

The role of storytelling agents and suicidal ideation: South Korean adolescents' experience

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Abstract

The present study is focused on the role of daily communication practices both online and offline in suicidal ideation in South Korean adolescents. From communication infrastructure, social support, and negative interactions perspectives, whether storytelling agents are related to increased or decreased suicidal ideation is examined. Data were collected from 300 high school students from a national respondent panel. The results showed that local media and personal communication (e.g., texting, phone calls) were positive predictors of increased suicidal ideation, whereas family communication decreased it. Negative face-to-face interactions moderated the relationship between personal communication and increased suicide preparation. This study suggests that increased family communication with adolescents can reduce suicidal ideation. Local media campaigns about suicide prevention and information and communication technology (ICT) use for supportive communication may decrease suicidal ideation in South Korean adolescents.

Keywords: communication infrastructure, storytelling agents, suicidal ideation, communication action context, supportive communication, negative interactions

1. Introduction

With expanded communication channels in the information and communication technology (ICT) era, a multitude of conduits offer both opportunities for and threats to suicidal ideation. Suicidal ideation is generally defined as thoughts about killing oneself. Suicide is a global public health problem that affects the youth population. Suicide is a third leading cause of death for youth between the ages of 10 and 24, and each year, over 4,600 young people lose their lives by suicide in the U.S. (CDC, 2016). A more serious problem is that many adolescents struggle with depression after survival from suicide attempts. Each year, 16 percent of high school students reported seriously considering suicide, 13 percent reported suicide preparation, and over 150,000 youth between the ages of 10 and 24 are treated in Emergency Departments across the U.S. for suicide-related self-inflicted injuries (CDC, 2016). Those at suicide risk may seek and receive help from support groups online (Nishihara, 2015) and offline (Cerel, Padgett and Reed, 2009). In contrast, when those at risk for suicide experience negative responses from daily communication, they may think more about suicide (Lincoln, Taylor, Chatters and Joe, 2012).

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Related research has investigated beneficial (e.g., Malakouti et al., 2015) and harmful factors (e.g., Bertera, 2005) for suicidal ideation in general. There has been research on the role of family and important others in suicide reduction (e.g., Lee, Shin, Ko and Kwak, 2014; Lincoln et al., 2012). Previous research, however, has not examined integrative communication mechanisms in the suicidal ideation process. This study views that storytelling agents in individuals' daily communication about suicide play an important role in suicide ideation. Storytelling agents such as people, media, and grassroots organizations refer to daily communication resources that create and disseminate stories to promote communication for common purposes (Ball-Rokeach, Kim and Matei, 2001).

Grounded in communication infrastructure theory (CIT) (Kim and Ball-Rokeach, 2006), the present study is focused on the role of communicative storytelling agents at multiple levels in suicidal ideation. The purpose of this study is to examine how engaged communication with storytelling agents both online and offline can affect South Korean teens' suicidal ideation. Specifically, the current study questions how storytelling agents are associated with social support, negative interactions, and suicidal ideation. Additionally, the social support and negative interactions individuals experience while communicating with storytelling agents may predict suicidal ideation. This study eventually aims at discovering the storytelling agents that contribute to decreased suicidal ideation and offers constructive suggestions to those at risk and caregivers.

The subjects of this study are high school students from South Korea, the country with the highest suicide rate according to the Organization for Economic Co-operation and Development (OECD) nations (OECD Data, 2015). One poll about suicide in the country showed that over half of South Korean teenagers had experienced suicidal ideation along with feeling depressed (Kang, 2014). South Korean youths attributed suicidal ideation to lifelong pressure for better appearance and social status, more success, and entrance to prestigious universities (Korea Health Promotion Foundation, 2014; Moon and Kim, 2011; Ministry of Woman and Family, 2012).

2. Communication infrastructure for problems and solutions

A healthy society is built upon the members' active engagement in the fabrics of sound communication resources. Communication resources consist of storytelling agents at micro, meso, and macro levels (Kim and Ball-Rokeach, 2006). The storytelling agents of these networks constitute a communication infrastructure, which constructs the foundation of an engaged community for common purposes. A communication infrastructure is defined as "a storytelling network set in its communication action context" (Ball-Rokeach et al., 2001: 396). Communication infrastructure theory (CIT) provides a theoretical lens for understanding the process of communication that induces action (Broad, Ball-Rokeach, Ognyanova, Stokes, Picasso and Villanueva, 2013). CIT states that individuals build connections through communication in viable storytelling networks to experience successful social engagement (Kim and Ball-Rokeach, 2006). Individuals in the networks subsequently decide to take certain actions, resolve problems, and build strong communities (Kim and Ball-Rokeach, 2006).

There are three key storytelling agents in communication infrastructure. The first agents at the micro level are interpersonal communication agents such as family, friends, and next-door neighbors (Lake and Huckfeldt, 1998). The second storytellers are local organizations and geo-ethnic media outlets at the meso-level (Kim and Ball-Rokeach, 2006). The third storytellers include mass media at the macro-level (Kim and Ball-Rokeach, 2006). These agents are called integrated communication storytelling networks (ICSN) (Wilkin and Ball-Rokeach, 2011).

Recently, ICT has become an important storytelling agent (Kim and Shin, 2016). ICT is defined as formats

of telecommunication, computers, and systems that store and transmit data or sources (Alena and Libor, 2012). From the communicative ecology perspective, formats account for the social process for taking action. Communicative formats refer to the presentation of experience on either direct or indirect channels such as face-to-face or mediated communication (Snow, 1983).

Communicative formats at different levels operate functionally both temporally and spatially (Coleman and Firmstone, 2014). ICT enables spatiotemporal transfers in synchronous or asynchronous connections both online and offline. ICT renders both communication process and social participation benefits (Poell, 2014). The current study assumes that South Korean adolescents could use face-to-face, media, and ICT storytelling agents for suicide communication. Such communication is presumed to account for variations in coping with suicidal ideation. Based on the review, the first research question asks:

RQ1: Does the use of storytelling agents relate to suicidal ideation?

3. Storytelling agents and supportive communication

CIT can extend beyond engagement by expanding storytelling agents' role to support and solutions (Abril et al., 2015). Individuals use communication infrastructure to seek support, and storytelling agents can provide solutions in response to help seeking. For instance, obese African Americans and Latinos used family and neighborhood communication resources to receive help for weight management (Wilkin, Katz, Ball-Rokeach and Hether, 2015). Tang and Qin (2015) found that individuals discuss concerns about suicidal ideation directly and indirectly in storytelling networks, which include family members, friends, community organizations, and media channels. A cohesive network built through bonding and bridging is the catalyst of resolving interpersonal conflicts in communities (Krackhardt, 1990). In addition, ICT comprises important storytelling agents for support and help. As an example, Bane, Cornish, Erspamer and Kampman (2010) discovered that female support seekers used weblogs for emotional support and practical help in friendship management.

At the micro level, studies on the role of storytelling agents in reducing suicidal ideation emphasize the importance of family and peer support (Tang and Qin, 2015). Support seeking from family and friends in connection with problem-solving efforts, emotional control, and accommodation was a key predictor of decreased perceived stress, depression symptoms, and suicidal ideation (Khurana and Romer, 2012). Researchers have attempted to find factors that can decrease South Korea's high suicide rate. In one effort, positivism, peer communication, and family bonding were contributors to reducing suicidal ideation among South Korean teens (Lee et al., 2014).

At the meso level, storytelling agents such as community organizations and local media play an active role in solving community problems. For example, a school program, Youth Aware of Mental Health, provided support for depressed students who were at risk for suicide (Potera, 2015). South Koreans' ICT use in neighborhoods was a key factor for their engagement with community vitalization and local improvement (Kim and Shin, 2016).

At the macro level, the Internet is a storytelling agent for suicide prevention as it offers emotional support and understanding in global connections (Kupferberg and Gilat, 2012). Individuals communicate through email (Wilson and Lester, 1998), chatting (Barak, 2007), and online support groups (Gilat and Shahar, 2007) to seek support for a suicide risk.

As such, storytelling agents provide individuals opportunities to engage and receive support for solutions. Social support provides individuals with feelings of connection and social integration. Social support is defined as tangible or intangible assistance received from others in supportive social networks. Schaefer, Coyne and

Lazarus (1981) identified emotional, informational, and tangible support as three types of social support. Emotional support is defined as intimate expressions of love and attachment from family (Cutrona, 1996). Informational support is the support from professionals such as medical doctors who provide helpful feedback, advice, and appraisal. Tangible support indicates material services such as money or caregiving by family and close companions (Schaefer et al., 1981).

According to the appraisal theory of social support, individuals who receive support at micro, meso, and macro levels do not act directly on the communication, but they evaluate the support and select a suitable type for pertinent outcomes (Xu and Burleson, 2001). Social support from important others underscores the support seeker's basic worth, value, and belongingness to the group. Support seekers evaluate the support, and the positive experience generates a sense of integration, which can reduce suicidal ideation (Lincoln et al., 2012).

Drawn from the literature review, a research question for the relationship between storytelling agents and supportive communication is put forth. Clear research evidence states that social support is positively related to perceived evaluation of support. A hypothesis regarding the evidence follows. Eventually, perceived evaluation of support is predicted to be a negative factor of suicidal ideation. Another question asks if supportive communication plays a role between storytelling agents and suicidal ideation. That is, adolescents with high social support are more likely than those with low social support to have decreased suicidal ideation.

RQ2: Does the use of storytelling agents relate to a) social support and b) perceived evaluation of support?

H1: Social support will positively predict perceived evaluation of support.

H2: Perceived evaluation of support will negatively predict suicidal ideation.

RQ3: Do a) social support and b) perceived evaluation of support moderate the relationship between storytelling agents and suicidal ideation?

4. Storytelling agents and negative interactions

Individuals in storytelling networks experience not only support but negative interactions. Negative interactions are those such as conflicts, excessive demands, and criticism (Lincoln et al., 2012). Recipients of negative interactions consequently experience transgression and offense (Fiore, Becker and Coppel, 1983). Negative interactions can relate to heightened psychological distress (Lincoln and Chae, 2010), depression (Rook, 1984), and mood or anxiety disorders (Lincoln et al., 2010). If an individual experiences negative interactions in communicating about suicidal feelings, problematic encounters may erode self-value and connections to the group and social integration (Bolger, DeLongis, Kessler and Schilling, 1989).

Owen and colleagues (2012) observed that one negative outcome of suicide communication is misunderstanding and communication breakdown. For instance, negative interpersonal relationships and lack of communication between South Korean adolescents and parents led to high probable suicidal ideation (Kim and Jeong, 2016; Kim, Park, Park and Kim, 2012). Negative communication behaviors such as dismissive or disapproving responses were precedents of friends' suicide attempts (Sweeney, Owens and Malone, 2015). Negative interactions in face-to-face communication and ICT can worsen suicidal ideation. Problematic Internet experiences such as cyberbullying substantially predicted suicidal ideation among South Korean adolescents (Park, Koo, Schepp and Jang, 2006).

A set of research questions and hypotheses are posed with regards to the relationship among storytelling agents, negative interactions, and suicidal ideation. A question concerns the relationship between storytelling

agents and negative interactions. A hypothesis predicts the positive association between negative interactions and increased suicidal ideation. Another question anticipates a moderation effect of negative interactions between storytelling agents and suicidal ideation.

RQ4: Do storytelling agents relate to negative interactions?

H3: Negative interactions will positively predict suicidal ideation.

RQ5: Do negative interactions moderate the relationships between storytelling agents and suicidal ideation?

5. Action context agents for engagement and solution

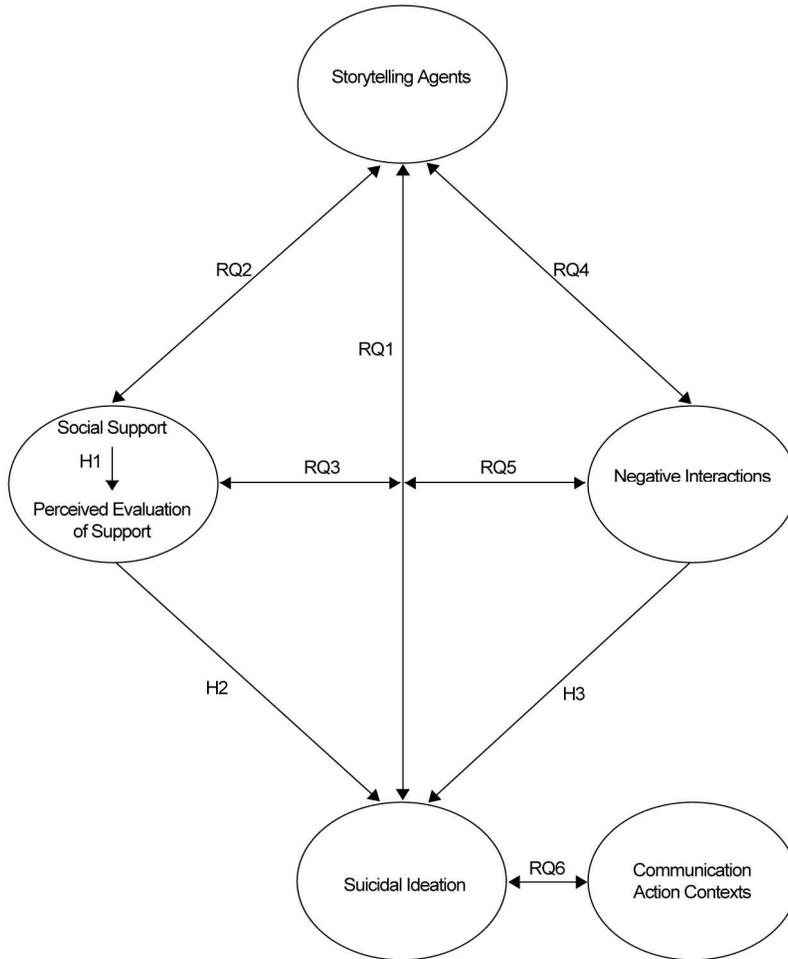
Members of communities use communicative storytelling agents in certain contexts. Communication takes place contextually, and it partially contributes to community change (Kim and Ball-Rokeach, 2006). According to CIT, the action context makes it harder or easier for individuals and communities to operate an integrated storytelling network (Kim and Ball-Rokeach, 2006). Feasible resources for promoting communication are the components of communication action contexts, including cultural barriers, ethnic heterogeneity, collective memories, personal differences such as personality (Omoto, Snyder and Hackett, 2010), and residential stability (Shah, McLeod and Yoon, 2001). The Korean population is still homogeneous in ethnicity and culture. Therefore, only residential stability and personality were considered as communication context factors in this study.

Although the role of personality differences has been explored in various situations, their roles are still unknown in suicidal communication. For example, extraversion and openness to new experience has positive associations with civic participation, because extraverted individuals seek new ideas and communication with others (Bekkers, 2005). However, introverted individuals are also actively involved in communication, because ICT provides immediate connections by managing the mediated self. Research evidence in a study of personality and civic engagement found that introverts were more active social media users and partook in more offline civic activities than extraverts (Kim, Hsu and de Zúñiga, 2013). There is also some evidence that long-term residence has been a positive indicator of neighborhood belonging and community engagement (Kim and Ball-Rokeach, 2006). In this regard, this study questions the role of communication action contexts in suicidal ideation.

RQ6: Do communication action context agents (residential stability and personality) relate to suicidal ideation?

The relationships described in the research questions and hypotheses are represented as a model in Figure 1.

Figure 1. Research questions and hypotheses



6. Method

The current study collected data from a national panel provided by a survey company, Macromill Embrain Korea, between January 20 and February 3, 2016; the company has more than 30,000 pre-recruited adolescents aged 16-18. No IRB approval was obtained because the approval is required only for clinical and medical experiments in South Korea. In South Korea, those over the age of 14 are not required to submit parental consent per the law.¹⁾ The panel received an email notification of the survey participation and voluntarily took part in the survey through a web page the company provided. However, only those who answered ‘yes’ to the screening question of ‘if they had suicidal thoughts for the past 12 months’ were qualified for participation. The survey

1) The Korea Act on Promotion of Information and Communications Network Utilization and Information Protection requires information services to obtain parental consent only when a child is younger than 14.

lasted until the number of respondents reached the pre-set quota, 300 responses for three high school grades (freshman, sophomore, and junior). The respondents offered redeemable points for their participation. The researchers first translated the questionnaire into Korean, and then the company's survey administrators reviewed it for meaning.

6.1 Measures of variables

Storytelling agents. The present study utilized communication infrastructure measures adopted from previous research as the base items (see Kim and Ball-Rokeach, 2006). Further, following the definition and categories of ICT, Internet, mobile app, social media, and email use were assessed (Alena and Libor, 2012) and used to measure storytelling agents in the South Korean ICT context (Table 1). Participants responded to a 7-point scale (from 1 = *not at all* to 7 = *always*) for the question of how often they had discussed suicidal ideation with people or through media channels for the last 12 months.

Table 1. Component dimensions of communication storytelling agents ($N = 300$)

	<i>M</i>	<i>SD</i>	I	II	III	IV	<i>AVE</i>	<i>CR</i>
ICT Network							.577	.842
Social media (e.g., Facebook, Kakao Story)	3.806	1.946	.853	.136	.099	-.023		
Mobile messenger (e.g., Kakao Talk, Naver Line)	4.053	1.878	.802	.070	.313	.126		
Internet portal (e.g., Naver, Daum)	3.996	1.847	.800	.115	.145	.182		
Internet community	2.456	1.892	.547	.418	.033	-.019		
Local Media							.667	.856
Local newspapers	1.550	1.028	.176	.875	.158	.155		
Local radio	1.543	1.085	.055	.867	.238	.038		
Local TV news	2.090	1.468	.281	.696	.151	.315		
Personal Communication							.581	.804
Phone calls	2.346	1.699	.174	.157	.848	.149		
Texting	2.683	1.753	.333	.138	.811	.153		
School counselor	1.770	1.513	.035	.153	.607	.054		
Family Communication							.737	.849
Siblings	2.046	1.401	.054	.145	.117	.864		
Parents	2.513	1.728	.103	.134	.155	.854		
Friends*	3.556	1.916						
Religious organization*	1.523	1.246						
Local suicide prevention organization*	1.300	.0890						
Eigenvalue			4.662	1.556	1.290	1.108		

	<i>M</i>	<i>SD</i>	I	II	III	IV	<i>AVE</i>	<i>CR</i>
Percent of Variance			38.851	12.965	10.746	9.231		
<i>M</i> (<i>SD</i>)			3.578 (1.502)	1.727 (1.045)	2.226 (1.342)	2.280 (1.397)		
Cronbach's Alpha (<i>r</i>)			.805	.831	.736	.743 (.591)		

Note: The current study used principal component analysis (PCA) for exploratory purposes. A PCA was conducted because the scale added new ICT items. Varimax rotation was used because a) the focus was not on the correlations among components but on the predictability for dependent variables, b) there were no clear indications of the number of components due to new items, and c) the analysis was intended to maximize component loadings that encompassed possible indicators of the dimensions.

* dropped items because they did not meet the test for internal consistency. Component I: ICT network; Component II: local media; Component III: personal communication; Component IV: family communication.

Social support and perceived evaluation of support. Social support measured the degree to which the students received emotional, informational, and tangible support after discussing suicidal concerns (Xu and Burleson, 2001) (from 1 = *did not receive at all* to 7 = *received a great deal*; Table 2).

Perceived evaluation of support asked if the students assessed the communication to be supportive. The items were a) listening ($M = 4.423$, $SD = 1.779$), b) advice ($M = 4.026$, $SD = 1.725$), and c) care ($M = 4.086$, $SD = 1.824$) (from 1 = *not supportive at all* to 7 = *very supportive*) (Matsunaga, 2010).

Table 2. Component dimensions of social support (N = 300)

	<i>M</i>	<i>SD</i>	I	<i>AVE</i>	<i>CR</i>
Social Support				.649	.937
Giving you advice about what to do	3.946	1.759	.854		
Analyzing a situation with you and telling you about available choices and options	3.356	1.664	.819		
Informing you of how to do something that you don't know how to do	3.583	1.712	.816		
Offering to help you do something that needs to be done	3.526	1.764	.816		
Expressing understanding of a situation that is bothering you	4.170	1.752	.809		
Discussing a similar situation that he/she experienced before	3.946	1.810	.809		
Telling you that he/she understands concerns and feels close to you	3.990	1.802	.801		
Expressing willingness to help you when you are in need of help	3.233	1.802	.718		
Eigenvalue				5.200	

	<i>M</i>	<i>SD</i>	I	<i>AVE</i>	<i>CR</i>
Percent of Variance			64.998		
<i>M</i>			3.718		
(<i>SD</i>)			(1.416)		
Cronbach's Alpha			.922		

Note: Because the items were adopted from an established conceptual scale, the analysis was also checked in principal axis factoring with oblique rotation to insure the consistency of dimensions. The results in the table were confirmed with principal axis factoring.

Component I: supportive communication.

Negative interactions. The items were adopted from a previous study on negative interaction in suicidal communication and revised for a storytelling context (Lincoln et al., 2012). Respondents answered a question regarding how often they had experienced the listed negative interactions in communicating suicidal concerns with storytelling agents for the last 12 months (from 1 = *not at all* to 7 = *always*; Table 3).

Table 3. Component dimensions of negative Interactions (*N* = 300)

	<i>M</i>	<i>SD</i>	I	II	<i>AVE</i>	<i>CR</i>
Face-to-Face Interactions					.750	.900
They criticized me	2.643	1.787	.886	.193		
They neglected me	2.766	1.645	.867	.156		
They left me out	2.093	1.525	.845	.173		
Negative Media Interactions					.776	.820
Media criticized me	2.340	1.462	.389	.788		
Media left me out	2.150	1.423	.398	.771		
Media neglected me	3.256	1.722	-.057	.770		
Eigenvalue			3.307	1.158		
Percent of Variance			55.110	19.304		
<i>M</i>			2.501	2.582		
(<i>SD</i>)			(1.475)	(1.241)		
Cronbach's Alpha			.871	.746		

Note: The current study used principal component analysis for exploratory purposes.

Component I: negative face-to-face interactions; Component II: negative media interactions.

Suicidal ideation. Respondents' suicidal ideation was obtained from Beck's scale (Beck, Kovacs and Weissman, 1979). A total of 14 items with response options from 1 = *not at all* to 7 = *quite a lot* were asked regarding the degree to which they had had any of the listed thoughts for the last 12 months (Table 4). Two sub-dimensions were found in the factor analysis. The scale construct from this study showed a similarity in dimensionality with the original one, which confirmed construct validity.

Table 4. Component dimensions of suicidal ideation ($N = 300$)

	<i>M</i>	<i>SD</i>	I	II	<i>AVE</i>	<i>CR</i>
Suicide Preparation					.553	.859
Suicide note	1.793	1.099	.816	.115		
Final acts in anticipation of death (e.g., insurance, will)	1.740	1.046	.809	.193		
Actual preparation for contemplated attempt	1.980	1.147	.754	.368		
Specificity/planning of contemplated attempt	2.363	1.247	.744	.328		
Sense of capability to carry out attempt	2.353	1.142	.570	.179		
Active Suicide Desire					.471	.839
Wish to die	2.870	0.914	.210	.810		
Frequency of suicidal thought	2.393	1.020	.327	.775		
Wish to live*	4.186	0.935	.073	.751		
Desire to make active suicide attempt	2.363	1.017	.531	.606		
Expectancy of actual attempt	2.016	0.976	.559	.570		
Persistent suicidal ideation	2.526	1.119	.500	.561		
Deterrent to active attempt (e.g., family, religion)*^	4.930	1.425				
Control over suicidal action*^	4.296	1.095				
Revelation of contemplated attempt**	2.390	1.132				
Eigenvalue			5.766	1.166		
Percent of Variance			52.419	10.602		
<i>M</i>			2.046	2.726		
(<i>SD</i>)			(0.894)	(0.775)		
Cronbach's Alpha			.845	.868		

Note: * Items recoded reversely to keep the consistent direction of response options. ^These two items were first included in a component structure but were dropped due to extremely low Cronbach's alphas (.215). The dimensionality of the items in principal axis factoring with oblique rotation was assessed to determine whether the component dimensions were reliable as shared variances considering correlations among items. Following the additional analysis, those two items were also not included in the factor structure. One possible reason for this result could have been the participants' responses to the items in reverse response options compared with the other items.

**Dropped item due to a low component coefficient.

Component I: preparation; Component II: active suicidal desire.

Communication action contexts. Residential tenure, including the number of years at the current residence and home ownership, was also measured (Kim and Ball-Rokeach, 2006). Forty-six percent of participants had

lived in their current residence for 1-5 years ($n = 138$), followed by 6-10 years (25.7%, $n = 77$), more than 16 years (14.3%, $n = 43$), and 11-15 years (14%, $n = 42$). Over half of the students' families owned a house (51.7%, $n = 155$). Personality was assessed with Goldberg's (1992) bipolar indicators on a ten-item Big Five battery (Table 5).

Table 5. Component dimensions of personality ($N = 300$)

	<i>M</i>	<i>SD</i>	I	II	III	<i>AVE</i>	<i>CR</i>
Conscientiousness						.599	.785
Neat – Sloppy	4.283	1.502	.755	.116	.212		
An intellectual – Not an intellectual	4.446	1.261	.714	.162	.056		
Philosophical – Unreflective	4.266	1.660	.714	-.078	.064		
Hardworking – Lazy	3.303	1.455	.704	.151	.119		
Calm – Nervous	3.820	1.569	.585	.267	.108		
Extraversion						.673	.856
Outgoing – Shy	3.600	1.660	.141	.920	.066		
Extraverted – Introverted	3.530	1.698	.090	.918	.063		
Relaxed – Tense	4.550	1.474	.306	.575	.435		
Agreeableness						.689	.816
Sympathetic – Unsympathetic	5.310	1.476	.047	.092	.849		
Kind – Unkind	5.206	1.294	.237	.090	.811		
Eigenvalue			3.707	1.540	1.190		
Percent of Variance			37.067	15.399	11.903		
<i>M</i>			4.024	3.893	5.258		
(<i>SD</i>)			(1.065)	(1.382)	(1.191)		
Cronbach's Alpha			.763	.814	.646		
(<i>r</i>)					(.477)		

Note: Because the items were from an established personal scale, the study also used principal axis factoring with oblique rotation to ensure the consistency of the dimensions. The results in the table were confirmed with principal axis factoring.

Component I: conscientiousness; Component II: extraversion; Component III: agreeableness.

7. Findings

In the sample, more participants ($N = 300$) identified as female (72%, $n = 216$) than male (28%, $n = 84$). The mean age was 17 ($SD = .87$). In South Korea, there are three grades in high school, freshman (coded as 1), sophomore (coded as 2), and junior (coded as 3), and the participation was equally distributed across all three grades, 100 each ($M = 2$, $SD = .82$). Over one-third of the sample was from Kyunggi Province (35%, $n = 105$), followed by Seoul metropolitan city (25%, $n = 75$) and InCheon city (6%, $n = 18$). Annual family income broke down as follows: less than \$30,000 (22.7%, $n = 68$), followed by \$30,000-39,999 (16%, $n = 48$) and

\$40,000-49,999 (9.7%, $n = 48$). Nearly one-third (30.7%, $n = 92$) of the participants did not know their families' incomes.

The respondents used ICT network most ($M = 3.57$, $SD = 1.50$) to communicate suicide followed by family communication ($M = 2.28$, $SD = 1.39$), and personal communication ($M = 2.22$, $SD = 1.34$) (Table 1). All storytelling agents showed acceptable (over .50) reliability and validity in average variance extracted (AVE) and composite reliability (CR) tests. The social support measure produced unidimensionality ($M = 3.71$, $SD = 1.41$) (Table 2). Three items of perceived evaluation of support in a component analysis with varimax rotation yielded single dimensionality (coefficient range: .913-.950; communality range: .834-.903; eigenvalue = 2.574; variance explained = 85.79, Cronbach's alpha = .917). The items were grouped and averaged as a new variable for analysis ($M = 4.178$, $SD = 1.645$).

The respondents experienced negative interactions through the media ($M = 2.58$, $SD = 1.24$) slightly more than face-to-face communication ($M = 2.50$, $SD = 1.47$) (Table 3). There were two suicidal ideation components: suicide preparation and active suicide desire. Respondents had active suicide desire ($M = 2.72$, $SD = 0.77$) more than suicide preparation ($M = 2.04$, $SD = 0.89$) (Table 4). Although active suicide desire did not yield an acceptable AVE, .471, its CR for convergence validity was in the acceptance range. In personality, agreeableness was the highest scored trait ($M = 5.25$, $SD = 1.19$) followed by conscientiousness ($M = 4.02$, $SD = 1.06$) and extraversion ($M = 3.89$, $SD = 1.38$) (Table 5). The personality components showed acceptable AVEs and CRs for convergence validity. Correlations among the testing variables are provided in Table 6.

Table 6. Correlation analysis of variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
ICT Network	1												
Local Media	.45***	1											
Personal Communication	.45***	.43***	1										
Family Communication	.23***	.37***	.34***	1									
Social Support	.45***	.29***	.38***	.27**	1								
Perceived Evaluation of Support	.42***	.21***	.27***	.17**	.76***	1							
Negative Interactions	.29***	.28***	.26***	.14*	.06	.02	1						
Conscientiousness	-.06	-.02	.01	.13*	.05	.01	-.18**	1					
Extraversion	.02	.04	.16**	.03	.10	.10	-.14**	.38***	1				
Agreeableness	.04	-.08	.14*	.07	.15**	.17**	-.11	.32***	.32***	1			
Home Ownership	-.06	.09	.01	-.04	-.05	-.01	.04	-.02	.06	-.03	1		
Suicide Preparation	.15**	.21***	.19**	.06	.07	-.01	.42***	-.13*	-.09	-.12*	-.04	1	
Suicide Desire	.07	.11*	.04	-.07	-.06	-.15**	.38***	-.34***	-.22***	-.18**	-.06	.69***	1

*** $p < .001$; ** $p < .01$; * $p < .05$.

RQ1 asked about a direct relationship between storytelling agents and suicidal ideation. In a multiple hierarchical linear regression, control variables of age, gender, school grade, and family income entered block 1 and storytelling agents entered block 2. Therefore, the variables in the two blocks were the independent variables, and the two sub-dimensions (suicide preparation and active suicide desire) of suicidal ideation were the dependent variables. The results demonstrated that local media ($\beta = .15$, $t = 2.16$, $p < .05$) and personal

communication ($\beta = .14, t = 2.02, p < .05$) increased suicide preparation (Table 7). ICT network and family communication were not significantly associated with suicide preparation. Further, local media positively predicted active suicide desire ($\beta = .15, t = 2.19, p < .05$). Family communication negatively predicted suicide desire ($\beta = -.14, t = -2.23, p < .05$).

Table 7. Regressions of storytelling agents predicting suicidal ideation (N = 300)

	Suicide Preparation	Actual Suicide Desire
	Full Model	Full Model
Demographics		
Gender (female)	-.07(-0.63)	.03(0.54)
Age	-.16(-1.00)	-.09(-0.71)
School Grade	.15(1.06)	-.01(-0.08)
Family Income	-.01(-0.64)	-.05(-0.87)
R-square (%)	0.8	1.3
Storytelling Agents		
ICT Network	.03(0.41)	.02(0.37)
Local Media	.15(2.16)*	.15(2.19)*
Personal Communication	.14(2.02)*	.01(0.24)
Family Communication	-.05(-0.72)	-.14(-2.23)*
Incr. R-square (%)	5.90***	3.1
Total R-square (%)	6.70***	4.4
Final <i>F</i> (<i>df</i>)	2.59*** (8, 291)	1.66 (8, 291)

Note: Entries are standardized regression coefficients (β) after all variables entered the regression. Coefficients in parentheses indicate *t*-values. Only full models are presented.

*** $p < .001$; ** $p < .01$; * $p < .05$.

RQ2 questioned an association between storytelling agents and a) social support and b) perceived evaluation of support (Table 8). With the control variables, a multiple hierarchical linear regression analysis showed that ICT network ($\beta = .34, t = 5.86, p < .001$), personal communication ($\beta = .18, t = 3.02, p < .01$), and family communication ($\beta = .12, t = 2.16, p < .001$) positively predicted social support. In predicting perceived evaluation of support, ICT network was positively associated with it ($\beta = .38, t = 6.13, p < .001$).

Table 8. Regressions of storytelling agents predicting social support ($N = 300$)

	Social Support	Perceived Evaluation of Support
	Full Model	Full Model
Demographics		
Gender (female)	-.07(-1.37)	-.03(-0.68)
Age	-.18(-1.65)	.03(0.32)
School Grade	.25(2.27)*	-.01(-0.01)
Family Income	.04(0.90)	.01(0.26)
R-square (%)	2.3	0.2
Storytelling Agents		
ICT Network	.34(5.86)***	.38(6.13)***
Local Media	.01(0.15)	-.02(-0.31)
Personal Communication	.18(3.02)**	.09(1.43)
Family Communication	.12(2.16)*	.06(1.05)
Incr. R-square (%)	25.7***	19.4***
Total R-square (%)	28.0***	19.6***
Final F (df)	14.13*** (8, 291)	8.86*** (8, 291)

Note: Entries are standardized regression coefficients (β) after all variables entered the regression. Coefficients in parentheses indicate t-values. Only full models are presented.

*** $p < .001$; ** $p < .01$; * $p < .05$.

H1 stated a positive association between social support and perceived evaluation of support. With the control variables, the result supported the hypothesis, ($\beta = .77, t = 20.49, p < .001$), $\Delta R^2 = .587, F(5, 294) = 84.21, p < .001$. H2 examined a positive relationship between perceived evaluation of support and suicidal ideation. With the controls, perceived evaluation of support decreased active suicide desire ($\beta = -.14, t = -2.60, p < .01$), $\Delta R^2 = .022, F(5, 294) = 2.15, p = .059$. However, perceived evaluation of support did not significantly predict suicide preparation ($\beta = .06, t = 1.10, p > .05$). Therefore, the hypothesis was partially supported.

RQ3 tested a moderation effect of social support or evaluation of support in the relationship between storytelling agents and suicidal ideation using PROCESS. PROCESS allows for analyzing direct and interaction effects for moderation independently or together. Bootstrapping was used to test the significance of potential moderation with the PROCESS procedures outlined by Hayes (2013), using 1,000 bootstrapped samples. The model set storytelling agents as the independent variable (X), social support (W1) and perceived evaluation of support (W2) as the moderators, and suicidal ideation as the outcome (Y).²⁾ For this analysis, products were mean centered and a 95% CI was used. The analysis for RQ3 found no significant moderation effect.

RQ4 asked if there was a relationship between storytelling agents and negative interactions about suicide (Table 9). With the control variables, the results showed that ICT network ($\beta = .16, t = 2.63, p < .01$) and personal communication ($\beta = .14, t = 2.08, p < .05$) were positively associated with negative interactions. No significant relationships were found between local media, family communication, and negative interactions. As H3

2) The moderation effect was separately tested for social support and evaluation of support.

predicted, negative interactions positively predicted suicide preparation ($\beta = .42, t = 7.92, p < .001$), $\Delta R^2 = .175$, $F(5, 294) = 13.13, p < .001$ and active suicide desire ($\beta = .38, t = 7.10, p < .001$), $\Delta R^2 = .145$, $F(5, 294) = 11.10, p < .001$. H3 was therefore fully supported.

Table 9. Regressions of storytelling agents predicting negative interactions ($N = 300$)

	Negative Interactions
	Full Model
Demographics	
Gender (female)	-.13(-2.43)*
Age	-.08(-0.65)
School Grade	.03(0.29)
Family Income	-.05(-1.03)
R-square (%)	3.0
Storytelling Agents	
ICT Network	.16(2.63)**
Local Media	.12(1.09)
Personal Communication	.14(2.08)*
Family Communication	.01(0.08)
Incr. R-square (%)	11.9***
Total R-square (%)	14.9***
Final F (df)	6.34*** (8, 291)

Note: Entries are standardized regression coefficients (β) after all variables entered the regression. Coefficients in parentheses indicate t -values. Only full models are presented.

*** $p < .001$; ** $p < .01$; * $p < .05$.

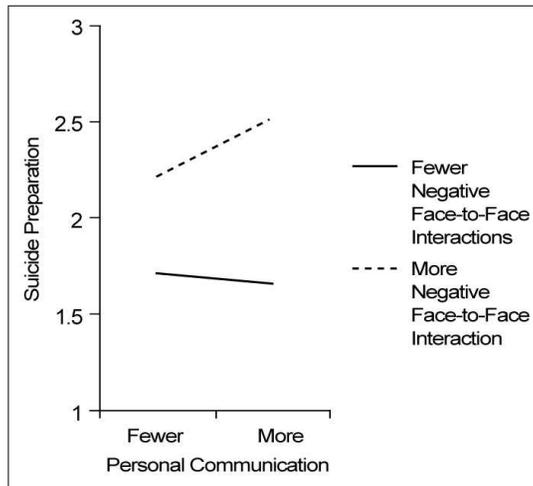
RQ5 questioned the role of negative interactions as a moderator in the relationship between storytelling agents and suicidal ideation. The PROCESS model set storytelling agents as the independent variable (X), negative interactions as the moderator (W), and suicidal ideation as the outcome (Y). The analysis found only one significant difference (Table 10, Figure 2). For those who experienced more negative face-to-face interactions, personal communication (phone calls, texting, school counselor) was positively associated with suicide preparation, one of the two suicidal ideation components ($\beta = .04, t = 2.08, p < .05$). There was no moderation effect between storytelling agents and suicide desire.

Table 10. Moderating effects of negative interactions on the relationship between storytelling agents and suicidal preparation ($N = 300$)

	B (SE)	t	p	LLCI	ULCI
Suicide Preparation					
Constant	2.022 (.047)	42.928	.000	1.929	2.114
Personal Communication	.047 (.014)	1.142	.254	-.034	.128
Negative Face-to-Face Interaction	.229 (.032)	7.112	.000	.165	.292
Personal Communication \times Negative Face-to-Face Interaction	.046 (.022)	2.080*	.038	.002	.090

Note: The table shows the results of a moderation analysis. The analysis used PROCESS (Model 1) for the analysis and 1,000 bootstrap samples for the confidence intervals. The F model reflects the interaction model result. Personal Communication \times Negative Face-to-Face Interaction for Preparation: $\Delta R^2 = .19$, $F(3, 296) = 21.209$, $p < .001$.
* $p < .05$.

Figure 2. Moderating effects of negative communication on the relationship between personal communication and suicide preparation



RQ6 questioned whether communication action context variables such as residential stability and personality would predict suicidal ideation. In this analysis, only one personality trait, conscientiousness ($\beta = -.282$, $t = -4.623$, $p < .001$), was negatively associated with active suicide desire, $\Delta R^2 = .132$, $F(8, 291) = 6.081$, $p < .001$.

8. Discussion

This study was designed to examine the role of storytelling agents on suicidal ideation. On the whole, storytelling agents operated as both supportive and negative channels that could affect suicidal ideation, although there were more negative than positive relationships. The ICT network provided South Korean adolescents with both supportive and negative experiences with suicidal ideation. Personal communication (e.g., texting, phone calls) combined with negative face-to-face interactions predicted increased suicidal ideation.

As shown in the relationship in RQ1 between storytelling agents and suicidal ideation, local media and personal communication, with the exception of family communication, played a significant role in increased suicidal ideation. Therefore, storytelling agents for suicide communication yielded more negative outcomes than positive ones. The results suggest the significance and effectiveness of family communication in decreasing suicidal ideation. Research offers that family needs to provide practical support and acknowledged and accepted feeling in a consistent manner (McLaughlin, McGowan, Kernohan and O'Neill, 2016). Family communication needs to provide at-risk members with caring and empathy.

Regarding RQ2, H1, and H2, the study results show that South Korean adolescents gained more social support through ICT network than through family and personal communication, consistent with previous research (Gilat and Shahar, 2007). Local media agents did not contribute to any social support for suicidal ideation, whereas the sampled South Korean adolescents evaluated the communication through ICT channels as supportive and beneficial. In this sense, local media should play a more important part in affecting suicidal ideation by linking news or campaign broadcasting to the Internet TV sites. The data patterns were congruent with previous research findings that showed that supportive communication from storytelling networks helps individuals overcome serious personal concerns such as bullying (Kang, Chung and Chung, 2014) or suicide (Tang and Qin, 2015). Intervention efforts to reduce suicide preparation should be made at the local and national levels (Rice et al., 2016).

However, as seen in RQ3, no interaction effects were found for supportive communication in the relationship between storytelling agents on suicidal ideation. This implies that active communication with storytelling agents has a direct link with the progression of suicidal ideation regardless of the presence or appreciation of social support. Instead, it seems that supportive communication is a mediator rather than a moderator, implying the decisive role of evaluation of support in reducing suicidal ideation.³⁾ Further investigation is needed to identify critical factors that can moderate the relationship between storytelling agents and suicide reduction (Larsen, Nicholas and Christensen, 2016).

This study also revealed the importance of negative interactions with storytelling networks in suicidal ideation, as shown in RQ4, H3, and RQ5. South Korean adolescents who maintained active connections with ICT and personal communication likely received negative feedback such as criticism, negligence, and even exclusion, and such negative interactions were associated with increased suicidal ideation. The significant moderation effect of negative face-to-face interactions between personal communication and suicide preparation implies that mobile phone calls and texting may be linked to negative communication. Because

3) Even though there was no moderation effect, one mediation effect was found between storytelling agents and suicidal ideation. Using PROCESS with 1,000 bootstrapped samples, perceived evaluation of support mediated the relationship between ICT network and active desire of suicide. The direct effect of ICT network on perceived evaluation of support was positive ($\beta = .462, p < .001$). The direct effect of perceived evaluation of support on active desire of suicide was negative ($\beta = -.101, p < .001$). The direct effect of ICT network on active desire of suicide was significant ($\beta = .099, p < .05$). However, the indirect effect of ICT network on active desire of suicide with perceived evaluation of support was non-significant ($\beta = .038, ns$).

South Koreans appear to be implicit and sensitive to others' views in communicating suicide (Jeon et al., 2014), they are likely to be more easily affected by negative interactions than are individuals in more explicit cultures. As previous research affirmed, negative interactions substantially predicted suicidal ideation (Park et al., 2006). Therefore, more social campaigns about eradicating negative communication such as trolling or hazing online are called for.

Answering RQ6, this study also found that communication action variables including residential stability and personality had little impact on suicidal ideation directly or indirectly except that conscientiousness decreased active suicide desire. Therefore, South Korean adolescents' suicidal ideation is affected more by external communication experiences (e.g., local media, chatting, phone calls) than internal traits (e.g., personality) or residential components.

9. Theoretical and practical implications

This study suggests that storytelling networks play a significant role for adolescents in experiencing both increasing and decreasing suicidal ideation. This study verified the possibility of CIT as a theoretical model for problem and solution communication. By identifying problems, individuals use various communicative storytelling agents to seek solutions (Kim and Grunig, 2011). This study offers possible solutions by identifying the role of negative interactions in the communication process (Wasserman, 2001). Previous studies have relatively emphasized communicators' support and help in reducing suicidal ideation (Abril et al., 2015). The current study looked at various storytelling agents in predicting suicidal ideation. Building and testing an integrated model from storytelling agents to positive and negative experiences and outcomes can account for the role of communication infrastructure in inducing action and offering solutions (Broad et al., 2013).

Considering the results that suicidal ideation can increase or decrease depending on storytelling agents, practical implications can be suggested. Given the importance of family communication in decreasing suicidal ideation, intervention campaigns emphasizing family communication are called for. Governmental and public efforts need to be implemented to inculcate South Korean adolescents with proper suicide education. It is suggested that positive ICT networks, ICT literacy, community-level campaigns in local media, and social support both online and offline should outweigh negative communication, suicide story coverage, or bullying communication in those channels.

10. Limitations and conclusion

There are some empirical limitations in the present study. This study did not investigate any of the physical or psychological problems adolescents face, because the focus was on the role of communication in the coping process, but bullying, domestic violence, peer relationships, and academic performance could all cause distress that could lead to suicidal ideation. Further, how suicidal ideation is linked with suicide attempts was also not tested. These elements are possible topics to explore in future research on communication infrastructure for problem solving. Considering that this study examined suicidal ideation, the storytelling agents would have included parents' status such as married, divorced, or deceased. Such elaboration could reflect the respondents' family communication traits better. As an action context variable, the number of family members may account for suicidal ideation because frequent family communication with members can positively affect decreased suicidal ideation. Another manifest limitation is the representativeness of the sample. The cross-sectional survey from a sample from a national panel cannot reflect the whole adolescent population of South Korea.

In conclusion, this study provides an important step in identifying the storytelling agents that can either positively or negative predict suicidal ideation. This study found that South Korean adolescents experience more negative than positive communication regarding suicidal ideation. Both personal and social efforts are called for to lower the high suicide rate by using supportive communication tools such as family communication, local media campaigns, and ICT channels. Although the results are not generalizable, when storytelling agents such as ICT networks and family interactions are used wisely, South Korean adolescents may experience a decrease in suicidal ideation.

References

- Abril, E. P., Kupczyk, M., Zwicke, G. L., Mastarone, G. L., Irwin, T. and Dykens, A. (2015). Mapping the health communication infrastructure in rural Senegal: an assessment to support cervical cancer screening. *Journal of Applied Communication Research*, 43(2), 242-262. doi: 10.1080/00909882.2015.1019545
- Alena, B. and Libor, G. (2012). *Green ICT adoption survey focused on ICT lifecycle from the consumer's perspective*. *Journal of Competitiveness*, 4(4), 109-122. doi:10.7441/joc.2012.04.08.
- Ball-Rokeach, S. J., Kim, Y. C. and Matei, S. (2001). Storytelling neighborhood: paths to belonging in diverse urban environments. *Communication Research*, 28(4), 392-428. doi:10.1177/009365001028004003
- Bane, C. M. H., Cornish, M., Erspamer, N. and Kampman, L. (2010). Self-disclosure through weblogs and perceptions of online and 'real-life' friendships among female bloggers. *CyberPsychology, Behavior & Social Networking*, 13(2), 131-139. doi: 10.1089/cyber.2009.0174
- Barak, A. (2007). Emotional support and suicide prevention through the Internet: a field project study. *Computers in Human Behavior* 2(2), 971-984. <http://dx.doi.org/10.1016/j.chb.2005.08.001>
- Beck, A. T., Kovacs, M. and Weissman, A. (1979). Assessment of suicidal intention: the scale for suicide ideation. *Journal of Consulting and Clinical Psychology*, 47(2), 343-352.
- Bekkers, R. (2005). Participation in voluntary associations: relations with resources, personality, and political values. *Political Psychology*, 26(3), 439-454. doi: 10.1111/j.1467-9221.2005.00425.x
- Bolger, N., DeLongis, A., Kessler, R. C. and Schilling, E. A. (1989). Effects of daily stress on negative mood. *Journal of Personal Social Psychology*, 57(5), 808-818.
- Bertera, E. M. (2005). Mental health in U.S. adults: the role of positive social support and social negativity in personal relationships. *Journal of Social and Personal Relationships*, 22(1), 33-48. doi:10.1177/0265407505049320
- Broad, G. M., Ball-Rokeach, S. J., Ognyanova, K., Stokes, B., Picasso, T. and Villanueva, G. (2013). Understanding communication ecologies to bridge communication research and community action. *Journal of Applied Communication Research*, 41(4), 325-345. doi: 10.1080/00909882.2013.844848
- CDC (2016). Suicide among youth. Centers for Disease Control. Retrieved from <https://www.cdc.gov/healthcommunication/toolstemplates/entertainment/tips/suicideyouth.html>
- Cerel, J., Padgett, J. H. and Reed, G. A. (2009). Support groups for suicide survivors: results of a survey of group leaders. *Suicide and Life-Threatening Behavior*, 39(6), 588-598.
- Coleman, S. and Firmstone, J. (2014). Contested meanings of public engagement: exploring discourse and practice within a British city council. *Media, Culture & Society*, 36(6), 826-844. doi:10.1177/0163443714536074
- Cutrona, C. E. (1996). *Social Support in Couples: Marriage as a Resource in Times of Stress*. Thousand Oaks, CA: Sage.
- Fiore, J., Becker, J. and Coppel, D. B. (1983). Social network interactions: a buffer of a stress. *American Journal of Community Psychology*, 11(4), 423-439.
- Gilat, I. and Shahar, G. (2007). Emotional first aid for a suicide crisis: comparison between telephonic hotline and internet. *Psychiatry: Interpersonal and Biological Pesses*, 70(1), 12-18. <http://dx.doi.org/10.1521/psyc.2007.70.1.12>
- Goldberg, L. R. (1992). The development of markers for the big-five factor structure. *Psychological Assessment*, 4(1), 26-42.

- Hayes, A. F. (2013). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-based Approach*, New York, NY: Guilford Press.
- Jeon, H. J., Walker, R. S., Inamori, A., Hong, J. P., Cho, M. J., Baer, L., Clain, A., Fava, M. and Mischoulon, D. (2014). Differences in depressive symptoms between Korean and American outpatients with major depressive disorder. *International Clinical Psychopharmacology*, 29(3), 150-156. doi: 10.1097/YIC.0000000000000019
- Kang, S., Chung, Y. and Chung, W. (2014). The role of communication storytelling networks in bullying: a comparison between US and Korean adolescents. *International Journal of Communication*, 8, 2396-2419.
- Kang, Y. (2014, March 20). Poll shows half of South Korean teenagers have suicidal thoughts. *The Wall Street Journal*. Retrieved from <http://blogs.wsj.com/korearealtime/2014/03/20/poll-shows-half-of-korean-teenagers-have-suicidal-thoughts/>
- Khurana, A. and Romer, D. (2012). Modeling the distinct pathways of influence of coping strategies on youth suicidal ideation: a national longitudinal study. *Prevention Science*, 13(6), 644-654. doi: 10.1007/s11121-012-0292-3
- Kim, H. S., Park, W. J., Park, G. R. and Kim, M. H. (2012). Interpersonal relationships and suicide probability among Korean adolescents. *Journal of Korean Academy of Psychiatric and Mental Health Nursing*, 21(1), 11-20. <http://dx.doi.org/10.12934/jkpmhn.2012.21.1.11>
- Kim, J.-N. and Grunig, J. E. (2011). Problem solving and communicative action: a situational theory of problem solving. *Journal of Communication*, 61(1), 120-149. doi: 10.1111/j.1460-2466.2010.01529.x
- Kim, S. S. and Jeong, H. J. (2016). The effects of parents' life satisfaction and depression on children's suicidal ideation. *The Journal of the Korea Contents Association*, 16(2), 257-267.
- Kim, Y., Hsu, S.-H. and de Zúñiga, H. G. (2013). Influence of social media use on discussion network heterogeneity and civic engagement: the moderating role of personality traits. *Journal of Communication*, 63(3), 498-516. doi: 10.1111/jcom.12034
- Kim, Y. C. and Ball-Rokeach, S. J. (2006). Civic engagement from a communication infrastructure perspective. *Communication Theory*, 16(2), 173-197. doi:10.1111/j.1468-2885.2006.00267.x
- _____ and Shin, E. K. (2016). Localized use of information and communication technologies in Seoul's urban neighborhoods. *American Behavioral Scientists*, 60(1), 81-100. doi:10.1177/0002764215601713
- Korea Health Promotion Foundation. (2014, March). *Perceptions about Mental Health: A National Poll of Teenagers*. Seoul, Korea: Korea Health Promotion Foundation.
- Krackhardt, D. (1990). Assessing the political landscape: structure, cognition, and power in organizations. *Administrative Science Quarterly*, 35, 342-369.
- Kupferberg, I. and Gilat, I. (2012). The discursive self-construction of suicidal help seekers in computer-mediated discourse. *Communication & Medicine*, 9(1), 23-35. doi:10.1558/cam.v9i1.23
- Lake, R. L. D. and Huckfeldt, R. (1998). Social capital, social networks, and political participation. *Political Psychology*, 19(3), 567-584. doi:10.1111/0162-895X.00118
- Larsen, M. E., Nicholas, J. and Christensen, H. (2016). A systematic assessment of smartphone tools for suicide prevention. *Plos ONE*, 11(4), 1-14. doi:10.1371/journal.pone.0152285
- Lee, H. J., Shin, M. S., Ko, H. J. and Kwak, Y. S. (2014). An investigation on the validity and reliability of the Korean life inventory scale. *Korean Journal of Pediatric Psychiatry*, 25(3), 163-170.
- Lincoln, K. D. and Chae, D. H. (2010). Stress, marital satisfaction, and mental health among African Americans in the national survey of American life (NSAL). *Journal of Family Issues*, 31(8), 1081-1105. doi:10.1177/0192513X10365826
- _____, Taylor, R. J., Bullard, K. M., Chatters, L. M., Woodward, A. T., Himle, J. A. and Jackson, J. S. (2010). Emotional support, negative interaction and DSM IV lifetime disorders among older African Americans: findings from the national survey of American life (NSAL). *International Journal of Geriatric Psychiatry*, 25(6), 612-621.
- _____, _____, Chatters, L. M. and Joe, S. (2012). Suicide, negative interaction and emotional support among black Americans. *Social Psychiatry and Psychiatric Epidemiology*, 47(12), 1947-1958. doi: 10.1007/s00127-012-0512-y
- Malakouti, S. K., Davoudi, F., Khalid, S., Asl, M. A., Khan, M. M., Alirezaei, N. and DeLeo, D. (2015). The

- epidemiology of suicide behaviors among the countries of the Eastern Mediterranean Region of WHO: a systematic review. *Acta Medica Iranica*, 53(5), 257-265.
- McLaughlin, C., McGowan, I., Kernohan, G. and O'Neill, S. (2016). The unmet support needs of family members caring for a suicidal person. *Journal of Mental Health*, 25(3), 212-216. doi:10.3109/09638237.2015.1101421
- Ministry of Woman and Family. (2012). *An Analysis of Korean Adolescents' Exposure to and Experience with the Harmful Environment*. Seoul, Korea: Ministry of Woman and Family.
- Moon, D. K. and Kim, Y. H. (2011). A meta-regression analysis of Korean adolescents' suicidal thought and its cause. *Korean Journal of Counselling Research*, 12(3), 945-965.
- Nishihara, N. (2015, August 6). Suicide prevention gets a digital twist. *Dallas News*. Retrieved from <http://www.dallasnews.com/news/news/2015/08/06/suicide-prevention-gets-a-digital-twist>
- OECD (2015). Health status: suicide rate. Retrieved from: <https://data.oecd.org/healthstat/suicide-rates.htm>
- Omoto, A. M., Snyder, M. and Hackett, J. D. (2010). Personality and motivational antecedents of activism and civic engagement. *Journal of Personality*, 78(6), 1703-1734. doi: 10.1111/j.1467-6494.2010.00667.x.
- Owen, G., Belam, J., Lambert, H., Donovan, J., Rapport, F. and Owens, C. (2012). Suicide communication events: lay interpretation of the communication of suicidal ideation and intent. *Social Science & Medicine*, 75(2), 419-428. doi: 10.1016/j.socscimed.2012.02.05.
- Park, H. S., Schepp, K. G., Jang, E. H. and Koo, H. Y. (2006). Predictors of suicidal ideation among high school students by gender in South Korea. *Journal of School Health*, 76(5), 181-188. doi: 10.1111/j.1746-1561.2006.00092.x
- Poell, T. (2014). Social media and the transformation of activist communication: exploring the social media ecology of the 2010 Toronto G20 protests. *Information, Communication & Society*, 17(6), 716-731. doi:10.1080/1369118X.2013.812674
- Potera, C. (2015). A School-based program reduces teen suicide attempts. *American Journal of Nursing*, 115(4), 18-18.
- Rice, S., Robinson, J., Bendall, S., Hetrick, S., Cox, G., Bailey, E., Gleeson, J. and Alvarez-Jimenez, M. (2016). Online and social media suicide prevention interventions for young people: a focus on implementation and moderation. *Journal of The Canadian Academy of Child & Adolescent Psychiatry*, 25(2), 80-86.
- Rook, K. S. (1984). The negative side of social interaction: impact on psychological well-being. *Journal of Personality and Social Psychology*, 46(5), 1097-1108.
- Schaefer C., Coyne, J. and Lazarus, R. (1981). The health-related functions of social support. *Journal of Behavioral Medicine*, 4(4), 381-406.
- Shah, D. V., McLeod, J. M. and Yoon, S. H. (2001). Communication, context, and community: an exploration of print, broadcast, and Internet influences. *Communication Research*, 28(4), 464-506. doi:10.1177/009365001028004005
- Snow, R. P. (1983). *Creating Media Culture*. Newbury Park, CA: Sage.
- Sweeney, L., Owens, C. and Malone, K. (2015). Communication and interpretation of emotional distress within the friendships of young Irish men prior to suicide: a qualitative study. *Health Social Care Community*, 23(2), 150-158. doi: 10.1111/hsc.12124
- Tang, F. and Qin, P. (2015). Influence of personal social network and coping skills on risk for suicidal ideation in Chinese university students. *PLoS ONE*, 10(3), 1-13. doi: 10.1371/journal.pone.0121023
- Wasserman, D. (2001). *Suicide: An Unnecessary Death*. London: Martin Dunitz.
- Wilson, G. and Lester, L. (1998). Suicide prevention by e-mail. *Crisis Intervention*, 4, 81-87.
- Wilkin, H. A. and Ball-Rokeach, S. J. (2011). Hard-to-reach? Using health access status as a way to more effectively target segments of the Latino audience. *Health Education Research*, 26(2), 239-253. doi:10.1093/her/cyq090
- _____, Katz, V. S., Ball-Rokeach, S. J. and Hether, H. J. (2015). Communication resources for obesity prevention among African American and Latino residents in an urban neighborhood. *Journal of Health Communication*, 20(6), 710-719. doi: 10.1080/10810730.2015.1018559
- Xu, Y. and Burlison, B. R. (2001). Effects of sex, culture, and support type on perceptions of spousal social support: an assessment of the "support gap" hypothesis in early marriage. *Human Communication Research*, 27(4), 535-566. doi: 10.1111/j.1468-2958.2001.tb00792.x