, suicidal ideation

Introduction

Rates of death by suicide and suicidal ideation among North Korean (NK) refugees have been reported to be 0.09% and 20.9%, respectively, which are three times higher than the rates—0.03% and 6.8%, respectively—among their host country counterparts in South Korea (SK; Kim & Jung, 2015). This latter in turn is twice the average rate of death by suicide among all Organisation for Economic Co-operation and Development (OECD) countries (OECD, 2016). Further, although the OECD reported that suicide rates have decreased in many member countries since 1990, they have sharply increased in SK (OECD, 2016). Many NK refugees experience trauma and violence before and during migration, placing them at high risk of poor mental health (Um et al., 2015) and suicidality. After resettlement in SK, although NK refugees share the same heritage as SKs, NK refugees struggle to adapt to SK culture due to differences in language, customs, and culture between the two countries, and face difficulties in making social relationships with SKs, who have historically valued monoculturalism (Min, 2008). Despite the urgent need to investigate suicidal behavior in this high-risk population, little is known about what factors predict suicide risk among NK refugees. This knowledge is critical to inform the

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design of effective interventions and prevention initiatives.

Prior studies have shown that adverse circumstances and life event stress are associated with suicide risk (Cho & Haslam, 2010; Stein et al., 2010). Social isolation in particular has been found to be a potent risk factor for suicidality across various populations (Fässberg et al., 2012; Joiner, 2005; Van Orden et al., 2010). This is the premise of Joiner's (2005) interpersonal theory of suicide, which posits that individuals who possess either the perception of social isolation (i.e., loneliness and the absence of reciprocally caring social relationships) or a sense of burdensomeness on significant others (i.e., feelings of being a liability to others and cognitions of self-hatred) are likely to experience suicidal ideation. Hence, interventions using social connectedness are a promising avenue for suicide prevention in the general population (Centers for Disease Control and Prevention, 2015). However, previous studies generally have measured social connectedness merely by aggregating it into a scale of social support (Cho & Haslam, 2010; Kim et al., 2013; Kleiman & Liu, 2013). This methodology precludes our understanding of who provides support and the nature of their relationships (Smith & Christakis, 2008) related to suicidal behavior. Such methodological limitations might explain why some of the very few studies on NK refugees' social support and mental health or suicidality produced mixed findings (Eom & Lee, 2004; Kim et al., 2013; Park & Yoon, 2007). Because social support is only one of the possible functions of an individual's social network (i.e., the web of social relationships around an individual; Smith & Christakis, 2008), it is important to analyze specific characteristics of social networks to better inform culturally appropriate interventions. To fill these research gaps, this study explored how specific social network characteristics can affect suicidality among NK refugees who reside in SK.

Social capital theory (Lin, 1999) posits that an individual's network diversity is associated with positive well-being and mental health (Erickson, 2003). That is, different types of social ties (i.e., links between two social units) provide varying types of support and resources (Ryan et al., 2008; Wellman & Wortley, 1990); hence, diversified networks enable people to develop a better sense of control of their lives and have access to a wider range of information, which can directly or indirectly improve their mental health (Erickson, 2003; Ferlander, 2007; Fiori et al., 2006; Lin & Erickson, 2008). At the same time, some scholars have cautioned that not all forms of social ties are associated with beneficial effects on mental health—negative social interactions can produce more harm than good (Abrutyn & Mueller, 2014; Fulginiti et al., 2016;

Thoits, 2011). Likewise, studies have found that different types and qualities of social networks surrounding an individual have differential effects on mental health (Ferlander, 2007; Wellman & Wortley, 1990). Clearly, detailed measures of social networks need to be examined to understand social ties and their positive or negative influences on mental health, particularly suicidality.

Personal social network (egocentric) data provide information on to whom people are connected (i.e., alters), types of relationships with alters (e.g., family, friend, coworker, etc.), characteristics of alters (e.g., age, gender, race, etc.), and function of the relationship (e.g., emotional, instrumental, or informational support, etc.). With such data, we can analyze several forms of social network characteristics and understand how these social networks might affect an individual's behavior (Rice & Yoshioka-Maxwell, 2015). Many existing social networks of NK refugees have been disrupted as a result of forced migration, making it important to understand how they establish new social ties in the host society to access resources and support. However, to date, very little is known about the social network characteristics of NK refugees (Yeom & Kim, 2011).

Current study

The current study used egocentric data collected from a sample of 405 NK refugees living in SK and explored the effects of social network characteristics on suicidal ideation in men and women. The focus regarding social network characteristics in this study is on the composition of networks in terms of diversity and type–function interactions. We first explored whether network diversity (number of types of ties) was associated with suicidal ideation. Then, we explored how different type–function interactions were associated with suicidal ideation.

We focused on three types of ties—family (Cho & Haslam, 2010; Nock et al., 2008), friends (Bearman & Moody, 2004; Van Orden et al., 2010), and church-based acquaintances (Tsai et al., 2014)—which are predictive of suicidal behaviors among other populations. These three types of ties are particularly important for NK refugees. Having supportive family and friends, for example, reduced mental distress (Park & Yoon, 2007). More importantly, many churches in SK provide services and financial support to NK refugees, motivating the majority of NK refugees to attend churches (Bell, 2013). Qualitative studies indicated that NK refugees in SK go to church to seek emotional and material support (Lee, 2005), and hope for job placements, connections with others, and to be treated similar to SKs by attending church (Han, 2016; Lee, 2005). Prior research

has shown that NK refugees consider relationships with people they meet in churches to be significant sources of emotional support (Bell, 2013). However, we have no knowledge of how church-based ties are associated with NK refugees' mental health.

Regarding the function of social ties, we focused on individuals whom our respondents could trust and who provided instrumental help to respondents during hardship. Because NK refugees tend to be very suspicious of others, a learned behavior in NK (Min, 2008), it is critical to examine their trusted social ties rather than assuming that they trust everyone in their networks. In addition, examining ties who provide instrumental help is important because studies have found that the majority of NK refugees receive instrumental support from governmental or nongovernmental organizations, churches, volunteer helpers, and many other individuals due to their multidimensional hardships (Bell, 2013; Kim, 2005; Min, 2008). Thus, the type–function interactions in our study were classified as kin-help, kin-trust, friend-help, friend-trust, church-help, and church-trust ties.

The current study employed gender-stratified analyses throughout all models. Prior studies on suicidality have emphasized the need to stratify analyses by gender because of salient gender differences in suicidal behavior and its underlying etiology (Canetto & Sakinofsky, 1998; Fässberg et al., 2012; Van Orden et al., 2010). Research has found that men are more likely to become suicidal in response to financial or work-related issues, whereas women are more likely to become suicidal due to relationship issues (Canetto & Lester, 1998; Heikkinen et al., 1994). Moreover, gender differences have emerged in social network involvement and the effects of social networks on mental health (Kawachi & Berkman, 2001; Thoits, 2011). Specifically, prior research has found that Korean men considered instrumentality (defined by independence, utilitarianism, initiative, and competence) most important, expected practical returns and mutual help, and were active in social relationships, whereas Korean women considered expressivity (defined by dependence, empathy, passiveness, and consideration) most important, expected emotional support and sympathy, and were passive in social relationships (Kim & Kim, 2003). These differences were also significantly associated with distinct gender role identities between Korean men and women (Kim & Kim, 2003). Thus, it is important to identify potentially different patterns of risk and protective factors related to suicidality by gender.

This study explored two research questions: (a) How do different social network characteristics (i.e., network diversity and type–function interactions) affect suicidal ideation among NK refugees in SK? (b) Are these effects similar or different by gender? To the best

of our knowledge, this is the first empirical study to examine detailed measures of social network characteristics, particularly in relation to suicidality, among NK refugees.

Methods

Study participants

A sample of 407 NK refugees living in SK and aged 19 or older was recruited from April to May 2014. Recruitment occurred by snowball sampling, which is the most commonly used sampling strategy to collect data from NK refugee participants due to the lack of a sampling frame (Um et al., 2015). In addition, NK refugees are a hard-to-reach population because many of them are suspicious about the possibility of being monitored by the SK government. They are particularly reluctant to reveal their identities or experiences to SKs because of fears that their families left behind in NK will be in danger in case their escape from NK is reported to the NK government (Min, 2008). For these reasons, it is impractical to employ random sampling techniques for this population. To reduce potential recruitment bias, initially approached participants (i.e., seeds) could suggest only four referrals. We also used long chains of recruitment to further minimize the initial seeds' influence on the final composition of the study sample (Kim & Jung, 2015). Participants recruited by this procedure were living in various districts across three metropolises and provinces (Seoul, Gyeonggi Province, and Incheon), where more than half of all NK refugees in SK reside (Ministry of Unification, 2016). A trained researcher and interviewer visited each household. Surveys were self-administered after obtaining written informed consent. Each participant received 20,000 Korean won (approximately US$20) as compensation for their participation. Among 407 participants who were interviewed, two participants with incomplete data were removed, generating a sample of 405 participants. The institutional review board at Korea University approved all survey items and procedures.

Measures

Suicidal ideation. Suicidal ideation was assessed by a five-item suicidal ideation scale (Harlow et al., 1986). Participants were asked how often during the previous year they had had suicidal thoughts and attempted suicide, with response options ranging on a five-point Likert scale from 0 (almost never) to 4 (almost always). Items were "I have thought about suicide," "I have recently wanted to die," "I have told someone that I wanted to kill myself," "I imagine my life will end

by suicide," and "I have made attempts to kill myself" ($\alpha = .93$). A total score was calculated by summing the five items. Because of high skewness and kurtosis and excessive zeros, this variable was dichotomized to indicate at least one experience of suicidal ideation during the previous year. This is a common method to operationalize suicidal ideation in the suicide literature (Johnson et al., 2011).

Social networks. Social networks were measured by each respondent's egocentric (personal) network data, which were collected by employing a name-generating interview technique used in previous studies (Burt, 1984; Rice et al., 2011). As part of the self-administered survey, participants were asked about alters in their social networks: "We would like to understand your social relationships with the most important people to you. Please name five people who you have stayed in contact with and who have influenced you the most during the past six months. These people can include family, friends, coworkers, teachers, doctors, and so on." Participants were then asked about the following information for each alter: (a) type of relationship (spouse, parent, sibling, children, other family, coworker, friend, neighbor, church acquaintance, or other); (b) demographic characteristics of each alter, including gender, age, and nationality; (c) length of relationship (years); and (d) function of the relationship as a source of social support (i.e., degree of closeness, trustworthiness, or instrumental helpfulness during hardship) using a five-point Likert scale ranging from 1 (not at all) to 5 (extremely).

In the present study, social network characteristics were operationalized as *network diversity* and the *type–function interactions*. Network diversity was defined as the number of types of ties. Type–function interactions were created by intersecting these two characteristics (i.e., types and functions) and dichotomizing each variable to indicate the presence of at least one tie (coded as 1) or the absence of a tie (coded as 0) in each participant's network. We used kin, friend, and church ties for the types of ties, and help-providing and trustworthy ties for the function of ties. A tie's function as trustworthy or helpful was determined by responses of 4 (very) or 5 (extremely) to the corresponding questions. Initial type–function interaction variables in this study were kin-help, kin-trust, friend-help, friend-trust, church-help, and church-trust ties.

Covariates. Sociodemographic characteristics of age (years), marital status (1 = married or cohabiting, 0 = separated or single), duration of residence in SK (years), religious affiliation (1 = Christian, 0 = not Christian; 85% of Christians in our study reported attending church at least three or four times a month),

and perceived socioeconomic status in SK (1 = low, 0 = low to middle, middle, middle to high, or high) were included as covariates. Self-esteem has been found to be associated with suicidal ideation in previous studies (Bearman & Moody, 2004; Johnson et al., 2011). The Rosenberg Self-Esteem Scale (Rosenberg, 1965) measured global self-esteem with 10 items and a four-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree). Negatively worded items were reverse scored. A total score was calculated by summing the items, with higher scores indicating higher self-esteem ($\alpha = .80$). Self-rated health is also known to be associated with suicidal ideation (Van Orden et al., 2010). Participants' self-rated health status was measured by one item with a five-point scale: "Compared to your past (e.g., in North Korea or during migration), how would you rate your health?" Response options were 1 (very poor), 2 (poor), 3 (similar), 4 (good), and 5 (very good). Social network covariates such as mean degree of closeness in network and mean length of relationship were included. Mean degree of closeness was measured by one item with a five-point Likert scale ranging from 1 (not at all) to 5 (extremely), which was asked for all alters: "How close is your relationship with (alter)?" Average scores were calculated. Mean length of relationship was measured by one item asked for all five alters: "How long have you known (alter)?" Average duration (years) was calculated.

Statistical analyses

As described previously, this study used gender-stratified models. Chi-square tests and independent-group *t*-tests were performed to compare descriptive statistics and social networks by past-year suicidal ideation in men and women (Table 1).

Phi coefficients were used to examine correlations between dichotomous social network variables, whereas point-biserial coefficients were used to examine correlations between continuous and dichotomous social network variables. Strong correlations were found in the initial type–function interaction variables (Table 2). Phi coefficients ranged from .94 (women) to .95 (men) between kin-help and kin-trust ties, from .70 (men) to .74 (women) between friend-help and friend-trust ties, and from .87 (men) to .90 (women) between church-help and church-trust ties. To avoid multicollinearity issues in multivariable logistic regression models, we created new categorical social network variables representing the intersection of types (i.e., kin vs. church) and functions (i.e., help vs. trust) and then created mutually exclusive dummy variables. These new variables were kin-help and kin-trust, kin-help only, kin-trust only, and kin ties who are neither helpful nor trustworthy; friend-help and friend-trust, friend-help only,

Table 1. Univariable comparison of descriptive statistics and social network variables by past-year suicidal ideation (stratified by gender).

	Male (n = 132)				Female (n = 273)			
	Yes	No			Yes	No		
	% or M (SD)	% or M (SD)	χ^2 or t[b]		% or M (SD)	% or M (SD)	χ^2 or t[b]	
N	33	99			94	179		
Social network variables								
Network diversity[a]	2.18 (0.81)	2.16 (1.00)	−0.11		1.91 (0.91)	2.23 (0.84)	**2.90**	
Any kin-help tie	36.36	49.49	1.72		36.17	55.87	**9.57**	
Any kin-trust tie	36.36	50.51	1.99		38.30	59.22	**10.81**	
Any friend-help tie	81.82	68.69	2.12		64.89	58.66	1.01	
Any friend-trust tie	75.76	72.73	0.12		68.09	65.92	0.13	
Any church-help tie	27.27	9.09	**6.95**		11.70	22.91	**5.02**	
Any church-trust tie	24.24	8.08	**6.07**		12.77	24.02	**4.85**	
Covariates								
Age	34.33 (9.82)	40.65 (11.87)	**2.76**		40.03 (12.07)	42.08 (13.01)	1.27	
Married	63.64	73.74	1.23		65.96	70.95	0.72	
Low socioeconomic status in SK	51.52	43.43	0.65		48.94	45.25	0.34	
Years lived in SK	8.05 (3.62)	6.40 (3.99)	−2.09		6.54 (3.33)	5.83 (3.31)	−1.68	
Christian	72.73	63.64	0.91		65.96	70.95	0.72	
Self-esteem	27.58 (5.73)	30.63 (3.93)	**3.42**		27.13 (4.03)	30.15 (3.77)	**6.14**	
Self-rated health	2.85 (1.00)	3.42 (1.12)	**2.63**		2.43 (0.99)	3.08 (1.13)	**4.73**	
Mean degree of closeness	4.08 (0.54)	3.96 (0.63)	-0.97		3.82 (0.62)	4.01 (0.58)	**2.48**	
Mean length of relationship	6.46 (4.86)	7.92 (8.29)	0.96		6.22 (6.04)	8.28 (7.29)	**2.34**	

Numbers in bold are statistically significant at $p < .05$. [a]Number of network types. [b]Chi-square tests for percentage differences, *t*-tests for mean differences.

Table 2. Zero-order correlation coefficients (phi coefficients) of social network variables and suicidal ideation.

Variable	1	2	3	4	5	6	7	8
1. Suicidal ideation	–	**−0.17**	**−0.19**	**−0.20**	0.06	0.02	**−0.14**	**−0.13**
2. Network diversity[a]	0.01	–	**0.44**	**0.51**	0.09	**0.14**	**0.33**	**0.33**
3. Kin-help tie	−0.11	**0.35**	–	**0.94**	0.05	−0.04	**0.12**	**0.13**
4. Kin-trust tie	−0.12	**0.43**	**0.95**	–	−0.02	−0.04	0.09	0.10
5. Friend-help tie	0.13	−0.10	0.07	0.08	–	**0.74**	0.06	0.03
6. Friend-trust tie	0.03	−0.01	0.07	0.12	**0.70**	–	−0.01	0.01
7. Church-help tie	**0.23**	**0.30**	−0.06	−0.06	**−0.19**	−0.11	–	**0.90**
8. Church-trust tie	**0.21**	**0.25**	−0.11	−0.07	**−0.18**	−0.09	**0.87**	–

Numbers in bold are statistically significant at $p < .05$. Coefficients in lower left side are for male sample (n = 132). Coefficients in upper right side are for female sample (n = 273). [a]Point-biserial correlation coefficients were calculated for this variable.

friend-trust only, and friend ties who are neither helpful nor trustworthy; and church-help and church-trust, church-help only, church-trust only, and church ties who are neither helpful nor trustworthy.

Based on a methodology suggested by Hosmer et al. (2013), social network variables and covariates associated with suicidal ideation at $p < .10$ in men or women were included in the subsequent multivariable models. The only exception was the religious affiliation variable when the independent variable included a church-based tie, given the importance of controlling for this variable in this case. Multivariable logistic regression analyses were divided into two parts: analyses examining (a) the main effect of network diversity on suicidal ideation and (b) the effects of different type–function interactions on suicidal ideation. The newly created categorical type–function interaction variables were used in the latter analyses. All analyses for the current study were performed using Stata 12.0.

Results

In this sample, 25.0% of men and 34.4% of women reported contemplating suicide during the previous year. Regarding social networks, both men and women had an average of two types of social ties in

their networks, ranging from one to five types for men and one to four types for women. Regarding specific social ties, 46.2% of men and 49.1% of women had at least one help-providing kin tie; 47.0% of men and 52.0% of women had at least one trustworthy kin tie; 72.0% of men and 60.8% of women had at least one help-providing friend tie; 73.5% of men and 66.7% of women had at least one trustworthy friend tie; 13.6% of men and 19.1% of women had at least one help-providing church tie; and 12.1% of men and 20.2% of women had at least one trustworthy church tie in their networks.

Table 1 presents univariable comparisons of demographic and social network characteristics by suicidal ideation in men and women. Among male respondents, having a help-providing church tie ($\chi^2[1] = 6.95$, $p < .01$) and a trustworthy church tie ($\chi^2[1] = 6.07$, $p < .05$) was positively associated with suicidal ideation.

Among female respondents, more network diversity ($t[271] = 2.90$, $p < .01$) and having a kin-help tie ($\chi^2[1] = 9.57$, $p < .01$), a kin-trust tie ($\chi^2[1] = 10.81$, $p < .01$), a church-help tie ($\chi^2[1] = 5.02$, $p < .05$), and a church-trust tie ($\chi^2[1] = 4.85$, $p < .05$) was inversely associated with suicidal thoughts.

Results of the multivariable logistic regression analyses of network diversity and past-year suicidal ideation among women are presented in Table 3. Network diversity ($OR = 0.63$; 95% CI = 0.44, 0.89) decreased the odds of suicidal ideation. Table 4 shows results of multivariable logistic regressions of the new type–function interaction variables and suicidal ideation. Having at least one help-providing and trustworthy church-based tie increased the odds of suicidal ideation ($OR = 6.18$, 95% CI = 1.45, 26.36) among men but decreased the odds of suicidal ideation ($OR = 0.37$, 95% CI = 0.15, 0.89) among women. Of note, we tested an interaction term of gender and help-providing and trustworthy church ties. Results confirmed significant gender differences ($OR = 0.07$, 95% CI = 0.02, 0.36). Moreover, we conducted sensitivity analyses using a subsample of participants who identified themselves as Christians (87 men and 189 women); however, substantive findings remained the same. Therefore, analyses are reported for the entire sample (132 men and 273 women).

Discussion

The current study explored the associations between social network characteristics and past-year suicidal

Table 3. Multivariable logistic regression analyses of network diversity and past-year suicidal ideation (female sample; $n = 273$).

	OR	95% CI
Network diversity[a]	**0.63**	0.44, 0.89
Years lived in SK	**1.12**	1.02, 1.22
Self-esteem	**0.83**	0.76, 0.89
Self-rated health	**0.61**	0.47, 0.80
Mean degree of closeness	1.02	0.59, 1.76
Mean length of relationship	**0.95**	**0.90, 0.99**

Numbers in bold are statistically significant at p < .05. Dependent variable is past-year suicidal ideation. [a]Number of network types.

Table 4. Multivariable logistic regression analyses of (new) type–function interactions and past-year suicidal ideation (stratified by gender).

	Male ($n = 131$)		Female ($n = 273$)	
	OR	95% CI	OR	95% CI
Kin ties[a]				
Kin-help only	–		–	
Kin-trust only	–		0.93	0.16, 5.27
Kin-help and kin-trust	–		0.49	0.23, 1.05
Church ties[b]				
Church-help only	1.73	0.09, 32.22	0.41	0.02, 7.40
Church-trust only	–		0.44	0.07, 2.76
Church-help and church-trust	**6.18**	**1.45, 26.36**	**0.37**	**0.15, 0.89**
Age	**0.93**	**0.89, 0.97**	–	
Years lived in SK	1.10	0.97, 1.23	**1.12**	1.02, 1.22
Christian	1.04	0.36, 3.02	1.14	0.59, 2.20
Self-esteem	**0.83**	**0.74, 0.93**	**0.81**	**0.75, 0.88**
Self-rated health	**0.61**	**0.39, 0.95**	**0.63**	**0.48, 0.83**
Mean degree of closeness	–		1.32	0.74, 2.38
Mean length of relationship	–		0.96	0.90, 1.02

Numbers in bold are statistically significant at $p < 05$. Dependent variable for both models is past-year suicidal ideation. [a]Kin ties who are neither helpful nor trustworthy is reference group. [b]Church ties who are neither helpful nor trustworthy is reference group.

ideation among NK refugees who live in SK. This study also explored whether these associations differ by gender. Guided by social capital theory and evidence from the literature, this study conceptualized social network characteristics as network diversity and type–function interactions. We found that network diversity was a protective factor for suicidal ideation among women. In addition, being connected to a help-providing and trustworthy church tie was a risk factor for men but a protective factor for women in our study sample. Findings of this study reinforce the importance of using detailed measures of social networks and developing suicide prevention programs tailored for NK refugees while paying attention to gender differences.

This study found that having a more diverse network protected NK refugee women from contemplating suicide, which is consistent with previous studies that found a protective effect of network diversity on mental illness in the general population (Erickson, 2003; Ferlander, 2007; Lin & Erickson, 2008). It is likely that NK refugee women who had more social relationships with people in various social contexts received more resources and support to deal effectively with adversities in their lives. In addition, NK refugee women in our study reported having less diverse social networks than men, which is consistent with findings of previous studies in the general population (Erickson, 2003; Lin & Erickson, 2008) and among NK refugees living in SK (Yeom & Kim, 2011). Lin (1999: 30) argued that the focal point of social capital is the "investment in social relations with expected returns." It is possible that women in our study gained more from their relationships than they expected, whereas men did not, thus explaining why network diversity served as a protective factor regarding suicidal ideation for women only. In fact, these findings are in line with those of a qualitative study that found NK refugee men were more likely to form diverse networks so that they can actively seek resources when necessary, whereas NK refugee women generally maintained networks limited to their spouse, intimate partner, or children; however, women's level of life satisfaction was higher than that of men (Yeom & Kim, 2011). This qualitative study had a very small sample ($N = 15$) of individuals who had lived in SK for three years, which might not be a sufficient timeframe to develop social networks. Future studies should further investigate why diverse networks are negatively associated with suicidality among NK refugee women, but not their male counterparts.

In this study, being connected to help-providing and trustworthy church ties was a risk factor for suicidal ideation among men, whereas being connected to such ties was a protective factor among women. Results from the male sample were inconsistent with previous studies, whereas those from the female sample were consistent with the literature (Tsai et al., 2014). These mixed findings are consistent with previous studies that indicated social ties can have both positive and negative influences on mental health (Abrutyn & Mueller, 2014; Thoits, 2011). The literature has indicated that church-based ties exert a positive influence on mental health because these relationships are usually strong and unique due to the nature of shared beliefs and values, which enhances an individual's sense of belongingness (Krause & Wulff, 2005). In addition, previous studies have documented that women are more likely to exchange emotional support and be satisfied with their networks, whereas men are more likely to exchange material support in their social networks (Fiori et al., 2006; Wellman & Wortley, 1990). Likewise, NK refugee women in our study might have received emotional comfort through relationships with church ties whom they can trust and have received help from. In contrast, NK refugee men might have become distressed about being financially dependent on others, which contradicts cultural expectations regarding a man's traditional role. Previous studies have noted that despite churches' positive intentions, NK refugees expressed feeling inferior to SKs in terms of their social statuses (Chung, 2016) and were also sometimes humiliated and pressured to meet the requirements for financial aid (Lee, 2005). Although these studies did not specify whether these negative experiences were limited to men, it is probable that NK refugee men were more likely to express such distress, considering prior research (Kim & Kim, 2003) reporting that Korean men prioritize mutual help in social relationships. Hence, although church-based social ties might be trustworthy and provide instrumental support to NK refugee men, the subtle power dynamics created in these relationships may have harmed these men's egos, potentially causing increased distress related to suicidal thoughts. However, gains related to emotional support might have surpassed the stress caused by these relationships for NK refugee women. It is important to note that these findings warrant cautious interpretation. Unlike how we initially aimed to identify unique associations between different functions of the same types of ties (e.g., church-help ties and church-trust ties) and suicidality, they were too closely correlated to identify independent effects. The new categorical type–function interaction variables that we created for the multivariable logistic regression models had few observations in the church-help only and church-trust only categories. Hence, it is difficult to determine whether our results are due to statistical power issues or substantive findings.

Our study findings echo the alarmingly high prevalence of suicidal ideation among NK refugees in SK found in previous studies (Kim & Jung, 2015; Kim et al., 2013), underscoring the urgency for more research and services related to suicide prevention for this population. In particular, suicide screening and assessment are needed in the early stage of resettlement because our study findings indicate that the longer NK refugees lived in SK, the more they contemplated suicide. Prior research on suicidality has shown that suicide prevention efforts should start at the point of ideation (Johnson et al., 2011) because suicidal ideation and attempts are viewed on a continuum of suicide and are among the strongest predictors of death by suicide (Nock et al., 2008).

Findings of this study have implications for practitioners serving vulnerable populations. They also underscore the importance of paying attention to the cultural context of social networks and gender when conducting research on suicidal behavior. Our study findings suggest that suicide intervention and prevention programs for NK refugees can be designed using their significant social networks. For example, programs for NK refugee women can aim to help these women navigate various types of social ties or involve the participation of help-providing and trustworthy church-based ties during sessions. With respect to programs for NK refugee men, it may be important to understand their relationships with church-based ties and address negative emotions or experiences caused by these ties. More importantly, our research suggests that further investigation of how SK churches and their members are providing help to and interacting with NK refugee men and the provision of culturally sensitive training to church leaders on how to better interact with these men are necessary.

The current study has some limitations. First, the cross-sectional design did not allow for causal inferences regarding the relationship between social network characteristics and suicidal ideation. NK refugee men who were more likely to contemplate suicide might have developed more negative relationships with people at church. NK refugee women who were less likely to consider suicide might have had more diversified networks or more positive social ties in their networks. Future studies should use longitudinal data to confirm the influence of social networks on suicidality. Second, despite efforts to reduce possible recruitment bias, the use of snowball sampling limits our ability to generalize findings to all NK refugees living in SK. This recruitment strategy could be particularly vulnerable to violating the assumption of independence in the case of social network data. A more systematic sampling strategy, such as respondent-driven sampling (Heckathorn, 1997), would help minimize recruitment bias. Third, we did not use a multiple testing correction procedure because our study is exploratory in nature (Bender & Lange, 2001), requiring confirmatory studies. Fourth, the nationality of each alter was sought in the social network survey; however, the responses were invalid because respondents wrote "North Korean," "South Korean," or "Korean." A "Korean" alter could be from North or South Korea. Future researchers should design this question using multiple choices rather than an open-ended format. With such information, future studies can examine bonding and bridging ties, which are important concepts of social capital (Lin, 1999), and their effects on suicidal ideation in this population. Last, the decision to limit the size of respondents' networks to five might have obscured our understanding of individuals who have many more ties and those who are socially isolated.

Despite these limitations, the current study made significant contributions to the literature on refugees in general and NK refugees in particular. First, this study increased our understanding of risk and protective factors related to suicidal ideation among NK refugees living in SK and social networks characteristics in this population. To our knowledge, only two previous studies have examined suicidality in this population to date (Kim & Jung, 2015; Kim et al., 2013), and only a few studies have investigated suicidality among other refugees (Vijayakumar, 2016). Future research should explore social network characteristics among other refugee populations and their effects on suicidality. Second, this study showed that using detailed measures of social networks is necessary to identify the differential effects of social relationships on suicidal behavior, rather than assuming every relationship has a positive influence on such behavior. Last, our research confirmed that considering gender differences is important when examining risk and protective factors of suicidality. Thus, the contexts of social networks and gender should be considered when developing culturally adapted interventions and prevention efforts focused on suicidality among NK refugees in SK.

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